

**Appendix M**  
**2009 Original Scoping Comments**

To Whom It May Concern,

These comments are submitted by J. Brian Atkins, Director of the Alabama Office of Water Resources, on behalf of the State of Alabama. These comments are submitted through the “Comments and Contact Information Form” found on the Corps’ webpage relating to the “Master Water Control Manual Update Environmental Impact Statement for the Apalachicola-Chattahoochee-Flint River Basin” ([http://www.sam.usace.army.mil/pa/acf-wcm/mail\\_list.htm](http://www.sam.usace.army.mil/pa/acf-wcm/mail_list.htm)). The State of Alabama notes that the form requires a commenting party to choose one, and only one, “Resource Area” to which submitted comments are related. This limitation is, or could be, unduly restrictive, as many comments submitted through this form will likely relate to more than one “Resource Area.” In fact, the comments submitted by the State of Alabama relate in some way to most, if not all, of the “Resource Area” categories listed on the Corps’ website. The State of Alabama is submitting these comments under the “Water Management” category, as it is the broadest and most inclusive category. However, the State of Alabama in no way intends to limit its comments to any single, specific “Resource Area,” and expressly states that its comments relate to each and every “Resource Area” relevant to the substance of the submitted comments. The State of Alabama also reserves the right to submit additional comments regarding the scoping process for the ACF Manual update.

In 1990, the State of Alabama sued the Corps of Engineers over its operations and proposed operations of several federal reservoirs, including Lake Lanier, West Point Lake and Lake Walter F. George (Lake Eufaula) in the Apalachicola-Chattahoochee-Flint River Basin. The operations of these federal reservoirs have a substantial and profound impact upon numerous interests of our citizens. In the lawsuit over the ACF Basin, the State of Alabama claims that the Corps’ management of the ACF System, particularly Lake Lanier, has violated and continues to violate federal law and regulations. Alabama has always maintained that the Corps must update the Water Control Manuals in a manner that is consistent with federal law. Alabama therefore agrees with and supports the Corps’ decision to

re-open the EIS scoping process for the Water Control Manual update in the ACF Basin in light of the July 17, 2009 Federal Court Order issued in MDL-1824 (Tri-States Water Litigation) (the “Order”). As the Corps’ re-notice recognizes, that Order found that the Corps lacks legal authority for most of its current water supply operations at Lake Lanier, and sets clear and unambiguous limitations on the Corps’ ability to facilitate major water supply operations at Lake Lanier beyond July 17, 2012. Alabama believes that the Corps must strictly adhere to the operational directives contained in the Order in revising the Water Control Manuals, as any deviation from the terms of the Order will violate federal law and generate additional conflict and litigation.

To satisfy the Corps’ obligations under Federal law, including the National Environmental Policy Act, the Order makes clear that the Corps must focus on the authorized purposes of Lake Lanier (hydropower, navigation, and flood control) and establish a scope for the manual update that addresses several objectives. First, the Corps should determine the critical yield of each reservoir using the most current hydrologic and climatic conditions. Second, the Corps should adhere to the operational baseline as set forth in detail in the July 17, 2009 Order. Third, the Corps should use the agreed upon HEC-5 model developed during the Comprehensive Study and used in the negotiations of the allocation formula under the ACF River Basin Compact or develop a new model that is agreed upon by the Corps and the states. Fourth, the Corps should assess whether any changes in the baseline conditions are necessary to comply with existing laws and regulations, including laws and regulations designed to protect the environment. Fifth, the Corps should analyze any proposed modifications against the baseline set forth in the Order and other legal requirements to develop the proposed operations for Lake Lanier, West Point Lake and Lake Walter F. George (Lake Eufaula). Each of these objectives is critical to the update process. Refusing to undertake a complete review and assessment of each of these objectives will ensure that valid water control manuals will never be developed and that additional conflicts over the Corps’ operations of the federal reservoirs in the ACF Basin will follow.

The first objective that must be accomplished is to update the critical yield analysis for Lake Lanier, West Point Lake and Lake Walter F. George (Lake Eufaula), Lake. Alabama understands that the Corps is currently working on revised critical yield analyses for the federal reservoirs in the ACF Basin pursuant to the Congressional directive on that subject contained in the Fiscal Year 2010 Senate Energy & Water Development Appropriations Bill of the 111<sup>th</sup> Congress, 1<sup>st</sup> Session. Alabama urges the Corps to conduct a thorough and accurate assessment of this critical measure of reservoir capacity. Without an accurate determination of the amount of water that is available to address the competing demands for water and water storage in the driest of conditions, it will be impossible for the Corps to develop water control manuals that establish operations that are consistent with Congressional intent and satisfy the purposes for which Congress authorized each project. In the past, the Corps has failed to use then-existing droughts of record to calculate the critical yields; deciding instead that the then-existing drought of record was an outlier and could be ignored. Failure to develop a critical yield analysis based upon the actual drought of record cannot be repeated. Alabama looks forward to receipt of the Corps' updated critical yield analysis.

The determination of the critical yield should be done in an open and public process that includes input from stakeholders throughout the ACF Basin. Before the critical yields are finalized, the Corps should conduct one or more public hearings to allow the public to provide input into the process, particularly any modeling or operating assumptions used to make such calculations. The critical yield calculations should consider the inventory of all existing pipes withdrawing water from or discharging treated wastewater to any of the federal reservoirs, including the elevation within the reservoir of each such pipe, and the need to meet downstream minimum flow requirements at Peachtree Creek (750 cfs), Columbus and Phenix City (1,850 cfs) and Plant Farley (2,000 cfs).

After the critical yields of the federal reservoirs are determined, the Corps must evaluate any proposed modification to the water control plans against an appropriate baseline. Alabama agrees

with the Corps that the appropriate baseline must be the operations outlined in the July 17, 2009 Order, as reflected in the Corps' Federal Register notice. The State of Alabama believes that the use of action zones or other proposed operations must be measured against that baseline – again, using an accurate assessment of critical yield.

Alabama is unsure of exactly what the Corps means when it says it intends to “evaluate current present circumstances as part of its EIS, while acknowledging that it currently lacks authority to continue to accommodate present levels of water supply at Lake Lanier beyond July 17, 2012.” While current operations might be noted or described as general background information, Alabama sees little point in any evaluation of operations which have been clearly and unambiguously found to exceed the Corps' legal authority. It would be a clear waste of time and taxpayer resources to conduct any detailed evaluation of such operations. Moreover, Alabama does not believe the Corps can, or should, make any assumptions in the manual update process regarding possible future Congressional action that might expand its current authority. Any such exercise would be inherently speculative and unlikely to result in useful data or relevant analysis. Rather, the Corps should conduct the manual updates strictly in accordance with the current limitations on its legal authority to operate the federal reservoirs in the ACF Basin, as explicitly described in the July 17, 2009 Order.

The manual update process should also evaluate the Corps' compliance with existing environmental laws. Since the federal reservoirs were constructed, Congress, Alabama, Florida and Georgia have enacted a number of laws and regulations designed to protect and enhance the quality of the environment, including the Clean Water Act and the Endangered Species Act. In operating the federal projects in the ACF Basin, the Corps must avoid operations that will violate or lead to violations of water quality standards or will cause directly or indirectly the take of an endangered species or impacts to critical habitat. As part of its effort to update the water control manuals at the federal reservoirs in the ACF Basin, the Corps should ensure that even under drought conditions, sufficient flow

is maintained below each dam, so that water quality standards and endangered species are protected. Specifically, the Corps should coordinate with the Fish & Wildlife Service, the EPA and appropriate state agencies in Alabama, Florida, and Georgia to ensure that the water control manuals are compliant with the Endangered Species Act and the Clean Water Act.

After the critical yield calculations, the baseline conditions, and the Corps' compliance with existing laws are assessed, then the Corps and the states should agree upon the computer model that will be used to evaluate the impact of any changes to the baseline operations. During the Comprehensive Study and the negotiations under the ACF Compact, a significant amount of work was done in the development of the HEC-5 model and the assumptions underlying the model runs. While Florida never agreed to use the HEC-5 model as the only modeling tool and continued to use the STELLA model in connection with the allocation formula negotiations, Alabama, Florida and Georgia and the Corps are familiar with the HEC-5 model. As a result, each of their technical staffs is able to evaluate the results of HEC-5 model runs and to identify potential inconsistencies between the modeled output and anticipated results.

The State of Alabama understands from previous scoping efforts that revisions to the Water Control Manuals will be evaluated using the ResSim model. The ResSim model should only replace the HEC-5 model after the technical staffs of the three states and the Corps agree that the ResSim model is a better tool to evaluate the ACF system. It would be inappropriate and premature for the Corps to develop the ResSim model without input from the states on the assumptions underlying the model and without sufficient time for each of the states to develop the experience and expertise required to evaluate the results generated by the ResSim.

Assuming the Corps uses the appropriate model or allows the states to develop the necessary expertise in the ResSim model, the Corps should evaluate potential modifications to the baseline conditions that would form the basis for the new water control manuals and master manual.

Any proposed modification to the baseline condition must determine whether and to what extent such modifications in or deviations from the approved operations prevent the Corps from fully satisfying the Congressional authorized project purposes of hydropower generation, flood control, and navigation support. The Corps must also assess whether the proposed operations under the revised water control plan will be consistent with applicable federal laws, including, but not limited to, the Water Supply Act and the Flood Control Act. Alabama believes that the Order imposes firm outer limits on the Corps' ability to operate for water supply, and under no circumstances should the Corps consider reservoir operations that exceed the water supply parameters set forth in the Order.

This step requires an assessment of any potential reservoir construction within the ACF Basin that might impact inflows into those federal reservoirs. The State of Georgia has developed a water supply plan that includes various assumptions and projections regarding the use of federal reservoirs for water supply purposes over the next several years. Moreover, the State of Georgia is currently developing contingency plans that include a variety of potential options, including construction of additional reservoirs. To date, the Corps has not reviewed any of the potential efforts within the State of Georgia to increase the amount of water storage available for water supply to determine whether they would require a reallocation of storage in federal reservoirs. Failure to consider the impact of these assumptions and projections upon the potential future operations of Corps' projects would violate the Corps' obligations to consider the cumulative impacts of known and foreseeable future actions. The Corps should consider these potential reallocations of storage in the environmental impact statement under NEPA, but should also consider the extent to which these reallocations exceed the limits of the Corps' water supply authority, as set forth in the Order.

The State of Alabama is also concerned that some proposed reservoir projects under consideration in Georgia may have impact upon inflows into the federal reservoirs in the ACF Basin, including inflows from the Flint River. Whether such projects impact the amount of water flowing into

the federal reservoirs or the demands placed upon the federal reservoirs by downstream interests, a detailed assessment of the environmental and operational impacts of such proposed projects is critical to future operations of the federal and non-federal projects in the ACF Basin. Again, the review of such projects should include an assessment of each project individually as well as cumulative impacts with other potential and foreseeable projects. In assessing the cumulative impacts associated with the operation of the ACF Basin, the Corps must consider the amount of water that may be lost from the basins through inter-basin transfers and consumptive uses and should consider appropriate limitations on any such losses, particularly under drought conditions.

The State of Alabama also believes that the Corps' updated manuals should establish some degree of certainty in drought conditions. The Corps' water control manuals should recognize that releases from conservation storage at Lake Lanier for protection of downstream flows and water quality are necessary and expected and that impacts to recreation and recreation facilities are temporary but unavoidable during dry conditions. Under no circumstances should the Corps base the critical yield analysis of the reservoirs on the entire conservation storage pools and then adopt operational schemes that prevent the use of any portion of such storage. The bottom of the conservation pool at Lake Lanier is set at 1035' MLS and the critical yield calculation assumes that the entire conservation pool is exhausted. Limiting releases from Lake Lanier to prevent the lake from going below an elevation well above 1035' MLS establishes an artificial barrier that was never authorized or approved by Congress.

Finally, Alabama would caution the Corps against basing any operational decisions in the ACF on projections of economic impacts related to reductions in water supply or recreation and opportunities. As the Order makes exceedingly clear, the Corps' authority to operate its projects in the ACF is limited by the enabling legislation for those projects and other federal law. To the extent economic factors exist that are unrelated to the Congressionally authorized purposes of these revisions,

Alabama believes they are irrelevant and cannot be considered as a basis for operational changes in the Basin.

As the Corps is keenly aware, the State of Alabama has a significant interest in the operations of the federal reservoirs in the ACF Basin. The Corps' operation of these reservoirs has a direct and substantial impact on the quantity and quality of water flowing into Alabama. Any effort to update the water control manuals and the master manual should proceed in a logical and stepwise manner and should start with a calculation of the critical yield from each reservoir. Without determining how much water is available from each reservoir during critical times, it is impossible to evaluate potential modifications in the operations of these reservoirs and to determine whether such operations are authorized by law. The Corps has a significant responsibility in protecting water quality and the environment downstream of its projects. A detailed review of the operations and proposed operations under existing environmental rules and regulations needs to be a significant part of this exercise. Finally, the Corps' operations should not protect uses of the water stored in these reservoirs that have not been authorized by Congress. In choosing between releases and retention, the Corps must consider the authorized purposes of the reservoir and not make its decision based upon what it believes to be politically feasible or economically beneficial.

The Secretary of the Army assured Alabama's congressional delegation that the update of the ACF water control plan would involve a complete, top-to-bottom, "clean slate" review of the ACF system. Alabama expects that the Secretary's assurance will be fulfilled, and the issues raised in this letter must be fully addressed in order for the assurance to be met.

Respectfully Submitted,

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# APALACHICOLA RIVERKEEPER®

SAVING AN AMERICAN TREASURE

December 30, 2009

Submitted Electronically Via

[http://www.sam.usace.army.mil/pa/acf-wcm/mail\\_list.htm#form](http://www.sam.usace.army.mil/pa/acf-wcm/mail_list.htm#form)

Colonel Byron Jorns  
Commander, Mobile District  
U.S. Army Corps of Engineers  
PO Box 2288  
Mobile AL 36628-0001

RE: Notice of Intent To Revise Scope of Draft Environmental Impact Statement for  
Updating the Water Control Manuals for the Apalachicola-Chattahoochee-Flint  
River Basin To Account for Federal District Court

Dear Colonel Jorns:

Apalachicola Riverkeeper appreciates the opportunity to comment on the above-referenced notice of intent regarding the Draft Environmental Impact Statement for Updating the Water Control Manuals for the Apalachicola-Chattahoochee-Flint River Basin (the "Draft EIS"). These comments are in addition to the scoping comments submitted on the Draft EIS by the Apalachicola Riverkeeper on March 15, 2009.

On July 17, 2009, Judge Paul A. Magnuson ruled that the Corps did not have the authority to utilize the Buford Dam/Lake Sidney Lanier project for water supply purposes. As a result, the Corps' current management of the federal Apalachicola-Chattahoochee-Flint (ACF) system is illegal. Judge Magnuson also ruled that water supply withdrawals from Lake Lanier will be reduced to no more than 10 million gallons per day beginning in July 2012, unless the Corps obtains Congressional authorization for water supply or the parties to the litigation reach some other resolution. It is crucial that from this point forward the Corps manage the ACF system to ensure protection of the ecological integrity of the ACF ecosystem and to maximize water conservation.

The Apalachicola Riverkeeper urges the Corps to conduct a comprehensive and robust analysis of the environmental consequences of potential management regimes for the ACF River Basin and to develop and recommend a water management regime that will protect and restore the ecological health of the Apalachicola River and Bay and the entire ACF system. Fundamental to such a regime is the establishment and protection of the instream flows needed to protect and restore the chemical, physical, and biological integrity of the ACF system, and to protect and recover threatened and endangered species and species at risk. It is critical that the instream flow needs be assessed through the Draft EIS and protected by the final recommended plan.

## **Management Of The ACF Has Caused Devastating Impacts To The Apalachicola River and Bay**

The Apalachicola River is a national treasure and one of the most productive river systems in the southeast. It has been designated by the United Nations as an International Biosphere Reserve, by the United States as a National Estuarine Research Reserve, and by the State of Florida as an Outstanding Florida Water. The river harbors the most diverse assemblage of freshwater fish in Florida, the largest number of species of freshwater snails and mussels, and the most endemic species in western Florida. The river basin is home to some of the highest densities of reptile and amphibian species on the continent.

The Apalachicola's waters and floodplain are also the biological factory that fuels the Apalachicola Bay, one of the most productive estuaries in the northern hemisphere. The Apalachicola Bay is home to one of the largest and most productive oyster harvesting areas in the Gulf of Mexico, one of the principal nurseries for Gulf shrimp and blue crabs, and major commercial fishing operations. Apalachicola Bay provides nearly 90 percent of Florida's oysters and over 10 percent of the nation's oysters. The river and bay provide thousands of commercial fishing, recreational fishing, and ecotourism jobs, and form the cornerstone of the economy of six Florida counties.

Despite its enormous ecological value, the Apalachicola River ecosystem has been severely degraded as a result of the construction and operation of the ACF reservoirs, the impoundment of water by additional non-Federal upstream reservoirs, consumptive uses of water upstream, and a long history of navigational dredging. These activities have altered the river's flow regimes; reduced the river's hydraulic complexity and habitat diversity; smothered and displaced habitat in the river's rich sloughs, floodplains, and channel margins; and destabilized and widened the river channel. Decreased water levels in the river have caused the Apalachicola's floodplains and sloughs to dry out, with severe ecological effects. The floodplain forest is drying out and swamp trees are dying off in large numbers.

It is essential that the Corps develop and implement a fundamentally new approach to managing the ACF.

### **Scoping Recommendations**

#### **I. The Draft EIS Must Evaluate Alternatives That Will Protect and Restore the Ecological Health of the Apalachicola River and Bay, and the Entire ACF System**

"The primary purpose of an environmental impact statement is to serve as an action-forcing device" to insure that the policies and goals of NEPA are infused into the decision making process. 40 C.F.R. § 1502.1. The policy goals of NEPA include a continuing responsibility on the part of the federal government to use all practicable means to:

- (1) “fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;”
- (2) “assure for all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings; [and]”
- (3) “attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences.”

42 U.S.C. § 4331(b). The Draft EIS must “state how alternatives considered in it and decisions based on it will or will not achieve” these policy goals, and the goals established by other environmental laws and policies. 40 C.F.R. § 1502.2(d).

The Draft EIS must play an important role in the decision making process and is not to be used to “rationalize or justify decisions already made.” 40 C.F.R. § 1502.5. To do this, the Draft EIS must ensure that high quality environmental information is available to public officials and citizens **before** decisions are made and actions are taken so that information can help the Corps make decisions regarding the Water Control Manuals that are based on an understanding of environmental consequences, and take actions that protect, restore, and enhance the environment. 40 C.F.R. §§ 1502.1, 1501.2 (emphasis added).

**A. The Draft EIS Must Rigorously Explore and Objectively Evaluate All Reasonable Alternatives**

The Draft EIS must “[r]igorously explore and objectively evaluate all reasonable alternatives.” 40 C.F.R. § 1502.14(a) (emphasis added). This requires a “**thorough** consideration of all appropriate methods of accomplishing the aim of the action” and an “**intense** consideration of other more ecologically sound courses of action.” *Environmental Defense Fund, Inc. v. Corps of Engineers of U.S. Army*, 492 F.2d 1123, 1135 (5th Cir. 1974) (emphasis added). Like all EISs, the Draft EIS must “[i]nclude reasonable alternatives not within the jurisdiction of the lead agency.”<sup>1</sup> 40 C.F.R. § 1502.14(c). A viable but unexamined alternative will render the Draft EIS inadequate. *See, e.g. Muckleshoot Indian Tribe v. U.S. Forest Service*, 177 F.3d 800, 814 (9th Cir. 1999).

The Draft EIS also must explore an appropriate range of alternatives. Because the nature and scope of the proposed action (revision of the Water Control Manuals) will have significant, basin-wide impacts, the Draft EIS must examine a broad range of alternatives. *Alaska*

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<sup>1</sup> The January 2009 Scoping Report incorrectly suggests that alternatives outside of the Corps’ existing authority can only be evaluated through preparation of a feasibility study. *See* January 2009 Scoping Report at 38 (“Many of the alternatives suggested are outside the existing authority of the Corps and could not be implemented without additional congressional authority. Suggestions that are outside the existing Corps authority may be considered by conducting a feasibility study and making appropriate recommendations to Congress for their authorization.”).

*Wilderness Recreation and Tourism v. Morrison*, 67 F.3d 723, 729 (9th Cir. 1995) (the range of alternatives that must be considered is determined by the nature and scope of the proposed action, and the greater the impacts and scope of the proposed action, the greater the range of alternatives that must be considered); *see Sierra Club v. Espy*, 38 F.3d 792, 803 (5th Cir. 1994) (the range of alternatives that must be considered in an environmental assessment decreases as the environmental impact of the proposed action becomes less and less substantial). The range of alternatives considered is not sufficient if each alternative has the same end result. *State of California v. Block*, 690 F.2d 753, 767 (9th Cir. 1982) (holding that an inadequate range of alternatives was considered where the end result of all eight alternatives evaluated was development of a substantial portion of wilderness).

**B. The Recommended Alternative Must Protect And Restore The Ecological Health Of The Apalachicola River and Bay And The Entire ACF System And Comply With Environmental Protection Laws**

The alternative recommended by the Draft EIS must comply with the national water resources policy established by Congress in 2007, the longstanding water resources federal objective to enhance the environment, and the full suite of federal laws and policies designed to protect the environment.

In 2007, Congress established a new national policy that was immediately applicable to all water resources projects. Of particular importance to the alternatives analysis in the Draft EIS is the new requirement that “all water resources projects” shall “protect[] and restor[e] the functions of natural systems and mitigate[e] any unavoidable damage to natural systems.” 33 U.S.C 1962-3 (established by § 2031(a) of the Water Resources Development Act of 2007).

Enhancement of the environment has been an important federal objective for water resources programs for decades. Corps regulations in place since 1980 state that:

“Laws, executive orders, and national policies promulgated in the past decade require that the quality of the environment be protected and, where possible, enhanced as the nation grows. . . . Enhancement of the environment is an objective of Federal water resource programs to be considered in the planning, design, construction, and **operation and maintenance of projects**. Opportunities for enhancement of the environment are sought through each of the above phases of project development. Specific considerations may include, but are not limited to, **actions to preserve or enhance critical habitat for fish and wildlife; maintain or enhance water quality; improve streamflow; preservation and restoration of certain cultural resources, and the preservation or creation of wetlands.**

33 C.F.R. § 236.4. (emphasis added).

Critically, the alternative ultimately recommended by the Draft EIS must also comply with the full suite of federal laws and policies designed to protect the environment. These include, the Endangered Species Act, the Clean Water Act, the Safe Drinking Water Act, the Magnuson-Stevens Fishery Conservation and Management Act, the Coastal Zone Management Act, and the new mitigation requirements applicable to Corps civil works projects that were established by § 2036(a) of the Water Resources Development Act of 2007. These new mitigation requirements must be satisfied, among other times, whenever the Corps will be recommending a project alternative in an EIS. 33 U.S.C. § 2283(d). The recommended alternative must also comply with the strictures of Judge Paul A. Magnuson's July 17, 2009, order.

The alternative ultimately recommend by the Draft EIS must also comply with the Clean Water Act water quality certification requirements of Florida, Alabama, and Georgia. This includes compliance with Florida's strict instream flow protection requirements.

### **C. Reasonable Alternatives That Must Be Considered**

Apalachicola Riverkeeper urges the Corps to fully and comprehensively consider an alternative that manages the ACF system to ensure the maintenance of ecologically sound instream flows that will protect and restore the chemical, physical, and biological integrity of the Apalachicola River and its floodplain, the Chattahoochee River, the Flint River, and the Apalachicola Bay; and will recover threatened and endangered species and species at risk in those waters.

Apalachicola Riverkeeper further urges the Corps to fully consider the following recommendations to help implement this alternative (or as components of other alternatives):

- Require that the appropriate ecologically sound instream flows be established jointly by the Administrator of the U.S. Environmental Protection Agency, the Director of the U.S. Fish and Wildlife Service, the Director of the National Oceanic and Atmospheric Administration, and the Director of the U.S. Geological Survey, in consultation with the National Academy of Sciences. The ideal flow regime would be one that mimics the quantity, timing, and quality of flows prior to construction of the dams and reservoirs within the ACF system.
- Impose restrictions on municipal water supply withdrawals that include: (a) prohibiting individual withdrawals if such withdrawals individually or cumulatively will affect the ability to maintain the necessary instream flows; (b) prohibiting specific withdrawals unless the municipality utilizing the withdrawal has demonstrated that it has implemented an enforceable source water protection program that includes the protection of critical areas through such actions as the purchase of easements or lands and includes the enactment of regulations that promote low impact development; (c) prohibiting specific withdrawals unless the municipality utilizing the withdrawal has also demonstrated that it is utilizing water efficiently; and (d) prohibiting new or increased transfers of water into, out of, or between the ACF Basin and other watersheds or basins.

- Increase storage capacity by such things as dredging sediments captured by the Lakes; raising the top of the dams; and acquiring flood prone areas and reducing flood control;
- Increase the percentage of water returned to the river (in a clean condition);
- Require implementation of aggressive conservation measures that could reduce withdrawals and depletions from the ACF system.

## **II. The Draft EIS Must Comprehensively Analyze the Direct, Indirect, and Cumulative Impacts of the Proposed Alternatives**

In comparing and analyzing potential alternatives, the Draft EIS must examine, among other things, the direct, indirect, and cumulative environmental impacts of a full range of alternatives, the conservation potential of those alternatives, and the means to mitigate adverse environmental impacts. 40 C.F.R. § 1502.16. This assessment is essential for determining whether less environmentally damaging alternatives are available.

The Draft EIS must provide “quantified or detailed information” on the impacts, including the cumulative impacts, so that the courts and the public can be assured that the Corps has taken the mandated hard look at the environmental consequences of the Project. *Neighbors of Cuddy Mountain v. U. S. Forest Service*, 137 F.3d 1372, 1379 (9th Cir. 1998); *Natural Resources Defense Council v. Callaway*, 524 F.2d 79, 87 (2d Cir. 1975). Critically, if information that is essential for making a reasoned choice among alternatives is not available, the Corps must obtain that information unless the costs of doing so would be “exorbitant.” 40 C.F.R. § 1502.22.

Direct impacts are caused by the action and occur at the same time and place as the action. Indirect impacts are also caused by the action, but are later in time or farther removed from the location of the action. 40 C.F.R. § 1508.8. Cumulative impacts are:

“the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.”

40 C.F.R. § 1508.7. A cumulative impact analysis ensures that the agency will not “treat the identified environmental concern in a vacuum.” *Grand Canyon Trust v. FAA*, 290 F.3d 339, 346 (D.C. Cir. 2002).

A meaningful analysis of cumulative impacts must identify:

(1) the area in which effects of the proposed project will be felt; (2) the impacts that are expected in that area from the proposed project; (3) other actions – past, present, and proposed, and reasonably foreseeable – that have had or are expected to have impacts in the same area; (4) the impacts or expected impacts from these other actions; and (5) the overall impact that can be expected if the individual impacts are allowed to accumulate.

*TOMAC, Taxpayers Of Michigan Against Casinos v. Norton*, 435 F.3d 852 (D.C. Cir. 2006) (quoting *Grand Canyon Trust*, 290 F.3d at 345); *Fritiofson v. Alexander*, 772 F.2d 1225, 1245 (5<sup>th</sup> Cir. 1985) (holding this level of detail necessary even at the less detailed review stage of an Environmental Assessment).

Where, as here, the project area encompasses entire river basins, the cumulative impacts analysis must analyze the cumulative effects of other projects in those river basins. *See, e.g., LaFlamme v. F.E.R.C.*, 852 F.2d 389, 401-02 (9th Cir. 1988); *Natural Resources Defense Council v. Callaway*, 524 F.2d 79, 94 (2d Cir. 1975). This includes an analysis of the cumulative effects of federal, state, and private projects and actions. The requirement to assess non-Federal actions is not “impossible to implement, unreasonable or oppressive: one does not need control over private land to be able to assess the impact that activities on private land may have” on the project area. *Resources Ltd., Inc. v. Robertson*, 35 F.3d 1300, 1306 (9th Cir. 1993).

As CEQ has made clear, in situations like those in the ACF where the environment has already been greatly modified by human activities, it is not sufficient to compare the impacts of the proposed alternative against the current conditions. Instead, the baseline must include a clear description of how the health of the resource has changed over time to determine whether additional stresses will push it over the edge. Council on Environmental Quality, *Considering Cumulative Effects Under the National Environmental Policy Act* at 41 (January 1997).

#### **A. Types Of Impacts That Must Be Analyzed**

It is critical that the Draft EIS analyze the direct, indirect, and cumulative impacts of proposed alternative management regimes on the:

- Hydrology, channel morphology, stream flow (including deviations from the historical water levels, timing of freshwater flows, and natural flood pulse), and water quantity in the Apalachicola River and the ACF Basin;
- Water quality, salinity levels, and nutrient composition in the Apalachicola River and Bay, and the ACF Basin;
- Fish and wildlife in the Apalachicola River, Floodplain, and Bay, the ACF Basin, and the Gulf of Mexico including impacts to commercially and recreationally harvested species, and to affected migratory species throughout their ranges;
- Species listed as threatened or endangered under the federal Endangered Species Act (including both impacts within the Apalachicola River and ACF Basin and population-

wide impacts), and to areas designated as critical habitat under the federal Endangered Species Act in the Apalachicola River and ACF Basin;

- Riverine and floodplain wetlands, including the Apalachicola River floodplain wetlands, and the Apalachicola River floodplain forests and sloughs; and
- Marine fish and species and their habitat which require nutrients and fresh water from Apalachicola River and Bay to sustain their offshore Gulf ecosystem, otherwise known as the “Green River” effect.

## **B. Actions that Must Be Evaluated In The Cumulative Impacts Analysis**

To comply with the cumulative impact assessment requirements, the Corps must analyze whether and how the proposed alternative management regimes could supplement, aggravate, or intensify the impacts of the following types of past, present, and reasonably foreseeable future actions throughout the entire ACF Basin:

- Past, present, and reasonably foreseeable future water withdrawals from the Apalachicola, Chattahoochee, and Flint Rivers from Federal, non-Federal, and private projects and actions;
- Past, present, and reasonably foreseeable future reservoir and dam operations;
- Past navigational dredging activities (with particular emphasis on changes in channel morphology, water levels, and floodplain forests and wetlands);
- Past, present, and reasonably foreseeable development, including commercial, residential, and road construction;
- Reasonably foreseeable future changes in rainfall, water quantity, salinity, wetland losses, sea level rise, and storm events that will result from climate change.
- Reasonably foreseeable future improvements in water conservation.

## **C. The Proper Baseline for Analyzing Cumulative Impacts**

In analyzing the cumulative effects of the activities discussed above, the Corps must define and utilize the historical flow conditions (pre-ACF Federal and pre-non-Federal dams and reservoirs) of the Apalachicola, Chattahoochee, and Flint rivers as the baseline, with particular attention to the historical flow regime of the Apalachicola River. Divergence from the historical flow conditions in the ACF have resulted in significant adverse impacts to Apalachicola River and Bay. As noted above, if this information is not currently available, the Corps must obtain this information unless the costs of doing so would be “exorbitant.” 40 C.F.R. § 1502.22.

To establish the proper baseline, the Draft EIS should document and evaluate the historical changes in the ACF Basin with respect to the following indicators:

- Historical flows (*i.e.*, the pre-dam and reservoir flow regimes), including the amount, timing, and quality of flows in the ACF rivers;
- Acres of river and floodplain wetlands lost;

- Acres of native upland habitats lost;
- Miles of streambed lost or modified;
- Changes in stream flows;
- Changes in ground water elevations;
- Changes in the concentrations of indicator water quality constituents;
- Changes in the abundance, distribution, and diversity of indicator fish communities; and
- Changes in rainfall, and reasonably foreseeable future changes;

Apalachicola Riverkeeper refers the Corps to the pre-dam flows outlined in Attachment 1 to these comments (Attachment 1 was also provided with the March 15, 2009, Apalachicola Riverkeeper scoping comments). The unimpaired flow data set should be calibrated to achieve a comparable representation of the pre-dam flows in Attachment 1 to ensure that it accurately reflects what would occur under natural conditions.

To accurately analyze and understand the impacts to natural resources, consideration of rainfall must be included and appropriate compensation made for climatic changes. Our evaluation of the relationship indicates that flows are significantly reduced even though the most recent droughts are no worse than the previous droughts. This invalidates any justification for lowering minimum flows due to contentions that droughts are becoming more severe.

Apalachicola Riverkeeper also urges the Corps to abandon its current methodology of calculating basin inflow, as that methodology does not accurately reflect inflows to the basin.

### **III. The Draft EIS Should Be Subjected To Independent Peer Review**

Apalachicola Riverkeeper requests a peer review by the National Academy of Sciences for the Draft EIS and Water Control Manuals for the ACF Basin pursuant to 33 U.S.C. § 2343(a)(3)(A)(iii). The Corps' plans for water control management for the ACF are clearly controversial as defined by the statute. There "is a significant public dispute as to the size, nature, or effects of the project" and "there is a significant public dispute as to the economic or environmental costs or benefits of the project." Indeed, few projects are as controversial as the Corps' decision regarding water control management within the ACF Basin.

Apalachicola Riverkeeper requests that the Corps charge the National Academy of Sciences with reviewing and assessing, among other things:

- (1) The instream flows needed to protect and restore the chemical, physical, and biological integrity of the Apalachicola River and its floodplain, the Chattahoochee River, the Flint River, and the Apalachicola Bay; and the instream flows needed to recover threatened and endangered species and species at risk in those waters.

- (2) The implications for the ecological integrity and health of the Apalachicola River and its floodplain, the Chattahoochee River, the Flint River, and the Apalachicola Bay under the water control plans being evaluated by the Corps;
- (3) The health and viability of the fish and wildlife resources within the Apalachicola River and its floodplain, the Chattahoochee River, the Flint River, and the Apalachicola Bay under the water control plans being evaluated by the Corps, including the flows and timing of those flows needed to ensure the health and viability of these fish and wildlife resources;
- (4) The effects on species listed as threatened or endangered under the federal Endangered Species Act, and the effects on Endangered Species Act designated critical habitat within the Apalachicola River and its floodplain under the water control plans being evaluated by the Corps; and
- (5) The effects of the various water control plans on the flood protection values of a healthy Apalachicola River floodplain.

Thank you for the opportunity to provide comments.

Sincerely,

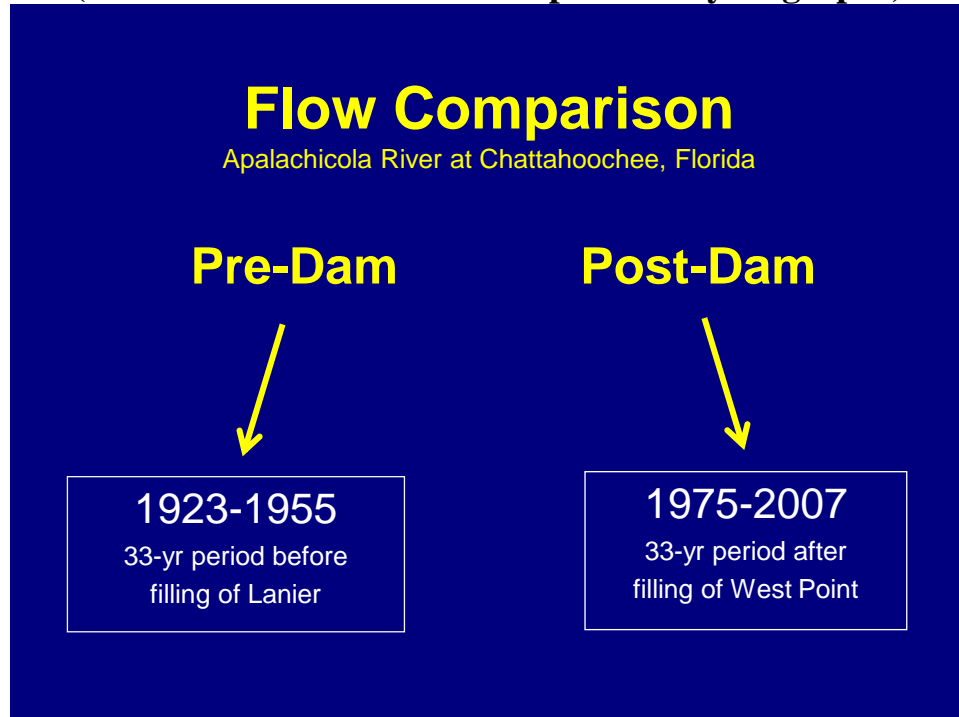


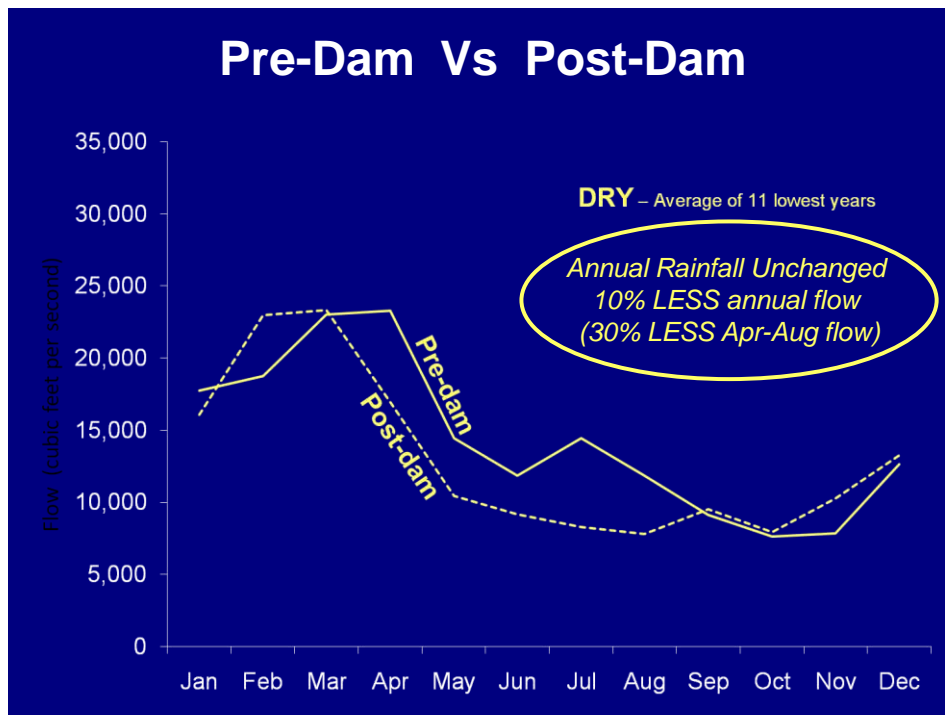
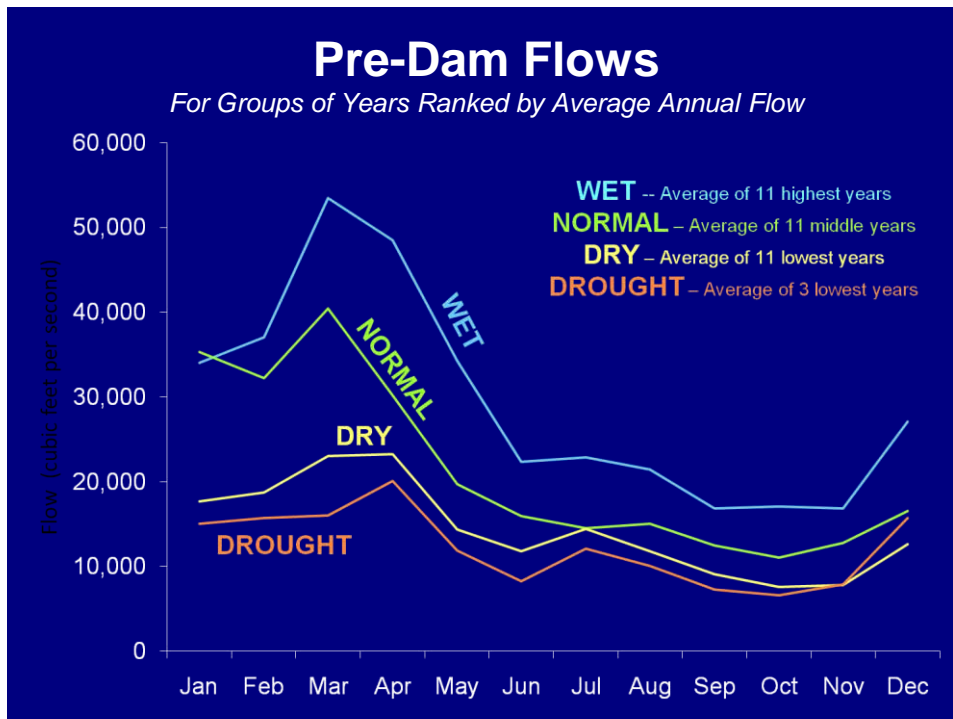
Dan Tonsmeire  
Riverkeeper

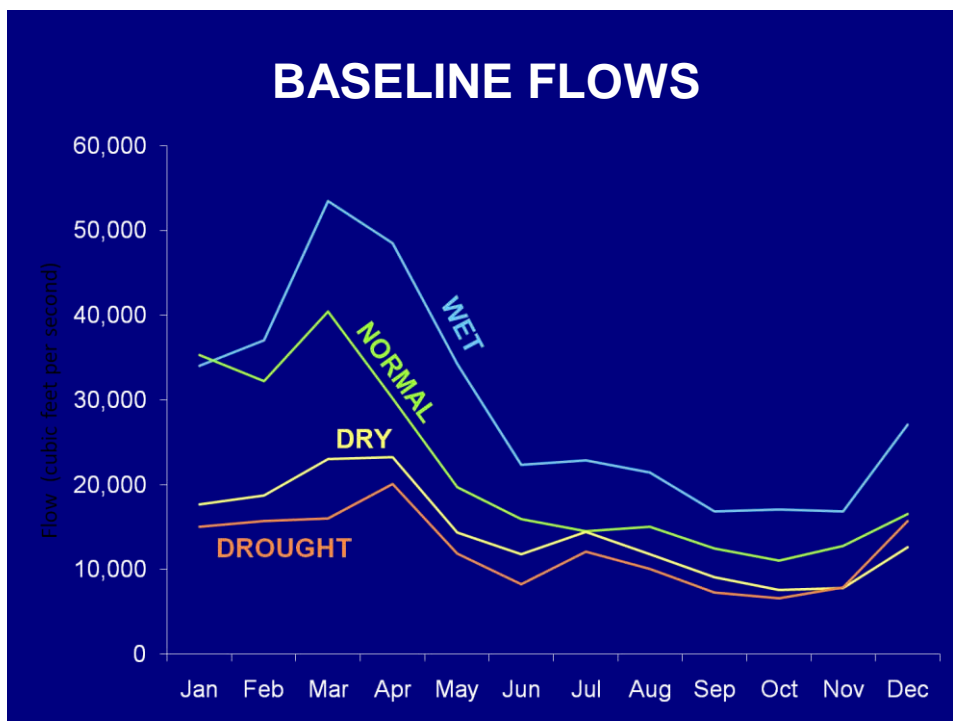
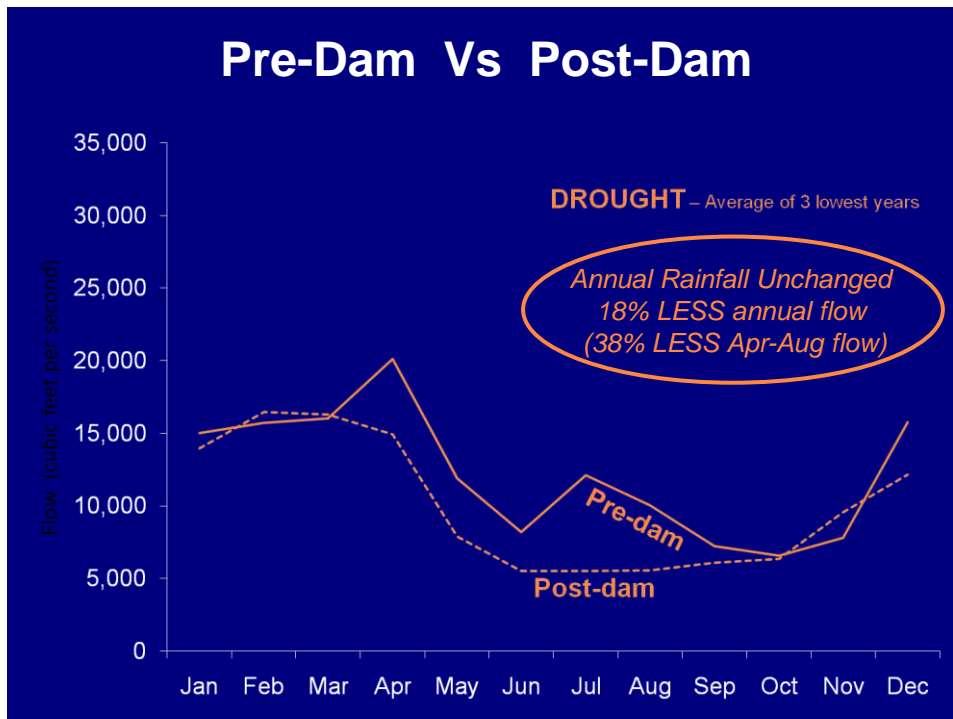


## Attachment 1

### (Pre and Post Dam Flow Comparison Hydrographs)







# KING & SPALDING

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Atlanta, GA 30309-3521  
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December 30, 2009

## VIA OVERNIGHT DELIVERY AND ELECTRONIC COMMENT

Tetra Tech, Inc.  
107 Saint Francis Street  
Suite 1403  
Mobile, AL 36602-9986

**Re: Notice of Intent To Revise Scope of Draft Environmental Impact Statement  
for Updating the Water Control Manuals for the Apalachicola-  
Chattahoochee-Flint River Basin To Account for Federal District Court  
Ruling**

To Whom it May Concern:

The Atlanta Regional Commission, the City of Atlanta, Georgia, the Cobb County-Marietta Water Authority, Fulton County, DeKalb County, and the City of Gainesville, Georgia (collectively, the “Water Supply Providers”) submit these comments on the scope of the U.S. Army Corps of Engineers’ Environmental Impact Statement for the updates to the Water Control Manuals for the Apalachicola-Chattahoochee-Flint (“ACF”) River Basin, 74 Fed. Reg. 59,965 (Nov. 19, 2009) (the “Revised Notice”).

The Revised Notice states that the scope of the EIS and water control manual updates will be limited based on a July 17, 2009 district court ruling in *In re Tri State Water Rights Litigation*, Civil Action No. 3:07-md-1 (M.D. Fla.), and that the Corps “will consider only operations that are within [its] existing authority” as determined by the district court. 74 Fed. Reg. at 59,966. It also states that the Corps will not “consider a reallocation of storage for water supply at Lake Lanier as part of the process for updating the ACF water control plans and manuals.” *Id.*

The Water Supply Providers are deeply concerned that the scope of the new Water Control Plan and the new EIS have been drawn so narrowly as to render them meaningless. The stakeholders need and deserve a full and fair study of all alternatives to the current operating plans for the ACF Basin. Therefore the EIS should not be limited to alternatives consistent with

Tetra Tech, Inc.  
December 30, 2009  
Page 2

the Corps' existing authority. To the contrary, the decisionmakers in Congress and within the Corps need to know that much better alternatives exist.

Indeed, the tragedy of this controversy is that there is plenty of water in the ACF Basin to meet the reasonable needs of all stakeholders, but only if the reservoirs are operated properly. Lake Lanier provides ample storage to meet future water supply needs for metropolitan Atlanta and North Georgia at minimal cost to the environment or downstream stakeholders. Indeed, the Water Supply Providers have proposed an alternative operating plan for the ACF Reservoir system that meets future water demands while also performing at least as well or better for all other stakeholders. Our plan would be to meet our future water supply needs while also producing more valuable hydropower, and it would also be better for the species in the Apalachicola River based on the metrics developed by the Fish and Wildlife Service in the Biological Opinion. These and other alternatives to the current operations should be included in the EIS.

**The Corps Is Required by NEPA to Study All Reasonable Alternatives, Including Alternatives that Exceed the Corps' Current Authority**

To the extent the Army believes its hands are tied by Judge Magnuson's order or by any other limitations on its current authority, we disagree. NEPA requires all federal agencies to "[r]igorously explore and objectively evaluate all reasonable alternatives" to the proposed action, including alternatives that are "not within the jurisdiction of the lead agency." 40 C.F.R. § 1502.14. Thus, NEPA mandates that the Corps consider "all reasonable alternatives," even if they exceed the Corps' current authority. *See, e.g., Natural Resources Defense Council v. Morton*, 458 F.2d 827, 837 (D.C. Cir. 1972) ("The mere fact that an alternative requires legislative implementation does not automatically establish it as beyond the domain of what is required for discussion, particularly since NEPA was intended to provide a basis for consideration and choice by the decisionmakers in the legislative as well as the executive branch.").

Given the legal requirement to study all reasonable alternatives, including alternatives that exceed the Corps' current authority, it would be arbitrary and capricious for the Corps to exclude consideration of water supply from the EIS. The alternative of securing whatever authorization might be required to continue doing what the Corps has been doing for the past thirty years is clearly a reasonable one—indeed, the July 17 Order would appear to *direct* the Corps to seek such authorization. The alternative of reallocating storage as necessary to meet future water supply needs should also be studied. Indeed, the Corps adopted this alternative as the preferred alternative in the 1989 Post-Authorization Change Report after decades of study. The fact that the Corps might need to secure additional Congressional authorization to reallocate storage in Lake Lanier does not make this alternative any less reasonable today than it was in 1989. To the contrary, it is just as clear as it ever was that water supply is by far the highest and best use of the storage in Lake Lanier. The benefits of reallocating storage to water supply exceed costs to hydropower and other purposes by billions of dollars, and the environmental impact would be negligible. These facts, and the trade-offs presented, should be included in the

Tetra Tech, Inc.  
December 30, 2009  
Page 3

EIS to ensure that this information will be available to decisionmakers within the Army and in Congress.

**The EIS Should Assist Decisionmakers in Determining Whether to Seek Additional Authority for Water Supply Operations at Lake Lanier**

As stated above, the EIS should consider alternatives that achieve the highest and best use of the resource without regard to any existing limitations on the Corps' legal authority. To the extent additional authority is required, the EIS should help the decisionmakers within the Corps decide whether to seek it.

In addition to being required by NEPA, this approach to the EIS would significantly increase its value to the Corps, to the stakeholders, and to Congress. It would make little sense for the EIS simply to assume that Lake Lanier is off-limits to water supply when the matter is still being litigated on appeal, when the district court itself has all but demanded that the Corps seek additional authorization, and when the three States are currently hard at work to negotiate a compromise. The EIS should therefore be broad enough to acknowledge the current legal reality while, at the same time, accommodating the possibility that the current reality might change. Indeed, given the practical reality that the legal authorization *must* change, the EIS, to be relevant, should help decisionmakers decide how to change it. It can only do this by including consideration of alternatives that meet current and future water supply needs.

**The Corps Must Also Consider Alternatives to Accommodate Water Supply Within the Confines of Judge Magnuson's Order**

The Army should also consider alternatives to accommodate water supply needs within the confines of the July 17 Order. Much can be done, even within these strictures, to mitigate the environmental and economic catastrophe that is unfolding. For example, the Corps can and should study alternatives to the current hydropower schedule to ensure that peaking releases are scheduled on a reliable basis to meet downstream water supply needs incidental to hydropower releases. We do have specific proposals in this regard and would appreciate the opportunity to meet with the Corps to discuss them.

**The Corps Must Consider the Indirect and Cumulative Effects of Its Operations**

The EIS must also provide a full evaluation of the effects of the proposed water control plan, along with any "indirect effects" and any "cumulative effects." One effect of operating the plan in the manner proposed by the Revised Notice will be to cause the Water Supply Providers and the State of Georgia to embark on a massive infrastructure program in a futile attempt to replace the storage that is currently provided by Lake Lanier. The environmental, economic, and social costs of this program will be incalculable and the ultimate benefit to Florida and Alabama will be negligible. Furthermore, notwithstanding the enormous damage it will wreak, even such a program cannot provide adequate water to meet all of metro Atlanta's water supply needs, certainly not within the time prescribed by the July 17 Order. Therefore, the EIS should also study the economic and social costs of the massive water supply shortages that will result if water supply is eliminated as a purpose of Lake Lanier. Whether these impacts are considered

Tetra Tech, Inc.  
December 30, 2009  
Page 4

“indirect” or “cumulative” effects of the proposed action, the EIS must include a thorough assessment of them.

**The Corps Should Consider Alternatives to Address Problems Created by  
Channel Degradation and Other Issues**

Finally, the EIS should also include a study of alternative “solutions” to the problems that Florida has identified in the Apalachicola River and Bay. Although few if any of these problems were caused by reservoir operations, Florida seems to believe that reservoir operations can be used to solve them. As we have shown in previous comment letters, however, the cost of using the reservoirs in this manner far exceeds any small benefit that can be achieved. The Army should consider other, more practical solutions instead. Gwinnett County provided a summary of alternatives to be considered in its letter dated December 22, 2009; we agree with Chairman Bannister that these alternatives should be included in the EIS.

**Conclusion**

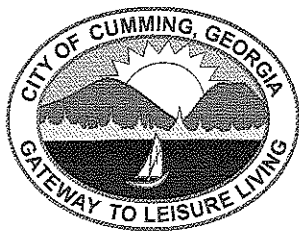
In conclusion, the Water Supply Providers have long supported the Corps’ efforts to update the water control manuals for the ACF River Basin. We support this effort because we firmly believe that any objective analysis will show that there is enough water in the ACF Basin to meet the reasonable needs of all stakeholders if the reservoirs are operated properly. Therefore, we urge you to embrace the NEPA process as an opportunity, finally, to insert facts into a discussion that for years has been dominated by misinformation and political posturing.

Sincerely,



Patricia T. Barmeyer

cc: The Honorable John Eaves, Chairman, Fulton County Commission  
The Honorable Burrell Ellis, CEO, DeKalb County  
The Honorable Myrtle Figueras, Mayor, City of Gainesville  
The Honorable Shirley Franklin, Mayor, City of Atlanta  
The Honorable Sam Olens, Chair, Cobb County Commission and Chair, Atlanta Regional Commission  
Mr. Donald C. Mabry, Chair, Cobb County-Marietta Water Authority  
Mr. Chick Krautler, Executive Director, Atlanta Regional Commission



# CITY OF CUMMING

CHARTERED 1845



MAYOR  
Henry Ford Gravitt  
COUNCIL MEMBERS  
Quincy Holton  
Lewis Ledbetter  
Ralph Perry  
John Pugh  
Rupert Sexton

CITY  
ADMINISTRATOR  
Gerald Blackburn

ASSISTANT CITY  
ADMINISTRATOR  
Steve Bennett

CITY ATTORNEY  
Dana B. Miles

CITY CLERK  
Jeffery Honea

December 15, 2009

Colonel Byron Jorns  
United States Army Corps of Engineers  
109 Saint Joseph's Street  
Mobile, Alabama 36602

Dear Colonel Jorns,

Please accept this letter as the public comment of the City of Cumming, Georgia, a Georgia Municipal Corporation, regarding the *Master Water Control Manual* update. The notice sent by Tetra Tech, Inc., was received by the City of Cumming on November 24, 2009. Accordingly, the City offers this response within and pursuant to the forty-five (45) day window for public comment.

As you are aware, the City of Cumming has the most advanced water intake facility on the entirety of Lake Sidney Lanier. Through that facility, the City of Cumming provides raw water to potable water treatment facilities in both the City of Cumming and in unincorporated Forsyth County, which in turn provide all – 100% – of the public water needs of this County of over 160,000 residents. To put it mildly, the City of Cumming's intake facility and the water it provides are absolutely essential to the health, welfare, and safety of the citizens of Cumming and Forsyth County.

Given the City of Cumming's role in providing water to so many people, it is not surprising that the City's greatest concern focuses on subsection (b) of the scope review disclosed on the notice described above. Pursuant to that subsection, in July of 2012:

*“the updated manuals will reflect that water supply withdrawals from Lake Lanier will be limited to the amounts authorized by relocation agreements with the Cities of Gainesville and Buford, Georgia. Those agreements, which were executed at the time of the*

*reservoir's construction, authorized withdrawals of 8 million gallons per day (mgd) for Gainesville and 2 mgd for Buford, a combined 10 mgd."*

According to the suggested revisions to the *Master Water Control Manual*, the above quoted withdrawals will be the only withdrawals for potable water production allowed from Lake Lanier. Put differently, in July of 2012, the United States Army Corps of Engineers proposes to essentially turn off the spigot for the City of Cumming and Forsyth County, at which time hundreds of thousands of people will find their faucets dry. Such a proposal is beyond comprehension – it is, in a word, reckless.

To understand the City of Cumming's position in this matter it will be helpful to brief you on the history of the City's public water utility. Prior to the creation of Lake Lanier, the City of Cumming had a potable water production facility located on Dobbs Creek. This filtration plant, which was in place as early as 1949, took water from Dobbs Creek, filtered it for consumption, and then distributed the water to the public through lines in the City of Cumming. Dobbs Creek flowed and continues to flow into Sawnee Creek which is a tributary to Lake Lanier. Thus, just as Gainesville and Buford received their water from Lanier tributaries, leading to their right to withdraw from the Lake, so too did the City of Cumming.

Importantly, there was no allotment or quota of water withdrawals from Dobbs Creek which governed the City's water production facilities. Instead, the issue was "how much water does the City need?" Such is what governed the amount of water withdrawn, and as time passed and the needs of the City grew, so too did the City's withdrawals. In short, the only allocation formula to determine how much water the City withdrew from Lanier tributaries was demand.

Despite the fact that the City's withdrawals were demand driven, the planning and implementation of the City of Cumming's water utility was a thorough and well managed process. As discussed previously, the City of Cumming has a raw water intake on Lake Lanier which is the most technologically advanced of any around. The intake can handle up to 105 mgd, which was chosen because it covers the allotments to the City of Cumming and Forsyth County set by the Metropolitan North Georgia Water Planning District ("MNGWPD"), being 104 mgd total. In addition to the plant, the massive and expensive infrastructure is in place to move the raw water from the lake to the City's treatment plant, and Forsyth County is in an advanced position in this regard as well. Of course, the utility infrastructure from the plant to consumers is an even larger network of distribution lines and storage facilities. The City of Cumming and Forsyth County water utilities are, in a word, massive.

As part of the expansion of the water system, the City also expanded and upgraded its waste water treatment facility. The treatment facility can now handle more waste water and treats it to a higher level than it ever has before. In fact, the water that is returned to the stream nearby the waste water treatment plant is cleaner than the water which naturally flows in the stream.

And in returning the water to a stream, the treated waste water is returned to the Chattahoochee basin, thus allowing downstream users additional water for their water production needs.

Importantly, all notices were given, permits obtained, and laws and regulations complied with in the construction of the City's state-of-the-art intake facility and in conjunction with the expansion and upgrade of the City's waste water treatment facility. This is true whether the requirements are from the U.S. Army Corps of Engineers, the Environmental Protection Agency, federal statutes, state statutes, the Georgia Environmental Protection Division, or any other regulatory entity involved in the process. From the description of the City's utility system and its evolution, two things are clear: (1) nothing about the development of the City of Cumming's utility was a rash or quick decision – everything was well thought out and planned to meet the needs of this growing area; and (2) all told, it is perfectly evident that the federal government, including the Corps of Engineers, was aware of and approved the City of Cumming's actions, including the investment of millions upon millions of dollars into what is now an infrastructure system worth in the billions of dollars. And now the City of Cumming is told, with the investment complete and the infrastructure in place to provide water to the citizens of the City of Cumming and Forsyth County, the Corps proposes to turn off the water, which would turn the billion dollar utility into a massive set of empty pipes and thirsty people.

Given all that has been discussed herein, it should come as no surprise that the City of Cumming is vehemently opposed to the revisions to the *Master Water Control Manual*, especially as disclosed in subsection (b) on the Notice received on November 24, 2009. To propose to end all withdrawals by the City of Cumming in July, 2012, thus cutting off water to hundreds of thousands of people in Forsyth County alone, is callous, reckless, and is a threat to human life and safety. Moreover, given that the Corps and federal government permitted and allowed the City of Cumming's expansions and investments to occur, the Corps should be estopped from now taking that expansion and investment away by turning off the water. Finally, considering that the Corps' proposal would take a billion dollar asset and make it worthless, turning off the water, if carried out, would be the epitome of a taking without just and adequate compensation. To be blunt, when Lake Lanier was built the federal government compensated people so little – \$6.00 and \$7.00 an acre in some cases – that many people accused the government of stealing the land. Now, it appears that the government will do so again by rendering over fifty years of planning, investment, acquisition, and building worthless.

For the reasons set forth in this letter, it is with the utmost sincerity that the City of Cumming asks the U.S. Army Corps of Engineers to reconsider the proposed revisions to the *Master Water Control Manual*, and especially to reconsider subsection (b) of the proposed revisions. While Judge Paul Magnuson may have issued an order in the *Tri-States Water Rights*

*Litigation*,<sup>1</sup> that does not mean that the Corps of Engineers should rush out and amend its manual when two and a half years still remain for the parties to resolve their differences, or for Congress to resolve the situation for them.

I thank you for your time and attention to this matter. If you would like to discuss this issue or any other with me, please do not hesitate to call me at (770) 781-2010.

Sincerely



H. Ford Gravitt  
Mayor

CC: Senator Saxby Chambliss  
Senator Johnny Isakson  
Congressman Nathan Deal  
Governor Sonny Perdue  
Lt. Governor Casey Cagle  
Senator Jack Murphy  
Representative Mark Hamilton  
Mr. Allen Barnes, Director, Georgia DNR-EPD  
Honorable Charlie Laughinghouse, Forsyth County BOC  
Ms. Kit Dunlap, Chairman, MNGWPD  
Mr. Douglas Otto, Division Chief, USACE

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<sup>1</sup> The City of Cumming is not a party to the case in which Judge Magnuson issued his *Order*.



## Florida Department of Environmental Protection

Marjory Stoneman Douglas Building  
3900 Commonwealth Boulevard  
Tallahassee, Florida 32399-3000

Charlie Crist  
Governor

Jeff Kottkamp  
Lt. Governor

Michael W. Sole  
Secretary

January 4, 2010

Brian Zettle, Environment and Resources Branch  
Planning and Environmental Division  
U.S. Army Corps of Engineers, Mobile District  
Post Office Box 2288  
Mobile, AL 36628-0001

RE: Revision of Scope of Environmental Impact Statement for Updated Water Control  
Manual for the Apalachicola-Chattahoochee-Flint River Basin

Dear Mr. Zettle:

The State of Florida ("Florida") submits these comments to the U.S. Army Corps of Engineers ("Corps") pursuant to the Corps' Notice of Intent ("NOI") to revise the scope of the Environmental Impact Statement ("EIS") for the revision of the water control manual and plans (collectively "WCM") for the Apalachicola-Chattahoochee-Flint ("ACF") River Basin.<sup>1</sup>

The NOI indicates that the Corps intends to revise the scope of its EIS review of the WCM revision to account for the July 17, 2009 decision by the United States District Court for the Middle District of Florida in Phase 1 of the *In re Tri-State Water Rights Litigation*, Case No. 3:07-md-01.<sup>2</sup> As a preliminary matter, the following comments address issues appropriate for the scoping stage of the EIS process—namely, a range of alternatives and impacts to be considered—and are not intended to exclusively address the definition or elements of the proposed action—the new WCM—which the Corps must develop consistent with federal law, including the public participation requirements of the Water Resources Development Act ("WRDA") and the Corps' own regulations. Florida reserves the right to further comment on the development and content of the new WCM once properly proposed.

Accordingly, the following comments focus on the scope and elements of the Corps' EIS review for the WCM updates and revisions, including the calculation of an updated critical yield for each reservoir in the ACF Basin and a broad review of alternatives and impacts of the

<sup>1</sup> See 74 Fed. Reg. 59,965 (2009). On November 20, 2008, Florida submitted comments on the previous NOI to prepare an EIS for the WCM. See 73 Fed. Reg. 9,780 (2008). Pursuant to the Corps' assurance in its 2009 NOI, Florida expects that its previously submitted 2008 comments "will be reviewed and addressed in any scoping revisions." 74 Fed. Reg. at 59,965. Florida also reserves the right to submit additional comments throughout the EIS process for the WCM update.

<sup>2</sup> See 639 F. Supp. 2d 1308 (M.D. Fla., 2009) ("Phase 1 Order").

Mr. Brian Zettle

January 4, 2010

Page 2 of 11

proposed action. In particular, Florida encourages the Corps to carefully evaluate the impact of the Corps' operation of its ACF reservoirs on the citizens, ecology and economy of Florida, especially on the unique and extraordinary Apalachicola River and Bay.

## I. Scope of the Corps' EIS Review

Florida agrees with the Corps that the WCM for the ACF Basin and the water control plans for each of the five federal reservoirs on the Chattahoochee River must be consistent with the Court's legal rulings in the Phase 1 Order. The Corps' operation of the ACF reservoirs significantly affects the citizens and environment of Florida. And, Florida has always maintained that the Corps must review and revise its operations and WCM to be consistent with federal law, including the National Environmental Policy Act ("NEPA"), the Water Supply Act of 1958 ("WSA"), the Flood Control Act ("FCA"), the Endangered Species Act ("ESA") and the Coastal Zone Management Act ("CZMA"). Irrespective of the Phase 1 Order, NEPA has always required a broad review of alternatives, impacts and mitigation measures.

More so than the scope of the EIS, however, the Phase 1 Order will affect the *content* of the new WCM. The new WCM must be developed in close coordination with interested stakeholders, the affected public and the three States (Alabama, Georgia and Florida) consistent with the public participation requirements of WRDA, and the Corps' implementing regulations, which require effective public involvement,<sup>3</sup> coordination with affected States, regional and local agencies,<sup>4</sup> and provision of information to the public.<sup>5</sup> The current NEPA scoping process—which is limited to the scope of the Corps' EIS—does not satisfy these public participation requirements, and Florida fully expects that the Corps will provide early and sufficient opportunity for public participation in the actual development, revision and content of the WCM for the ACF Basin. Additionally, effective scoping requires a more detailed proposal from the Corps. The Corps will need to allow for additional NEPA review and comment on the "proposed action"—*i.e.*, the content of the WCM—once it is more adequately and properly defined.

## II. Elements of the EIS

The EIS for the WCM revision should include an accurate and updated critical yield based on the *actual* drought of record; should utilize an appropriate and agreed-upon modeling approach; should analyze a full range of alternatives; and should carefully consider associated impacts and mitigation measures, as well as appropriate state and federal environmental laws.

<sup>3</sup> See 33 U.S.C. § 2319; *see also* 33 C.F.R. § 222.5(g)(2)(i)(A).

<sup>4</sup> See 33 C.F.R. § 222.5(f)(9).

<sup>5</sup> See 33 U.S.C. § 2319; *see also* 33 C.F.R. § 222.5(g)(2)(i)(C) (requiring the Corps to provide certain information to the public concerning proposed water control management decisions, including description of impacts and comparisons of alternative plans, at least 30 days in advance of a public meeting).

Mr. Brian Zettle  
January 4, 2010  
Page 3 of 11

## A. Critical Yield

An important element of the WCM revision, and its NEPA review, is an accurate critical yield for the ACF Basin and each of the Corps' reservoirs. Currently, the Corps is in the process of analyzing and updating the critical yield for the ACF Basin and must complete this analysis by the end of February 2010, as mandated by Congress in the FY 2010 Senate Energy & Water Development Appropriations Bill.<sup>6</sup> The Corps should re-open the scoping process or otherwise seek public comment before finalizing its new critical yield analysis.

An accurate critical yield is an essential component to the water control manuals and plans for federal reservoirs. The Corps cannot develop a new WCM for nor balance the Congressionally authorized purposes of its reservoirs without an accurate determination of critical yield based on the most severe drought of record. Before finalizing the updated critical yield, the Corps should release its draft critical yield analysis for the ACF Basin, transparently describe the critical yield formula, the underlying data, and its corresponding methodologies and assumptions,<sup>7</sup> and afford opportunity for public review and comment, either as part of the NEPA scoping process or to satisfy the public participation requirements of the WCM update process, or both.

The Corps' critical yield analysis, as well as its EIS for the WCM revision, also should affirmatively acknowledge that the entire conservation pool (from 1035 to 1070 msl) at Lake Lanier is available to meet hydropower and other downstream demands. The Corps historically has operated Lake Lanier as if the conservation pool exists only between elevation 1050 and 1070 msl. This practice has eliminated a significant block of storage that can be used to augment downstream flows necessary to comply with the ESA, among other laws.

## B. Modeling

Modeling is a crucial component of both the NEPA review process and the development of a new WCM. The 2009 Final Scoping Report indicated the Corps' intent to evaluate revisions to the WCM using the ResSim model. Previous analyses, such as the 1998 draft EIS on the ACF

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<sup>6</sup> Energy and Water Development and Related Agencies Appropriations Act, 2010, S. 1436, 111th Cong. (2009).

<sup>7</sup> The Corps' critical yield analysis utilizes the data set referred to as the "unimpaired flows." The unimpaired flows is a synthetic (computed) data set in which the anthropogenic impacts are removed from the flow record. Therefore, the results of the critical yield analysis will be a direct function of the accuracy of the unimpaired flows. This is especially the case with Lake Lanier where the impacts of large withdrawals, evaporative losses from the reservoir pool and over 40 years of highly discretionary, and at times erratic, reservoir operations must be removed from the flow record. The Corps must ensure that the unimpaired flows reflect the actual withdrawals from Lake Lanier, lake evaporation and operational decisions. This is especially important for the period from 1980 through the end of 2009, during which the three most severe droughts occurred in the upper basin, withdrawals from Lake Lanier increased rapidly, and operation of the reservoir became more complicated. Further, the Corps should make available the data used to compute the unimpaired flows. This should include the demands, evaporative losses and the manner in which the flows were modified to account for operations. This information should be provided to the States' technical staff for review prior to release of the critical yield analysis.

Mr. Brian Zettle  
January 4, 2010  
Page 4 of 11

Compact, have utilized the HEC-5 model and the technical staff of each of the three States are familiar with the HEC-5 model. Development and utilization of a new model, such as ResSim, should only occur with input and approval from all three States. The Corps should afford the States' technical staff adequate and sufficient opportunity to review, become acquainted with, comment on, and endorse the assumptions underlying a new model.

### C. Review of Alternatives

NEPA requires the Corps to "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources."<sup>8</sup> The evaluation of alternatives is "the heart of the environmental impact statement."<sup>9</sup> The Corps must "rigorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated."<sup>10</sup>

1. *Alternative Plans and/or Action Zones.* The Corps should review and consider a full range of alternatives to the WCM, including alternative operating plans and/or action zones that differ from the "existing" operations, as provided by the 1989 draft WCP, the sportfish SOP, and the current interim operating plans. Although the current NOI indicates the Corps' intent to revise the WCMs to account for the Court's decisions regarding operation of Buford Dam for water supply, it also implies that "all other aspects" of the WCM, as described in the 2008 NOI, will remain the same.<sup>11</sup> A failure to fully analyze, review and reconsider all elements of the WCM would be inconsistent with the Court's decision in the Phase 1 Order. In particular, the Corps should review alternatives to maintaining reservoir levels for recreation and/or sportfish management, especially during seasons that are critical for species and habitat downstream. In considering alternative plans, the Corps must assume the entire conservation storage pools of the ACF reservoirs are available, and then, in practice, must ensure the full pools are available for Congressionally authorized purposes.

2. *Recovery-Based Alternative.* ESA § 7 directs Federal agencies to use their authorities to further the purposes of the Act by conducting conservation programs for the benefit of endangered and threatened species. The U.S. Fish and Wildlife Service ("FWS") has developed recovery plans for the listed species in the Apalachicola River—the Gulf sturgeon and two freshwater mussel species—pursuant to ESA § 4.<sup>12</sup> As part of its EIS review, the Corps should evaluate all available means to maximize the likelihood these species will recover to the

<sup>8</sup> 42 U.S.C. § 4332(2)(E).

<sup>9</sup> 40 C.F.R. § 1502.14.

<sup>10</sup> 40 C.F.R. § 1502.14(a).

<sup>11</sup> 74 Fed. Reg. at 59,967.

<sup>12</sup> See FWS, Gulf Sturgeon Recovery/Management Plan (1995), available at [http://www.nmfs.noaa.gov/pr/pdfs/recovery/sturgeon\\_gulf.pdf](http://www.nmfs.noaa.gov/pr/pdfs/recovery/sturgeon_gulf.pdf); FWS, Recovery Plan for Endangered Fat Threeridge, Shinyrayed Pocketbook, Gulf Moccasinshell, Ochlockonee Moccasinshell, Oval Pigtoe and Threatened Chipola Slabshell, and Purple Bankclimber (2003), available at [http://ecos.fws.gov/docs/recovery\\_plan/030930.pdf](http://ecos.fws.gov/docs/recovery_plan/030930.pdf).

Mr. Brian Zettle  
January 4, 2010  
Page 5 of 11

point of de-listing by implementing recommendations in the recovery plans. Benefits occasioned by implementation of these plans will have widespread benefits throughout the Apalachicola River Basin.

3. *Water Supply and Conservation Alternatives.* In evaluating the impacts on the human environment of a WCM that complies with the Phase 1 Order, the Corps must also include cumulative impacts from other water supply options that the State of Georgia will inevitably develop. In evaluating these impacts, as described in more detail below, the Corps should include careful consideration of alternatives to development of new water supply sources, including water conservation measures, wastewater reuse and recycling, and other water supply alternatives such as inter-basin transfers to the ACF Basin and desalination.<sup>13</sup> The State of Georgia's Water Contingency Planning Task Force has already identified these and more alternatives to additional water supply sources in the ACF Basin, though it rejected many.

#### D. Review of Impacts

An EIS must include a discussion of "the environmental impacts of the alternatives including the proposed action, [and] any adverse environmental effects which cannot be avoided should the proposal be implemented."<sup>14</sup> The relevant impacts to be reviewed include direct, indirect and cumulative impacts. At a minimum, the Corps should evaluate the impacts described below to the Apalachicola River and Bay.

1. *Careful Consideration of the Apalachicola River and Bay Ecosystems.* The Apalachicola River and its floodplain ecosystem are unique, extensive and diverse. The non-tidal portion of the floodplain flanking the River supports a complex forest/swamp ecosystem covering more than 80,000 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% of all 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.

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 280-square-mile Bay provides 90% of Florida's rich oyster harvest (10% of the national harvest), supports an

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<sup>13</sup> Florida, and several states, are increasingly using desalination as the source of future municipal supplies, and the Corps should evaluate Georgia's potential to utilize this option as well. Desalination of water in coastal areas could be a means of facilitating inter-basin transfers of water to Atlanta. Such alternatives should not be assessed on economics alone, given the severe environmental and economic costs of developing water supplies from the ACF Basin.

<sup>14</sup> 40 C.F.R. § 1502.16.

Mr. Brian Zettle  
January 4, 2010  
Page 6 of 11

active finfish industry, and serves as an important nursery area for many marine species.<sup>15</sup> The Bay also is home to the Apalachicola National Estuarine Research Reserve, one of only 27 sites so designated by the National Oceanographic and Atmospheric Administration as a research reserve, and which encompasses approximately 247,185 acres of land and water.<sup>16</sup>

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. 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, historical 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 for generations on economies based on Bay fishing.

Finally, the Apalachicola River and Bay – and indeed, the entire State of Florida – are protected by the enforceable policies of the federally approved Florida Coastal Management Program (“FCMP”).<sup>17</sup> Therefore, pursuant to the CZMA, the Corps’ actions which affect the Apalachicola River and Bay must be consistent to the maximum extent practicable with the FCMP.<sup>18</sup> The FCMP includes enforceable policies of 24 Florida statutes administered by nine State agencies and five water management districts designed to ensure the wise use and protection of the State’s water, property, cultural, historic, and biological resources; to protect public health; to minimize the State’s vulnerability to coastal hazards; to ensure orderly, managed growth; to protect the State’s transportation system; and to sustain a vital economy.<sup>19</sup>

<sup>15</sup> Florida Department of Environmental Protection, Division of Water Resource Management, Water Quality Assessment Report Apalachicola-Chipola 31, 60, 62 (2005), available at <http://tlhdwf2.dep.state.fl.us/basin411/apalach/assessment/Apalach-LORES.pdf>.

<sup>16</sup> *Id.* at 41; see also National Estuarine Research Reserve System, <http://www.nerrs.noaa.gov>.

<sup>17</sup> See 46 Fed. Reg. 48,742 (1981) (initial approval of the FCMP); 53 Fed. Reg. 50,069 (1988) (approval of FCMP amendments).

<sup>18</sup> See 16 U.S.C. § 1456(c)(1)(A).

<sup>19</sup> Enforceable policies of the FCMP which the Corps should consider include, but are not limited to, the following statutes: Fla. Stat. §§ 373.016, 373.019(5), 373.171, 373.223, 373.233, 373.239(3) (regulating consumptive uses of water) (implemented by Fla. Admin. Code R. 62-40.410, 40A-2.301, 40A-2.311, 40A-2.381); Fla. Stat. §§ 373.413, 373.414, 373.416 (regulating water storage and management of reservoirs) (implemented by Fla. Admin. Code R. 40A-4.011, 40A-4.301); Fla. Stat. §§ 373.430(1)(a), 403.021, 403.031(7), 403.061, 403.161 (prohibiting pollution, which is broadly defined as any human-induced impairment of water); Fla. Stat. §§ 258.36, 258.37, 258.39 (protecting Apalachicola Bay as an aquatic preserve); Fla. Stat. §§ 253.034, 259.032 (protecting submerged lands and lands purchased for conservation) (implemented by Fla. Admin. Code R. 62-302.700 (protecting Outstanding Florida Waters, including Apalachicola River

Mr. Brian Zettle  
January 4, 2010  
Page 7 of 11

As part of its NEPA analysis, the Corps must recognize the significance of the Apalachicola River and Bay ecosystems and the special protections afforded these ecosystems by the State of Florida. In addition, the Corps must evaluate the direct, indirect and cumulative impacts to the Apalachicola River and Bay ecosystems, including those listed below.

2. *Evaluation of Present Circumstances in the ACF Basin.* The 2009 NOI indicates that, to satisfy its NEPA obligations, “the Corps will evaluate present circumstances as part of its EIS, while acknowledging that it currently lacks authority to continue to accommodate present levels of water supply at Lake Lanier beyond July 17, 2012.”<sup>20</sup> Although the exact meaning of this statement is unclear, it appears that the Corps will include existing conditions in its EIS analysis and implies a comparison of existing operations (*i.e.*, with water supply) with post-2012 operations (*i.e.*, without water supply). Such an analysis would be inconsistent with the Phase 1 Order. An analysis that compares proposed WCM revisions to anything other than a baseline that does *not* include water supply withdrawals and releases from Lake Lanier would be inappropriate, unlawful and in direct contravention of the Phase 1 Order.

If the Corps does analyze existing operations, then the Corps also must evaluate the impacts of flow alterations that have resulted from the reallocation of storage to water supply through the Corps’ incremental changes in reservoir operations that have occurred since the 1970s and have never been reviewed under NEPA. Adverse impacts of reduced flows on the Apalachicola River and Bay are well documented. The Corps’ unlawful operation of Lake Lanier and Buford Dam for water supply has altered the timing and flows in the ACF Basin, resulting in the dewatering of habitat for important species in Florida’s coastal zone, including federally listed species, and harming the ecosystems of the Apalachicola River and Bay. The Court in the *Tri-State Water Rights Litigation* also has held that operations for water supply and the consumptive use of water in the ACF Basin have caused Florida harm. See Phase 1 Order at 1341 (“[L]ow flows in the Apalachicola River are at least to some extent caused by the Corps’ operations in the ACF basin and consumptive uses of the water in the basin, and those low flows cause harm to the creatures that call the Apalachicola home.”).

3. *Impacts of Increasing Water Supply Demands.* The Corps should evaluate its revision of the WCM in conjunction with proposed new sources for water supply or diversion, such as increases in storage pools of existing federal reservoirs or new reservoirs that are being planned for the ACF Basin. For example, to meet projected increases in water supply demands, the North Georgia Metropolitan Water District (“Metro Water District”) recently identified 6 planned reservoirs and 2 storage (no additional yield) reservoirs projected to be constructed by 2035 in the Metro Water District, and 17 potential new reservoirs and water sources for development post-2035.<sup>21</sup> For one of the planned reservoirs, the Glades Reservoir, the Corps Savannah District is currently considering an application for a Clean Water Act § 404 permit,

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and Bay)); Fla. Stat. § 379.2401 (formerly § 370.025) (protecting marine fisheries); and Fla. Stat. § 379.2291 (formerly § 372.072) and Fla. Stat. § 379.411 (formerly § 372.0725) (protecting species which are endangered, threatened, or of special concern) (implemented by Fla. Admin. Code Rule 68A-1.004(31), (82), (86)).

<sup>20</sup> 74 Fed. Reg. at 59,967.

<sup>21</sup> See North Georgia Water Supply and Water Conservation Management Plan at 6-1 to 6-21 (May 2009).

Mr. Brian Zettle  
January 4, 2010  
Page 8 of 11

though no programmatic EIS for these and other proposed reservoirs is planned.<sup>22</sup> The cumulative impacts of the proposed reservoirs, and any additional water supply sources or diversions necessitated by the Phase 1 Order, must be evaluated by the Corps as part of the WCM EIS process.

The Corps also should evaluate the impacts of growth induced by providing new sources of water supply in the ACF Basin.<sup>23</sup> NEPA requires that all secondary/indirect impacts of this population growth also must be assessed.<sup>24</sup> For example, water quality impacts from additional wastewater discharges should be evaluated, and the Corps should assess all of the potential impacts caused by its facilitation of any population increase—e.g., impacts from pharmaceuticals and other substances for which wastewater treatment is not available. These contaminants are a suspected cause of reproductive anomalies and failures in fish and other wildlife species.<sup>25</sup>

4. *Specific Impacts to Be Evaluated.* In addition to the impacts to flows and generalized impacts described above, the Corps should evaluate for each alternative the following specific types of impacts at a minimum:

a. *Specific Apalachicola River Impacts.*

- Effects of altered flow on all hydrologically-connected wetlands in the reservoirs, tributaries entering the reservoirs, and riverine floodplain and wetlands of the Apalachicola River (e.g., changes in vegetation type and acreage, inundation depth and duration, and backwater effects on the tributary wetlands).
- Changes in Apalachicola River channel morphology due to altered flows, including bank erosion.
- Loss of unique and biologically important aquatic habitats and spawning grounds (e.g., rock shelves, natural bank root systems, and woody debris) in the Apalachicola River during critical life history stages for fish and wildlife.

<sup>22</sup> See Department of the Army, Savannah District Corps of Engineers & State of Georgia, Joint Public Notice, Application No. 200700388 (July 8, 2009).

<sup>23</sup> See, e.g., *Sierra Club v. Marsh*, 769 F.2d 868, 877-82 (1st Cir. 1985); *City of Davis v. Coleman*, 521 F.2d 661, 675-76 (9th Cir. 1975); *Friends of the Earth v. U.S.A.C.O.E.*, 109 F. Supp. 2d 30, 40-41 (D.D.C. 2000).

<sup>24</sup> See 40 C.F.R. § 1502.16(b) (requiring evaluation of “indirect effects”); § 1508.8 (defining “indirect effects” to include “growth inducing effects” and effects related to induced changes in population density or growth rate).

<sup>25</sup> See, e.g., A.S. Pait & J.O. Nelson, *Endocrine Disruption in Fish: An Assessment of Recent Research and Results* (NOAA Technical Memorandum #NOS NCCOS CCMA 149) (2002); C. R. Tyler, S. Jobling, & J. P. Sumpter, *Endocrine Disruption in Wildlife: A Critical Review of the Evidence*, CRITICAL REVIEWS IN TOXICOLOGY, 28(4):319-361 (1998).

Mr. Brian Zettle  
January 4, 2010  
Page 9 of 11

- Fisheries impacts in Apalachicola River and effects of decreased connectivity to floodplain/sloughs, including, but not limited to, impacts on listed Sturgeon and mussels.
- Water quality changes in floodplain habitats/sloughs from increased disconnection.
- Effects of decreased flow on Gulf striped bass and Sturgeon thermal refugia in Apalachicola River.
- Vegetation changes in the Apalachicola River floodplain, including impact to freshwater aquatic vegetation and fisheries near Apalachicola River delta and Bay during low flows.
- Effects of increase in grass carp stocking and escapement from upstream reservoirs on lower River submerged aquatic vegetation and Bay sea grasses during high flows and low salinities.
- Disruption in natural food web if flows are reduced significantly (*i.e.*, crayfish, mussel, macroinvertebrate populations in river and floodplain).

*b. Specific Apalachicola Bay Impacts.*

- Changes to freshwater inflow, including quantity, timing and quality.
- Changes to physical structure of estuary, including increased tidal influence with inflow reduction.
- Changes to transport of material to estuary.
- Effects on Apalachicola Bay salinity and nutrient composition and corresponding economic impact to seafood industry.
- Impacts on endangered species such as sturgeon in the River delta and Bay (critical habitat and food supply).
- Potential increase in invasive species in Bay (and River) due to their ability to respond quickly to changes.

*c. Cumulative Impacts.* For purposes of cumulative impact analysis, the Corps should include, at a minimum, the following reasonably foreseeable actions:

- All depletions of water within the entire ACF Basin, including metro-Atlanta uses, irrigation in the Flint River Basin, and reservoir evaporation. At a minimum, all grandfathered and permitted acreage should be included. Further, the analysis must reflect the best available information

Mr. Brian Zettle  
January 4, 2010  
Page 10 of 11

on the effects of ground water pumping on streamflows, which at a minimum equal and probably exceed those quantified by the USGS ground water model for southwest Georgia.

- Depletions of water from growth in the metro-Atlanta region, as well as other cumulative impacts from population growth within the region.
- All modifications to seasonal timing or altered timing of flows caused by reservoir operations, including federal and non-federal reservoirs. Special attention should be paid to Corps policies to hold reservoirs high, operational changes that redistribute and/or store water previously released for navigation support and the effects of thousands of small reservoirs (current and future) in the ACF Basin. In particular, the Corps continues to permit new reservoir construction without any comprehensive review of impacts or a programmatic EIS.
- All point source and large-scale non-point source discharges of pollutants.
- Effects of flow alterations and continued loss of aquatic habitats in the main channel and floodplain on fish and wildlife populations that are dependent upon main channel habitats and connectivity to the main channel for extended spawning and nursery periods, including sturgeon and mussels.
- Implementation of drought management plans with reasonable triggers to declare drought conditions.
- The occurrence of more severe and/or extended droughts in the future.

#### **E. Consideration of Mitigation**

NEPA requires the Corps to evaluate “means to mitigate adverse environmental impacts.”<sup>26</sup> The Corps has not yet defined or presented potential alternatives to the proposed action—the new WCM—or provided data on impacts. Thus, it is impossible to articulate specific mitigation measures without knowing what impacts and alternatives will be involved. Nevertheless, as part of its NEPA review, the Corps should consider additional system-wide mitigation with regard to water quantity and flows in the ACF Basin.

Previously, the Corps has recognized its broad obligation to analyze potential mitigation actions to address direct, indirect and cumulative impacts, including not only actions to be taken by the Corps, but also actions that could be taken by local, regional, or state governments or by private entities. In the 1998 Compact DEIS, the Corps specified that mitigation of impacts on water quantity was “an inherent part of [a] State’s responsibility,” and that “[m]itigation to meet remaining water demands could include alternative sources of water supply, alternative

<sup>26</sup> 40 C.F.R. § 1502.16(h).

Mr. Brian Zettle  
January 4, 2010  
Page 11 of 11

conservation methods, and public programs to encourage wise use of water resources."<sup>27</sup> As acknowledged by the Georgia Water Contingency Planning Task Force, the State of Georgia can, and should, do more to avoid the construction of new water supply sources, including imposing strong, mandatory water conservation measures, and increasing wastewater recycling and reuse. The Corps should analyze increased wastewater recycling and reuse, coupled with wastewater treatment and water conservation measures, as an alternative and as a means to mitigate any impacts associated with the Corps' proposed action and cumulative impacts of new sources of water supply in the ACF Basin.

\* \* \*

As described above, Florida agrees with the Corps' revision of the WCM to be consistent with the Court's Phase 1 Order. Florida encourages the Corps to carefully evaluate a full range of alternatives and associated impacts of the Corps' operation of its ACF reservoirs on the citizens, ecology and economy of Florida, especially on the extraordinary Apalachicola River and Bay. In addition, Florida looks forward to the opportunity to review and comment on the development of the revised WCM, the Corps' updated critical yield analysis and the new model for the ACF Basin.

Sincerely,



Thomas M. Beason  
General Counsel

cc: Tetra Tech, Inc.

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<sup>27</sup> See U.S. Army Corps of Engineers, *Water Allocation for the Apalachicola-Chattahoochee-Flint (ACF) River Basin; Alabama, Florida, and Georgia; Draft Environmental Impact Statement (1998 Compact DEIS)* at 4-267 (Sept. 1998).

**Georgia Department of Natural Resources**

2 Martin Luther King Jr., Drive, Suite 1152 East Tower, Atlanta, Georgia 30334

Chris Clark, Commissioner

F. Allen Barnes., Director

Environmental Protection Division

(404) 656-4713

December 31, 2009

**BY ELECTRONIC MAIL AND U.S. MAIL**

Tetra Tech, Inc.  
Attn: ACF WCM Comments  
107 Saint Francis Street, Suite 1403  
Mobile, AL 36602-9986

Re: Notice of Intent to Revise Scope of Draft  
Environmental Impact Statement for Updating  
the Water Control Manuals for the  
Apalachicola-Chattahoochee-Flint River Basin  
**Comments of the State of Georgia**

Dear Sir or Madam:

In response to the Federal Register Notice of November 19, 2009 (74 Fed. Reg. 59,965), the State of Georgia submits these comments on the U.S. Army Corps of Engineers' (the "Corps") proposed revisions to the scope of the Draft Environmental Impact Statement ("EIS") for the Corps' update of the water control plans and manuals (collectively, "WCM") for the Apalachicola-Chattahoochee-Flint ("ACF") River Basin.

**I. Prior Scoping Comments and Basis for Additional Comments**

The Corps invited comments on the scope of the EIS for the WCM update on September 19, 2008. In a letter dated November 21, 2008, the State of Georgia provided the Corps with comments (the "2008 Comment Letter"). In the 2008 Comment Letter, Georgia comments that neither the Interim Operations Plan nor any revision of it should be the presumptive mode of operations going forward. Georgia also comments that the Corps should not limit its consideration to only those alternatives that the Corps believes are entirely within its current authority. Georgia presents in the 2008 Comment Letter several alternatives that the Corps should consider in evaluating its potential future operations, including reallocation of storage for water supply, rule curve changes, other methods of managing its reservoirs, and non-operational alternatives to repair or mitigate problems created by channel degradation and other problems downstream. The 2008 Comment Letter also addresses a number of discrepancies between the assumptions made in the Corps' HEC-ResSim and HEC-5 modeling platforms. The points that Georgia raises in the 2008 Comment Letter remain applicable.

U.S. Army Corps of Engineers, Mobile District  
Comments on Revised Scoping of EIS for WCM Update  
December 31, 2009  
Page 2

On November 19, 2009, the Corps published notice of its intent to revise the scope of the EIS for the WCM update in response to the July 17, 2009 ruling of the United States District Court in *In re Tri State Water Rights Litigation*, Civil Action No. 3:07-md-1 (M.D.Fla.). In the July 17, 2009 ruling, the court held that water supply is not an authorized purpose of Lake Lanier and that the Corps' current operations at Lake Lanier to support water supply exceed the Corps' authority under the Water Supply Act of 1958. The July 17, 2009 ruling did not address the issue of whether the Corps should include water supply operations within one or more of the alternatives to be studied in the EIS for the WCM update.

In response to July 17, 2009 ruling, the Corps has stated that it will revise the scope of the EIS for the WCM update. Specifically, the Corps stated that, in preparing the new WCM, it "will consider only operations that are within existing authority." The Corps also stated that, at least absent further congressional authorization, it "will not continue to accommodate the present level of [water supply] withdrawals beyond July 2012, nor will the Corps consider a reallocation of storage for water supply as part of the process for updating the ACF water control plans and manuals." Finally, the Corps indicated that, with the exception of water supply operations, it will evaluate only "present circumstances as part of its EIS."

The Corps' November 19, 2009 Notice states, "Any comments previously submitted will be reviewed and addressed in any scoping revisions. There is no need to resubmit comments previously provided during the 2008 scoping effort unless in your opinion the [July 17, 2009 ruling] necessitates additional comments from you." Accordingly, Georgia will not repeat the comments that it previously provided in the 2008 Comment Letter and trusts that the Corps will give those prior comments due consideration.

These additional comments of the State of Georgia are not necessitated by the July 17, 2009 ruling itself but by the Corps' alteration of the scope of the EIS in response to the July 17, 2009 ruling. As set forth in greater detail below, the revised scope is neither a necessary nor appropriate reaction to the July 17, 2009 ruling. Moreover, the revised scope violates the letter and spirit of NEPA and is contrary to the public interest and common sense.

U.S. Army Corps of Engineers, Mobile District  
Comments on Revised Scoping of EIS for WCM Update  
December 31, 2009  
Page 3

## **II. Comments on Proposed Revisions to Scope**

### **A. The Corps Must Consider Alternatives Beyond its Current Authority**

Georgia has appealed the holding in the July 17, 2009 ruling.<sup>1</sup> Even if the July 17, 2009 ruling is affirmed on appeal, however, the Corps can and should study as alternatives reservoir operations that allocate storage to meet existing and future municipal and industrial water supply needs.

It is Georgia's understanding that, prior to the July 17, 2009 ruling, the Corps intended to use as the "no action" alternative reservoir operations that included storage to meet at least current if not also future water supply needs. Given the many decades during which the Corps has utilized Lake Lanier to accommodate water supply needs, it would be reasonable for the Corps to include water supply operations within the no action alternative.<sup>2</sup> Putting aside the question of whether water supply operations should be included within the no action alternative or instead should be analyzed within

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<sup>1</sup> Georgia will maintain in its appeal of the July 17, 2009 ruling that the Corps has the authority, without a further act of Congress, to operate Lake Lanier to meet Georgia's current and future municipal and industrial water supply needs. Nothing herein should be interpreted as a waiver of Georgia's legal position.

<sup>2</sup> Under appropriate circumstances, the continuation of present operations can serve as a proper "no action" alternative. See *American Rivers v. Federal Energy Regulatory Commission*, 201 F.3d 1186, 1199 (9th Cir. 2000). In addition, as discussed in guidance issued by the Council on Environmental Quality:

Accordingly, the regulations require the analysis of the no action alternative even if the agency is under a court order or legislative command to act. This analysis provides a benchmark, enabling decisionmakers to compare the magnitude of environmental effects of the action alternatives. It is also an example of a reasonable alternative outside the jurisdiction of the agency which must be analyzed.

Council on Environmental Quality, "Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations," Question 3, 46 Fed. Reg. 18026, 18027 (1981).

U.S. Army Corps of Engineers, Mobile District  
 Comments on Revised Scoping of EIS for WCM Update  
 December 31, 2009  
 Page 4

one or more of the reasonable alternatives to the no action alternative,<sup>3</sup> however, water supply operations clearly must be considered and compared against the effects of any alternative that does not include water supply.

NEPA requires the Corps to consider reasonable alternatives for operating the reservoirs to meet the needs of stakeholders. The Corps' consideration of alternatives must even include alternatives, such as operations for water supply, that may be deemed to exceed the scope of the agency's jurisdiction. See 40 C.F.R. § 1502.14(c)(stating that alternatives analysis shall include "reasonable alternatives not within the jurisdiction of the lead agency"). Such analysis is useful not only to the Corps but also the Congress and the President, to the extent that further legislation may be needed. See *Natural Res. Defense Council, Inc. v. Morton*, 458 F.2d 827, 836-37 (D.C. Cir. 1972). As the D.C. Circuit held in *Morton*:

The mere fact that an alternative requires legislative implementation does not automatically establish it as beyond the domain of what is required for discussion, particularly since NEPA was intended to provide a consideration and basis for choice by the decisionmakers in the legislative as well as the executive branch.

*Id.*

For decades, the Corps has recognized that Lake Lanier should be operated for water supply. Nothing in the Corps' November 19, 2009 Notice suggests that the Corps has altered that view. Instead, the Notice suggests that the Corps is altering the scope of the EIS merely in reaction to the July 17, 2009 ruling. Since the NEPA regulations instruct the Corps to consider alternatives that are beyond its authority, a federal district court ruling that the Corps lacks authority to operate Lake Lanier for water supply should not alter the scope of the EIS.

Moreover, nothing in the July 17, 2009 ruling suggests that the Corps should not consider water supply operations as an alternative in its NEPA analysis for the WCM update. To the contrary, the court tailored its remedy in a manner to allow, and even encourage, the parties to go to Congress to obtain further authorization for water supply. If the Court of Appeals reverses the July 17, 2009 ruling, there should be no legal impediment to the Corps' continuing to operate for water supply. If the July 17,

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<sup>3</sup> The three types of alternatives for the Corps to consider in the scoping process "include: (1) No action alternative. (2) Other reasonable courses of actions. (3) Mitigation measures (not in the proposed action)." 40 C.F.R. § 1528.25(b)(2008).

U.S. Army Corps of Engineers, Mobile District  
Comments on Revised Scoping of EIS for WCM Update  
December 31, 2009  
Page 5

2009 ruling instead is upheld on appeal, Congress and the President will have no choice but to take up the question of whether or not Lake Lanier will continue to meet the water supply needs of millions of Georgians, and it would benefit Congress, the President, the Corps, and the public for the study of future alternatives to consider the effects on the human environment of operating Lake Lanier for water supply in comparison to not doing so. Thus, under either scenario, it only makes sense for the Corps to study alternatives that would involve the Corps operating to satisfy present and future water supply needs.

### **B. The Corps Must Consider the Impact on the Human Environment of Water Supply Alternatives to Lake Lanier**

If the Corps intends to include within the scope of the EIS for the WCM a scenario in which Lake Lanier would not be used meet water supply needs, then it must fully consider the effects on the human environment of operating Lake Lanier in that manner. That would include consideration of the effects of the alternative means by which the approximately three million people that previously relied upon Lake Lanier as their sole source of water supply would then be supplied with water.

The EIS must consider the cumulative impact of the no action alternative and other reasonable alternatives. "Cumulative impact" is defined to include the effects not only of the agency's actions but the actions of third parties that will result from the agency's actions:

Cumulative impact is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions.

40 C.F.R. § 1508.7. The Council on Environmental Quality's NEPA guidance echoes this point in instructing that even where the federal agency has determined that the "no action" alternative means to take no action whatsoever, the EIS must assess the effects of the actions by others that will occur in reaction to the agency's not taking a particular action:

Where a choice of "no action" by the agency would result in predictable actions by others, this consequence of the "no action" alternative should be included in the analysis. For example, if denial of permission to build a railroad to a facility would lead to construction of a road and increased truck traffic, the EIS should analyze this consequence of the "no action" alternative. (Council on Environmental Quality, "Forty

U.S. Army Corps of Engineers, Mobile District  
 Comments on Revised Scoping of EIS for WCM Update  
 December 31, 2009  
 Page 6

Most Asked Questions Concerning CEQ's National  
 Environmental Policy Act Regulations," Question 3, 46 Fed.  
 Reg. 18026, 18027 (1981)).

Thus, the Corps cannot ignore the enormous environmental, social, and economic costs<sup>4</sup> that would result from ceasing to provide water supply to the millions of Georgians that have depended on Lake Lanier for decades by merely declaring that its "no action" alternative will not include water supply. It must consider those effects as part of the cumulative impact associated with altering its operations to cut off water supply. Those effects would include, for one, water shortages that would endanger human health, cripple the local and regional economies, and inflict substantial harm on the national economy. They also would include development of alternatives to replace the hundreds of millions of gallons of water that Lake Lanier previously supplied. Those alternatives would involve substantial environmental and economic costs.<sup>5</sup>

### **C. Failing to Consider Water Supply in the Current EIS Process Would Result in a Waste of Corps Resources and Taxpayer Dollars**

Although by no means assured, it is at least a reasonably plausible scenario that, either by reversal of the July 17, 2009 ruling or an act of Congress with or without a prior agreement among the three States, the current legal impediments to the Corps' authority to operate Lake Lanier for water supply will be removed prior to July 17, 2012. In that event, if the Corps has not studied water supply as an alternative, it will have to redo the EIS. Therefore, in addition to the fact that assessment of water supply alternatives is necessary to fully evaluate the effect of scenarios that do not include

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<sup>4</sup> In preparing its EIS, the Corps should consider the degree to which the action may adversely affect, not only endangered species and the natural environment, but also the human environment. 40 C.F.R. § 1508.27(b) (definition of "significantly"). Therefore, effects to public health and safety must be taken into consideration along with other economic and societal effects. *Id.*; 40 C.F.R. § 1508.14 (definition of "human environment").

<sup>5</sup> A statewide task force of business leaders, elected officials, community representatives, and conservation organizations appointed by Governor Sonny Perdue has estimated that the Atlanta area alone would suffer an economic hit of approximately \$26 billion annually if Lake Lanier cannot be operated for water supply and alternatives are not available. The task force concluded that alternatives sufficient to meet the shortfall that would be created by the loss of Lake Lanier would not be available by July 2012, and that the alternatives that might be available after 2012 would cost billions of dollars to **construct** and implement. Those alternatives would involve adverse environmental impacts in addition to the economic costs. The report of the task force is available online at [http://gov.georgia.gov/00/channel\\_modifieddate/0,2096,78006749\\_154453222,00.html](http://gov.georgia.gov/00/channel_modifieddate/0,2096,78006749_154453222,00.html).

U.S. Army Corps of Engineers, Mobile District  
Comments on Revised Scoping of EIS for WCM Update  
December 31, 2009  
Page 7

water supply, it would be a waste of the Corps' efforts and taxpayer dollars for the Corps to prepare an EIS that does not fully assess the impact of meeting present and future water supply needs.

### **III. Conclusion**

Georgia requests that you give the foregoing comments and the comments expressed in the 2008 Comment Letter careful consideration in scoping the EIS for the update of the WCM for the Corps' projects in the ACF Basin. Please contact me if you have any questions or if I can be a resource for additional information that would assist you in this process.

Respectfully Submitted,



---

F. Allen Barnes  
Director  
Georgia Environmental Protection Division

**Board of Commissioners**

RECEIVED

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Gwinnett County Board of Commissioners

Charles E. Bannister, Chairman  
Shirley Fanning Lassetter, District 1  
Bert Nasuti, District 2  
Mike Beaudreau, District 3  
Kevin Kenerly, District 4



DXR  
DS

December 22, 2009

Tetra Tech, Inc.  
107 Saint Francis Street  
Suite 1403  
Mobile, AL 36602-9986

**RE: Scope of Draft EIS for Updated Water Control Manual for ACF**

Greetings:

In response to the request for comments on the scope of the Environmental Impact Statement for the Apalachicola-Chattahoochee-Flint (ACF) Water Control Manual, enclosed is a letter from the Acting Director of the Gwinnett County Department of Water Resources which lays out in detail Gwinnett County's support for a broader scope than that proposed.

Gwinnett County believes that the study should include alternatives that consider water supply at several levels. An expanded scope will provide the most efficient use of limited public funds while also ensuring that the Corps of Engineers will be prepared to implement the final determination regarding the use of ACF water, regardless of the outcome.

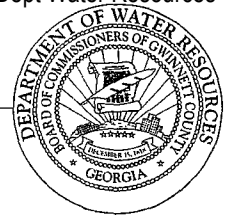
Please feel free to contact me or staff of the Department of Water Resources if we can be of assistance.

Sincerely,

Charles E. Bannister, Chairman  
Board of Commissioners

Enclosure

c: District Commissioners  
Glenn Stephens  
Col. Bryon Jorns/Mobile COE  
Senator Isakson  
Senator Chambliss  
Congressman Linder  
Congressman Johnson  
Chick Kruatler/ARC  
Pat Stevens/ARC  
Jerry Griffin/ACCG



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gwinnettcounty

December 21, 2009

Tetra Tech, Inc.  
107 Saint Francis Street  
Ste 1403  
Mobile, AL 36602-9986

RE: Scope of Draft EIS for Updated Water Control Manuals for ACF

Dear Sir:

We believe that preparing an Environmental Impact Statement (EIS) for a Water Control Manual for the Apalachicola-Chattahoochee-Flint River ("ACF") Basin must include water supply analysis and that failure to consider alternatives for water supply, at several levels, is unwise and a waste of limited public funds. The U.S. Army Corps of Engineers' (the "Corps") EIS consideration must include alternatives, such as operations for water supply, even if they are deemed to exceed the agency's jurisdiction. 40 C.F.R. § 1502.14(c). The EIS is required to include alternatives that exceed the Corps' current authority because this information may be useful to the President, to Congress, and to the public in shaping policy on a larger scale. See *Natural Res. Defense Council, Inc. v. Morton*, 458 F.2d 827, 836-37 (D.C. Cir. 1972). We set forth in this comment various alternatives which require study by the Corps deemed necessary for compliance with the National Environmental Policy Act ("NEPA"). In addition, to the extent that the Corps anticipates obtaining a Biological Opinion from the U.S. Fish and Wildlife Service ("FWS") in connection with its analysis, we offer comment relative to that process as well.

#### 1. Scope of NEPA

NEPA was enacted in 1969 to put an end to the practice of establishing environmental policy "by default and inaction," and making major decisions "in small but steady increments" that perpetuate the mistakes of the past. See *Natural Resources Defense Council, Inc. v. Morton*, 458 F.2d 827, 836 (D.C. Cir 1972) (quoting S. Rep. No. 91-296, 91st Cong., 1st Sess. (1969) p. 5). NEPA does this by requiring each federal agency to prepare an EIS before undertaking any "major Federal action[]" significantly affecting the quality of the human environment." 42 U.S.C. § 4332(C). An EIS is a "detailed statement by the responsible official" of an agency that discusses the environmental impact of the proposed action, adverse environmental effects, alternatives to the proposed action, "the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity," and "any irreversible or irretrievable commitments of resources which would be involved in the proposed action should it be implemented." See 42 U.S.C. § 4332(C). "[B]y focusing the agency's attention on the environmental consequences of a proposed project," the requirement to prepare an EIS "ensures that important effects will not be overlooked or underestimated only to be discovered after resources have been committed or the die otherwise cast." *Robertson v. Methow Valley*

Tetra Tech, Inc.  
 Page Two  
 December 21, 2009

*Citizens Council*, 490 U.S. 332, 349 (1989). The EIS also serves a larger informational role, however, by providing a springboard for public comment. *Id.*

NEPA also created the Council on Environmental Quality (CEQ) and directed it to promulgate regulations applicable to all federal agencies. The CEQ regulations are found at 40 C.F.R. Parts 1500 to 1518. Federal Regulations at 40 C.F.R. § 1502.14 represent the heart of the environmental impact statement. Based on the information and analysis presented in the section on the Affected Environment (Sec. 1502.15) and the Environmental Consequences (Sec. 1502.16), an EIS should present the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decision maker and the public. Pursuant to this section agencies shall:

- (a) Rigorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated.
- (b) Devote substantial treatment to each alternative considered in detail including the proposed action so that reviewers may evaluate their comparative merits.
- (c) Include reasonable alternatives not within the jurisdiction of the lead agency.
- (d) Include the alternative of no action.
- (e) Identify the agency's preferred alternative or alternatives, if one or more exists, in the draft statement and identify such alternative in the final statement unless another law prohibits the expression of such a preference.
- (f) Include appropriate mitigation measures not already included in the proposed action or alternatives.

The regulation at 40 C.F.R. § 1502 (c), properly applied, requires the Corps to include water supply at and above current uses in its EIS, particularly since the historical practice has been to support this water supply use.

## 2. Alternatives Required by NEPA to be Considered

As the Corps is certainly aware, the authority for water supply from Lake Lanier is currently the subject of litigation. Although a July 17, 2009 decision of the U.S. District Court for the Middle District of Florida (Magnuson, J.), sitting as a Multidistrict Litigation ("MDL") Court, determined that water supply was not authorized for the reservoir, that decision is currently under appeal to the U.S. Court of Appeals for the Eleventh Circuit. Gwinnett County maintains that it is entitled to water supply from the reservoir under multiple theories, some of which were not addressed by the Court. Thus, Gwinnett County challenges the Corps' decision to omit water supply study in the current EIS process. See Notice of Intent To Revise Scope of Draft Environmental Impact Statement for Updating the Water Control Manuals for the Apalachicola-Chattahoochee-Flint River Basin To Account for Federal District Court Ruling, 74 Fed. Reg. 59,965, 59,966 (Nov. 19, 2009).

Given the requirement that the Corps study alternatives even where they exceed its jurisdiction, 40 C.F.R. § 1502.14(c), to omit water supply from consideration, especially

Tetra Tech, Inc.  
Page Three  
December 21, 2009

given the historical usage of Lake Lanier for this purpose, is a serious flaw in the EIS process which would warrant vacatur if perpetuated. At minimum then, the Corps should study whether and to what extent water supply impacts reservoir operations at various levels to accommodate whatever ruling may ultimately issue in the pending litigation. We would support a Corps' EIS for the Water Control Plan for the ACF Basin which includes water supply at the current levels as one alternative. Other water supply alternatives which should be studied would be what the Corps specified in its public notice—water supply being provided to Buford and Gainesville (10 mgd) with the off-peak flow at 600cfs—as well as water supply being authorized at the level of yield for the year 2035 found in the Metropolitan North Georgia Water Planning District's Water Conservation and Water Supply Plan of 2009. We believe that studying all of these alternatives would inform the Corps as to possible outcomes of the appeal of the MDL Court's July 17, 2009 Order. In addition we believe that being informed as to these alternatives would position the Corps to embrace not only any litigation outcome, but also any negotiated water allocation that the three states might agree to, or, any authorization for water supply use from the reservoirs that might be approved by the United States Congress. In our opinion to do otherwise is wasteful and does not prepare the Corps for any outcome other than water supply not being an authorized purpose for Buford Dam and Lake Lanier, and violates NEPA for failure to consider all reasonable alternatives, regardless of whether they are deemed currently within the scope of the Corps' jurisdiction.

In addition to the foregoing water supply issues which require study, there are many alternatives for the Corps to consider in scoping its operations to address interests of stakeholders in the ACF Basin. For instance, raising the pool of Lake Lanier by two feet, from 1071' to 1073,' would increase the amount of conservation storage at Lake Lanier by almost 10%. The lake has actually seen that type of additional volume given the recent extraordinary rains, without any ill effects to other Corps operations. A similar strategy for increasing system storage would be to reduce the "winter drawdown" at West Point Dam. The Corps could also consider refurbishing Jim Woodruff Lock and Dam to increase the "head limit" for this facility; this is a structural issue that caused the Corps to waste a substantial amount of water that could otherwise have been preserved in storage during the height of the drought.

Moreover, if the Corps' objective is to protect threatened and endangered species, the Corps should broaden the scope of the EIS to address the root cause of the problems alleged to be confronting them. The construction of Jim Woodruff Dam and the Corps' historical maintenance of the Apalachicola River channel have significantly affected the habitat available for the federally-listed species by deepening and widening the river channel and by the deposition of dredged material in the floodplain. For example, the lowering of the bed of the Apalachicola River at RM 105.5 that has occurred as a result of the mere presence of the dam has 40 times greater impact on the elevation of the water at that location than does the total consumptive water use of the metropolitan Atlanta area. Whereas dredging and scour at RM 105.5 have reduced the stage of the river at this point by about 5 feet, metro-area withdrawals lower it by about 2 inches. Thus, as an alternative to using the ACF Basin's scarce water resources to mitigate a problem caused by the degraded condition of the river bed, the Corps might consider fixing the riverbed below

Tetra Tech, Inc.  
 Page Four  
 December 21, 2009

Woodruff Dam. See *Westlands Water Dist. v. U.S. Dep't of Interior*, 376 F.3d 853, 863 (9th Cir. 2004) (affirming the Department of Interior's EIS in the context of reservoir management where it included "the use of non-flow measures, such as the mechanical removal of vegetation on the banks, the reshaping of the riverbed and banks, and the placement of appropriately sized gravel, to promote and sustain natural salmonid production" as aspects of various alternatives).

Similarly, Swift Slough is threatened by a combination of channel incising and sedimentation caused by numerous factors having little or nothing to do with reservoir operations or water withdrawals. The Corps should consider addressing these issues through targeted dredging or by pumping water into the slough. It should also consider ways to address the enormous diversion of flow into the Chipola Cutoff immediately upstream of Swift Slough. The Chipola Cutoff is claiming an ever-increasing share of the mainstream of the river, now up to 40%. The effect of this diversion on the stage of the river at the head of Swift Slough is far greater than any effect caused by the operation of the reservoirs on the Chattahoochee River. Therefore the Corps should study alternatives to address these perceived problems.

Other alternatives need to be explored to address any salinity issues that might exist in Apalachicola Bay. To the extent salinity impacts the species, the root cause of any impact and any consequent mitigation needs to be determined. The Corps should study the effect of Sikes Cut in particular. Sikes Cut is the man-made navigation channel that was cut through St. George Island, the barrier island that separates the bay from the Gulf of Mexico. The cut allows salt water to pour into the bay on a continuous basis. Although additional analysis is needed, Sikes Cut likely has a far greater impact on salinity in the bay than any minor effect of flows due to reservoir operations. The Corps should study the effect that Sikes Cut is having on Apalachicola Bay and any alternatives that could mitigate this effect if required.

In sum, many alternative not presently presented in the EIS process, or purposefully omitted such as water supply, deserve and demand study by the Corps if it is to fulfill its NEPA responsibilities.

### 3. Selection of an Appropriate Environmental Baseline for any Biological Opinion.

In anticipation that the Corps may seek to obtain a Biological Opinion relative to its EIS strategy, given the history of the litigation in the MDL Court, we note that the Corps may not employ deference to a determination by another agency which it knows to be flawed. In two prior Biological Opinions issued in conjunction with ACF Basin operations, the FWS utilized an improper baseline for purposes of its analysis. In this regard, the environmental baseline which should be studied is the current status of the listed species and critical habitat, as it has been affected by all prior actions. The environmental baseline provides the without-action status, which FWS must compare to the future status of the species, taking into consideration the effects of the action together with any "cumulative effects." 50 C.F.R. § 402.14(g) and (h). If the species' status would be improved by the proposed action in comparison to the environmental baseline, then the action is considered "beneficial." If the species' status would be diminished in comparison to the environmental baseline, however,

Tetra Tech, Inc.  
Page Five  
December 21, 2009

then the action is considered "adverse." Because the effects of the action are measured against the environmental baseline, it should be readily apparent that the baseline is often the difference between "take" and "no take."

In its prior analysis, FWS used hydrological modeling to compare flows produced by the existing RIOP to what it called a "baseline" consisting of the actual flows produced by reservoir operations from 1975 to 2007 (the "Regulated Condition"). The decision to use the Regulated Condition from 1975 to 2007 as the baseline for this comparison is unlawful and arbitrary, however. The Regulated Condition cannot be used as the baseline because the Regulated Condition is the result of numerous discretionary actions by the Corps related to historic reservoir operations. Another reason that the Regulated Condition cannot be used to measure the effects of the RIOP is that it is impossible to associate the Regulated Condition from 1975 to 2007 with any one operating plan. The Corps modified its operations many times, in many ways, during those years.

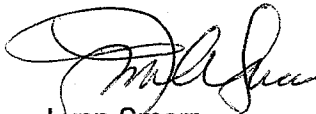
As a result of using the wrong environmental baseline to evaluate the RIOP, FWS confused natural mortality—mortality that would have occurred in the run-of-river condition without any reservoir regulation—with "take" caused by the RIOP. Based on that error, FWS imposed conditions requiring the Corps to minimize alleged take it did not cause. The run-of-river flow regime is the operating plan in which all dams and physical channel modifications are assumed to remain in place, but where the reservoirs are not operated to control the flow of water. In other words, the run-of-river flow regime is what the Apalachicola River would look like if the Corps simply "turned off" the reservoirs and let the river flow without regulation. The Eighth Circuit affirmed the use of the run-of-river flow regime as the baseline in *In re: Operation of the Missouri River Sys. Litig.*, 421 F.3d at 632. The Ninth Circuit *required* the use of run-of-river as the environmental baseline in *National Wildlife Federation v. National Marine Fisheries Service*. See 524 F.3d at 928-931 (holding that NOAA Fisheries committed legal error by including discretionary reservoir operations in the baseline flow regime).

If, and to the extent that, the Corps should seek to obtain a Biological Opinion from FWS in connection with its EIS analysis, or for purposes of study of any operational strategy derived therefrom, we urge the Corps to insist that FWS construct hydrological modeling utilizing a run-of-river flow regime so as not to draw improper inferences regarding alleged take of any currently listed endangered or threatened species, which the Corps has not caused, so as to avoid imposing unnecessary conditions to remedy such perceived take and we urge the Corps to disregard any such conditions based on an erroneous baseline in connection with the development of its Water Control Manual for its reservoir operations.

Tetra Tech, Inc.  
Page Six  
December 21, 2009

If you need additional information, please contact me or our Department of Water Resources staff.

Sincerely,

A handwritten signature in black ink, appearing to read 'Lynn Smarr', written in a cursive style.

Lynn Smarr  
Acting Director

C: Chairman  
District Commissioners  
Glenn Stephens  
Col. Byron Jorns/Mobile COE  
Senator Isakson  
Senator Chambliss  
Congressman Linder  
Congressman Henry C. Johnson, Jr.  
Chick Kruatler/ARC  
Pat Stevens/ARC  
Jerry Griffin/ACCG



## LAKE LANIER ASSOCIATION, INC.

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[www.lakelanier.org](http://www.lakelanier.org)

January 2, 2010

Tetra Tech, Inc.  
107 Saint Francis Street  
Ste. 1403  
Mobile, AL 36602-9986

RE: Comments regarding update of ACF Water Control Plan

Dear Sir or Madam:

Thank you for the opportunity to comment as part of the Corps of Engineers' ("Corps") revision of the Water Control Plan ("WCP") for the Apalachicola-Chattahoochee-Flint River ("ACF") system. The Lake Lanier Association ("Association") previously submitted scoping comments via its letter of November 20, 2008, a copy of which accompanies this letter. Please consider the contents of this letter in addition to those in our previous correspondence.

### **Recreation is an Authorized Purpose of Lake Lanier**

We understand that the scoping process has been re-opened due to Judge Magnuson's *Memorandum and Order* of July, 2009 in the *Tri-State Water Rights Litigation*. But, while Judge Magnuson ruled that water supply storage is not an authorized purpose of Lake Lanier, ***recreation has always been and remains today an authorized purpose***. The Corps has always considered recreation an authorized purpose, and Judge Magnuson explicitly and deliberately left this premise intact in his Phase 1 decision.

### **Augmentation Flows are Not Required by the Endangered Species Act**

During the 2006-2007 drought, Lake Lanier became the sole source of augmentation flows to maintain the 5000 cfs required minimum flow at the Chattahoochee Gage. Augmentation releases from Lanier's storage during late summer and fall of 2007 at times amounted to two to three times the basin inflow of the entire ACF. Lake Lanier alone cannot provide enough water to be the sole source of augmentation flows to meet the Apalachicola River required minimum flow under such circumstances without being depleted.

As addressed in our previous comment letter and in the Association's Motion for Summary Judgment in Phase 2 of the *Tri-State* litigation, the Endangered Species Act ("ESA") does not require the Corps to augment Apalachicola River flows above run-of-

the-river levels using Lake Lanier storage. This is because nature herself - not discretionary Corps operations - is the cause of any harm to the species resulting from low ACF flows. However, the Corps *is* obligated even during severe droughts to support the ACF facilities' legally-recognized benefits, including recreation.

The Fish and Wildlife Service ("Service") and the Corps used the wrong *environmental baseline* in determining what flow levels are required in the Apalachicola for protected species under the ESA. The correct baseline is run-of-river flows, which by definition do not consist of augmentation flows from Lake Lanier. Therefore, although we fully support the laudatory goal of the ESA, augmentation flows that disproportionately affect Lake Lanier are not required by the ESA and should not be imposed by the new WCP.

### **Alternative Means of Remediating Apalachicola River Issues Should be Examined**

A fundamental flaw of the ACF system is that the Flint River has never been dammed, as originally contemplated by the Corps. This single factor has removed a significant portion of the water storage and flow control the Corps originally contemplated for meeting demands within the ACF system. The Association opposes using the Revised Interim Operations Plan ("RIOP") as the basis for a new WCP because it relies solely on augmentation flows as the solution to the concerns the Corps and the Service have identified in the Apalachicola River and its environs. The most fundamental problem with this solution is that it depends on augmentation flows from Lanier, which has the smallest drainage basin of any ACF reservoir, without regard to other causes of the problems in the Apalachicola basin itself.

As reflected in the Service's RIOP Biological Opinion, among the causes of concerns in the Apalachicola are channel incising and widening, diversions of as much as 40% of the Apalachicola's flow to the Chipola Cutoff, and increased Apalachicola Bay salinity caused by Sikes Cut. The net result is to subject Lake Lanier, the source of 65% of the ACF system's storage capacity, to the risk of being drawn down significantly, especially in times of severe and prolonged drought, with no relief through eliminating or minimizing the actual causes themselves. This is a slippery slope of gradually-increasing future augmentation demands that could eventually render Lake Lanier physically incapable of meeting its authorized purpose of recreation - much less supporting downstream demands or Georgia's need for water supply storage.

In recognition of the vital importance of recreation to the lives and livelihoods of the people and businesses whose interests the Association represents, we believe it is imperative that the Corps, in appropriate consultation with Service, examine in detail all alternative means of mitigating the ACF system's reliance on Lake Lanier as the solution for the system's problems - for which Lanier was neither designed nor intended. It is extremely important to our constituents that Lanier's water level be maintained as high as possible while supporting other authorized purposes, and that severe draw-downs - especially below 1060 MSL - be avoided to the maximum extent possible. We believe significant improvements can be made in these regards, if the Corps will take the time to genuinely investigate and implement alternative remediation measures.

### **Specific Requests for the New WCP**

We request that the new WCP include remediation measures, including those mentioned above, as opposed to relying solely on augmentation flows as the solution to the system's problems. We hope to see a new WCP that keeps Lanier's water levels as high as possible and minimizes draw-downs in times of severe and extended drought while meeting all legitimate downstream demands. To accomplish this, we request the following of the Corps in its creation of the new WCP:

- (a) it not use the RIOP as the presumptive basis for the new WCP;
- (b) it review and analyze:
  - (i) all comments submitted by the Association; and
  - (ii) alternative operations for severe and multi-year drought events to minimize draw-downs of Lake Lanier; and
  - (iii) mitigation factors as alternatives to minimum flows for support of threatened and endangered species, including:
    - (1) remediating the Apalachicola River channel,
    - (2) modifying or closing flows in the Chipola Cutoff, and
    - (3) modifying or closing Sikes Cut; and
  - (iv) alternatives to the following provisions of the RIOP:
    - (1) required minimum flows of 5,000/4,500 cfs and existing trigger criteria,
    - (2) prescribed storage/release thresholds,
    - (3) determining minimum flows based on composite storage zones and "basin inflow,"
    - (4) rise rates and fall rates,
    - (5) minimum seasonal flows and begin/end dates (e.g., for spring spawning), and
    - (6) percent of Basin Inflow available for storage; and
- (c) it model such proposals and alternatives where possible, and include in its Record of Decision for the new WCP a thorough explanation of its modeling and analysis of such proposals and alternatives as well as its reasons for accepting or rejecting them.

We appreciate the Corps' consideration of these recommendations, and look forward to working with it to finalize a much-needed new WCP that will benefit all stakeholders in the ACF system.

Yours truly,



Val Perry  
Executive Vice-President



## LAKE LANIER ASSOCIATION, INC.

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November 20, 2008

Colonel Byron G. Jorns  
District Commander  
U.S. Army Corps of Engineers  
Mobile District  
107 Saint Francis Street  
Suite 1403  
Mobile, AL 36602-9986

RE: Comments regarding the updated Water Control Plan

Dear Colonel Jorns:

Thank you for the opportunity to comment as part of the Corps' revision of the Water Control Plan ("WCP") for the ACF system. Please consider the contents of this letter as comments from the approximately 4,000 individuals and businesses represented by the Lake Lanier Association.

### **The Lanier Regional Economy Must Be Preserved**

A regional economy of more than \$5.5 billion has grown up since the 1950's around Lake Lanier. The lives and livelihoods of thousands of people are tied to maintaining Lake Lanier at a water level that supports the lake-based economy that has become the lifeblood of the region surrounding Lanier. The operations that the Corps defines in its new WCP must be designed to preserve and protect that economy and the people whose lives depend on it by maintaining the highest possible water level in the Lake. The comments in this letter address ways in which we believe the Corps should design its WCP to safeguard and maximize the benefits Congress intended through the construction of Buford Dam and the resulting creation of Lake Lanier.

### **Institute Lake Lanier-Specific Management Triggers**

The Revised Interim Operating Plan ("RIOP") currently in place contains no Lake Lanier-specific trigger points for storing or releasing water. It is possible for the composite storage level of all reservoirs to be in Zone 3 or even higher while Lanier is still in Zone 4 due to its much slower refill rate. Downstream reservoirs not only naturally refill much more rapidly than Lanier, they do so even more quickly when rainfall is greater in the ACF watershed south of Buford Dam than north of it. This makes it not only possible but highly probable that the other ACF reservoirs will recover fully while Lanier is still as low as Zone 4, as has happened through much of 2008. The RIOP provides for specialized management of West Point Lake and Lake Walter F. George by allowing temporary storage above the winter pool rule curve under certain conditions. The new WCP should incorporate specialized provisions for managing Lake Lanier that reflect its distinctive characteristics and management needs. Without them, Lake Lanier is destined to be

*"Dedicated to the preservation of Lake Sidney Lanier"  
Since 1960*

disproportionately impacted by draw-downs for downstream management, without an ability to remain near full pool or to refill.

We request that the new WCP include provisions that will allow the retention of basin inflow above Buford Dam to the maximum extent possible under all conditions. The purpose of this is to allow Lake Lanier to realize the benefits intended for it under the original authorizing legislation by remaining at or near full pool whenever possible. This can best be accomplished with Lake Lanier-specific management triggers that are independent of the triggers for the entire ACF system. We request that the new WCP incorporate Lake Lanier-specific management triggers that will maximize water storage in Lake Lanier when it falls below Zone 1 and allow the Corps to store a higher percentage of basin inflow above Buford Dam when composite storage is in Zones 2, 3, and 4. We recognize that Lanier-specific triggers would need to be coordinated with triggers for the rest of the system, but the triggers in the RIOP clearly fail to accommodate Lake Lanier's unique disproportion of storage volume and drainage area in comparison to the other reservoirs in the ACF.

We also maintain that the Endangered Species Act ("ESA") does not require the Corps to augment flows from storage purely for protection of the listed species when basin inflows fall below 5,000 cfs at the Chattahoochee Gage - because nature herself is the cause of the low ACF flows, not the Corps. During droughts, the Corps is obligated to augment flows using storage in Lanier to realize the ACF facilities' legally-recognized benefits (including recreation, water supply, and hydropower). But augmentation flows purely to meet the arbitrary 5,000 cfs MRF are not mandated by the ESA.

Nonetheless, we recognize that the Corps does not concur with our opinion. In light of that, it has become obvious that the new WCP needs to be designed for Lanier to be able to refill as quickly as possible to recover from MRF augmentation flows and be able to sustain its intended benefits, including recreation and the economy that is dependent on that industry. In order to accomplish that, we request that the Corps incorporate in the new WCP a Lake Lanier-specific trigger to disengage Lanier as a source of MRF augmentation, from the point at which Lanier's level declines to Action Zone 3 until it returns to the top of Action Zone 2.

Alternatively, and at a minimum, we would request that the Corps set a trigger at the existing Lanier Water Access Limited level of 1060 MSL. As recognized on page 10 of the 1989 draft WCP, **"The level at which severe impacts are observed on all aspects of recreational activities is called the Water Access Limited Level (WAL). At this point all or almost all boat ramps will be out of service, all swimming beaches will be unusable, major navigation hazards occur, channels to marinas are impassable and/or wet slips must be relocated, and a majority of private boat docks are unusable. Additionally, distance and bottom surfaces between water line and normal shoreline at established recreation areas makes water nearly inaccessible."**

As our members have experienced over the last two years, at a level of 1060 severe economic impacts occur as a result of the recreational impacts predicted by the draft WCP. When Lanier's level declines to the top of Action Zone 3 and further to the level of the WAL, these impacts reach drastic proportions and amount to tens of millions of dollars in direct recreational revenues alone. According to a recent assessment by the Marine Trade Association of Metro Atlanta (attached for your review), gross annual year-over-year Lanier boat sales revenues have fallen between \$50,000,000 and \$70,000,000 dollars, largely as a result of low water levels. The impact on Lake Lanier real estate investment values is potentially many times this dollar amount. The effect on the local economy is devastating. We therefore request that the Corps include a

Lanier-specific trigger to reduce discharges from Buford Dam to the Atlanta metro water supply and quality minimum of 650 cfs whenever these water levels are reached.

We understand that, due to the Corps' operations downstream, structural design limitations may affect the Corps' ability to use such a trigger under certain circumstances. Should the structural design limits of the ACF facilities be inadequate to accommodate this trigger, we would request that the Corps invest in whatever infrastructure changes are necessary to support it.

### **Full Pool Level**

We request that the WCP provide for a Lanier full pool level of 1073 MSL, instead of the current level of 1071 MSL. This operational change was originally proposed by the Lake Lanier Association in our letter of January 9, 2007 (attached). We further request that the new WCP provide for this full pool level throughout the year, rather than only during the summer season. Lake Lanier was designed with a substantial flood control capacity that greatly exceeds any demand that has ever been put on it. In the 21<sup>st</sup> century, weather prediction capability greatly exceeds what was available when Buford Dam was constructed in the 1950's. As a result, the Corps is able to monitor changing weather and manage the flood control capabilities of the system so well that there is no purpose served in lowering the full pool level to 1070 from October through April. The importance of this is heightened in times of drought, when basin inflow to refill Lanier can be severely reduced. There is no longer any reason to drop Lanier's level during the "non-summer" months.

### **Eliminate Maintenance of a Navigation Channel as a Corps Operation**

We request that navigation be abandoned as a function of the Corps' ACF operations. The Corps' studies have shown that dredging to maintain the required 9-foot channel is not only extremely impractical and costly but directly detrimental to the threatened and endangered species in the Apalachicola River and its environs. The result is a damaged river system that puts additional pressure on upstream resources such as Lake Lanier to compensate for the deteriorating riverbed and deleterious effects on habitat. The state of Florida has refused for a number of years to grant a permit to the Corps for depositing dredged material. Modern-day transportation has reduced the use of the ACF for that purpose to a trickle. Maintaining a navigation channel is an anachronism that should be eliminated from the Corps' operations of the ACF.

### **Adopt a Permanent Water Quality Minimum Flow of 650 cfs at Peachtree Creek**

We request that, in times of drought and when water quality standards can be maintained, the minimum water quality flows required at Peachtree Creek be reduced from 750 cfs to 650 cfs. The Corps has already granted this flow reduction twice in 2008, based on water quality data and assurances from the Georgia Environmental Protection Division. We endorse this reduction as a permanent feature of the WCP, subject to changing water quality requirements.

### **Modify the RIOP if it is to be Used as a Basis for the WCP**

Lake Lanier is at its lowest point in history for this time of year, and the Corps projects it to fall to its lowest level in history in early December, 2008. Currently, the water flowing into the Lake from the Chattahoochee and Chestatee rivers is running at the third percentile, and both rivers

have been flowing at or near their record lows for much of 2008. All of this paints a bleak picture for Lake Lanier in the coming months. That picture is made even bleaker by a number of the provisions of the RIOP implemented on June 1 of this year.

We believe a number of the changes in Corps operations since the inception of the IOP in 2006 are severely detrimental to Lake Lanier and the interests of our members. In particular, the LLA is concerned that a number of features of the RIOP that are deleterious to Lake Lanier will form the basis for revisions to the WCP. From 1989 until 2006, the Corps operated the ACF according to its draft WCP of 1989. That plan generally ensured that Lake Lanier would refill to the maximum extent possible by June 1 every year. The series of Interim Operating Plans instituted in 2006 dramatically changed the focus of the Corps' ACF operations by subjugating the refilling of Lanier to downstream concerns, many of which were not authorized purposes or intended benefits of the construction of Buford Dam. We wish to express our opposition to utilizing those provisions (embodied in what is now the RIOP) as the basis for revisions to the WCP, as more specifically detailed in the comments denoted by bullet points below.

- **Minimum Discharge**

The RIOP requires minimum releases equal to or greater than basin inflow (BI) under many conditions, and minimum releases of greater than 50% of BI under virtually all but the highest BI levels. This contrasts with the statement on page 2 of the RIOP proposal that, "Except when basin inflow is less than 5,000 cfs, the minimum releases are not *required* to exceed basin inflow" (emphasis added). Requiring releases to *at least equal* BI provides no opportunity for refilling of reservoirs, and this provision applies in all but the months of December through February. Limiting storage to substantially less than 50% of BI under all but the highest BI levels seems to unnecessarily restrict the ability of the reservoirs, and especially Lake Lanier, to recover or at least stabilize in times of drought.

We question the need for such high minimum releases, because they appear to create an unnecessary risk of preventing the reservoirs – and especially Lake Lanier – from refilling not only in drought conditions but even when BI is relatively plentiful. We also question allowing the highest rate of storage only when BI reaches 39,000 cfs in Zone 3, especially when the BI level for such storage in Zones 1 and 2 is 34,000 cfs. The Lake Lanier Association requests that the new WCP be designed to allow storage of a much greater percentage of available BI in all Zones, in order to ensure that Lake Lanier will remain at or near the top of its conservation pool whenever possible and refill as quickly as possible.

The statement on page 2 of the RIOP proposal also underscores the Corps' failure to reduce the minimum required flow of 5,000 cfs except under conditions in which Lake Lanier will already be well down into Zone 4. Because Lake Lanier contains the vast majority of all storage in the system, composite storage is likely to reach Zone 4 (or the Drought Zone) only if Lake Lanier is already in Zone 4. Because Lake Lanier refills so slowly, it may well remain in Zone 4 long after the composite storage level reaches higher Zones, a condition that exists today. Lake Lanier got into this situation in part because of the requirement of a minimum flow of 5,000 cfs under the original IOP. The EDO wisely allowed for a reduction in the minimum required flow, and while the RIOP does include the option of a minimum flow of 4,500 cfs when composite storage is in the Drought Zone, the new WCP should incorporate an even lower minimum required flow that is based on the actual requirements for realizing the original intended benefits of the system's facilities. If the system is going to be managed without specific provisions that reflect the unique needs of Lake Lanier (addressed below), then the WCP should include at least the option of implementing that minimum required flow in higher composite storage Zones. Without that flexibility, Lake Lanier will almost certainly be disproportionately impacted in drought situations in order to meet the current minimum required flow.

- **Drought Contingency Operations**

The RIOP created a new Composite Storage Zone category called a Drought Zone. The Corps calculates the Drought Zone as “roughly” the equivalent of water in the Inactive Zones for each of the reservoirs in the ACF system plus the water in Zone 4 of Lake Lanier. There has been no explanation of why the Corps believes there is a need for the Drought Zone. According to the Corps’ own projections, if the RIOP had been in place during 2007, the composite storage levels of all the reservoirs would have entered the proposed Drought Zone for only a two-week period in November, 2007. Even though the Drought Plan would have been in effect after the composite level entered Zone 4, there would have been no decrease in the minimum required flow except for that two-week period. Thus, the implementation of the proposed Drought Contingency Operations provisions would have accomplished little or nothing to prevent Lake Lanier from reaching its lowest point in history on December 26, 2007.

It appears that the only reason for the existence of the Drought Zone is to relieve the Corps from having to acknowledge that an exceptional drought exists at much higher composite storage levels, and thereby from reducing flows below 5,000 cfs even in the face of the worst drought on record in Georgia. The net goal would appear to be to avoid invoking the relief theoretically afforded in the Drought Zone by setting the trigger so low that composite storage will almost always remain above it. The truth of this is demonstrated by the fact that Lanier would have been in the Drought Zone under the RIOP for only about two weeks, despite its having endured the worst drought in ACF recorded history. This provision of the RIOP also reduces the potential for composite storage to rise above Zone 4, and does virtually nothing to ameliorate depleted storage conditions upstream in times of drought. We therefore request that the Drought Contingency Operations be implemented at a higher composite storage level, at least at the top of Zone 4, and remain in effect until composite storage returns to the top of Zone 3. We also request that the Corps eliminate the RIOP’s seasonal storage limitations and minimum flow thresholds in the new WCP.

- **Maximum Fall Rate**

The now-defunct EDO plan suspended the rate at which river stage (and the reservoir discharges that control river stage) could be reduced. However, the RIOP reinstated the original down-ramping rate (“fall rate”) provisions except when composite storage level falls to Zone 4 and the Drought Contingency Operation is implemented. The fall rates were a major factor in the excessive depletion of water in Lake Lanier in 2007, and reinstating them threatens to repeat the same disastrous result. Neither the Corps nor the Fish and Wildlife Service has demonstrated science justifying these fall rates. The listed mussels and Gulf sturgeon evolved and presumably thrived prior to the creation of any of the Corps’ ACF facilities. At that time, the rise and fall of the rivers were essentially uncontrolled, and the rapidity at which water levels rose and fell were far greater than the effects under either the RIOP. Common sense would suggest that since the species evolved and thrived with uncontrolled fall rates, artificially restricting fall rates is not essential – and may be counterproductive – to their continued well-being. Managing outflows to control flooding is one thing, but the proposed fall rates are a separate and distinct set of controls that is not supported and should not be included in the new WCP. The RIOP provision for a fall rate of 0.25/ft/day in the Drought Zone is a completely unnecessary and inadvisable step that drains the reservoirs without any discernible benefit, and should not be included in the new WCP.

- **Apalachicola Minimum Required Flow**

Primarily, we are concerned about operations during droughts. In this regard, the RIOP focuses on the 5,000 cfs Minimum Required Flow (MRF) at the Chattahoochee Gage. During the

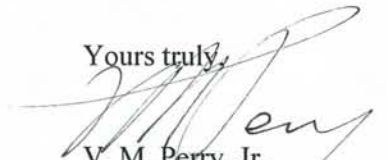
fall and winter of 2007, Lake Lanier's level was precipitously reduced at a rate greater than 4,000 cfs specifically to achieve this minimum flow. We believe the MRF was created arbitrarily by the Corps to support, in the wording of the WCP, "downstream industrial users." (See, 1989 draft WCP at 12.) There are no "industrial users" downstream of JWLD that are authorized purposes of the ACF or that provide intended benefits as established by the River and Harbor Acts of 1945 and 1946 or the Flood Control Act of 1944. In the fall of 2007, a Corps spokesman suggested that the 5,000 cfs was initially established to accommodate Plant Scholtz, a coal-fired power plant owned by Southern Company. It should be noted that, as a non-hydroelectric plant, Scholz was not an intended beneficiary of the construction of the ACF facilities. Yet even accepting the proposition that Plant Scholz should be accommodated, Southern Company has publicly acknowledged that 2,000 cfs would suffice for that plant's water requirements. The Corps should therefore reduce the minimum required flow in the new WCP to 2,000 cfs until and unless it documents greater operational flow requirements that were recognized as benefits under the original authorizing legislation for construction of the ACF facilities.

In times of drought, Lake Lanier is the source of last resort for flow augmentation to meet the MRF, and subjugating the specifically-identified benefit of recreation on Lake Lanier to such unauthorized users is unlawful. The operational philosophy espoused by the RIOP of meeting the 5,000 cfs MRF until Composite Storage is at the Drought Zone is antithetical to the Corps' philosophy for the last 50 years of ensuring that Lake Lanier refills by June 1 of each year. The objective of ensuring that Lake Lanier remains as close to full pool as possible throughout the year is the only one that truly serves all the operational purposes and benefits of Lake Lanier.

We acknowledge that the RIOP reduces MRF from 5,000 cfs to 4,500 cfs, but that provision applies only when the composite storage level is in the Drought Zone. Under that provision, the reduced flow rate would have occurred for only two weeks in November, 2007. At that time, Lake Lanier was already within a few feet of reaching its lowest level in history. The small reduction in flow accomplished by that provision would have lasted only two weeks and then would have ended, actually draining Lake Lanier even faster in December. The Lake Lanier Association requests that the new WCP incorporate specialized management provisions for maximizing storage in Lake Lanier, and a scientifically- and legally-supported minimum required flow at higher composite storage levels.

We appreciate the Corps' consideration of these recommendations, and look forward to working with you to finalize a much-needed new WCP that will benefit all stakeholders in the ACF system.

Yours truly,



V. M. Perry, Jr.  
Executive Vice-President  
Lake Lanier Association

cc: Pete Taylor, Colonel, USA, (retired)  
Brigadier General J. Schroedel

December 31, 2009

USACE Mobile  
ACF Scoping –Master Water Control Manual

Since its development, West Point Lake has been over managed with excessive amounts of storage capacity being set aside for Flood Control and to provide for flow augmentation downstream for other than authorized purposes. These management practices have adversely impacted the “General Recreation” authorized purpose established by Congress for the lake in the legislation that established the project. Documentation and planning by the Corps reflect that West Point Lake has an established recreational impact level of 632.5 msl. Yet the rule curves, action zones and operating practices have enabled historic operations that consistently breach elevations below the recreational impact floor of 632.5.

Current rule curves and action zones, utilize water from West Point Lake (as measured against percentage of conservation storage remaining) to augment downstream flows and to retain water in Lake Lanier. Yet other Corps lakes on the ACF do not carry same type of specific “General Recreation” and “Sport Fishing and Wildlife” authorizations that West Point lake has been assigned by Congress. An example of this error is found in the 1989 Water Control Plan (draft) on page 12, para 3, which calls for the maintenance of flows at Jim Woodruff for “Industrial Users”. The West Point project is used to support this flow but was never authorized by Congress to support “Industrial Users” downstream. Utilization of West Point waters for downstream flow augmentation when levels are below 632.5 must cease.

This practice has restricted the economic development of the lake region contemplated in the original Recreational Master Plan for West Point Lake, adversely impacted lower income and minority populations, and may have on “low water” occasions compromised the quality of water in the lake. The level of recreational development and use has been compromised by frequent low water elevations, rapidly fluctuating lake levels

**FLOOD CONTROL**-During the fall of 2009, the ACF system, especially the region between West Point Lake and Lake Lanier experienced several major flooding events. One of the events occurred in late September of 2009 and in the words of USGS was a record setting event. West Point Lake began the event at full pool, and Lake Lanier was nearly full. The vast amount of rain and related storm water run off occurred between Buford Dam and Franklin GA. West Point lake took the full brunt of the flood while at full pool and the Corps successfully managed the flood without any major downstream impact.

Prudent flow management and wise use of induced storage resulted in a well controlled event. Practices used during this event by the Corps should be incorporated into operating

plans and set aside flood storage should be reduced accordingly- especially during winter months.

This singular event demonstrates that rule curves established for West Point Lake in the 1960's and 1970's for flood control are inaccurate with the amount of winter flood storage highly over allocated. The sacrifice of recreational use for a flawed flood control allocation of storage in the lake has caused significant harm to the opportunity to meet the authorized recreational purpose.

Excessive low water levels restrict access and use of the lake for recreational and sport fishing and wildlife purposes. The concept that lake recreational use on West Point does not exist in winter months is flawed. The location of the lake and the mild climate in the southern Piedmont allows for recreational use year round. Sailing, boating, fishing (from shoreline and boat) all continue throughout the winter in west Georgia and east Alabama. In fact recreational sailing is often more desirable during winter months than during summer months. Yet low water levels make sailing more dangerous with deep keeled sail boats. The removal of water from the lake hampers these recreational uses. Rapid water fluctuations also reduce the desirability to use the lake.

Flood concerns north of West Point should be addressed by providing additional flood storage in Lake Lanier with reduced lake elevations there for winter flood storage, and not by relaying on increased storage capacity in West Point Lake which carries the recreational authorization. Lake Lanier elevations should be reduced to comply the authorized use of that lake and not increased as has been demanded. Any increase in elevation at Lanier can only adversely impact demands to reduce flood storage on West Point Lake. Reducing demands for storage at West Point and increasing flood storage at Lanier which carries the recreational authorization is important to assure compliance with the year round recreational authorization at West Point.

#### **ADVERSE IMPACTS ON LOWER INCOME AND MONORITY**

**POPULATIONS:** There is a large population of lower income and minority populations in the west Georgia and east Alabama area that are adversely impacted by lower lake levels at the West Point project associated with low levels for winter flood storage and flow augmentation downstream in summer months and dry spells. Congress specifically granted an entitlement to the citizens of GA and AL when it authorized the West Point project that provided outstanding shoreline recreational facilities and contemplated a lake that would be very usable to address recreational needs of the surrounding population. Corps operations until now have adversely impacted these populations. Shoreline recreation in parks becomes less than desirable and attendance drops when lake levels are low and water resources are depleted to support other demands in the system.

Often times the fishing stocks of the lake are used not only for recreation, but are also used for sustenance by lower income and minority users of the lake. Citizens do fish the shores and surface of the water to gather fish for sustenance. When the lake is lowered, access to the lake is hampered restricting shoreline access and the ability to fish for food. Many families utilize the shoreline, recreational facilities for picnics , reunions and social

gatherings. When the stored water of the lake is depleted these facilities frequently go from adjoining a desirable water feature to having picnic and recreational areas adjoining mud flats.

Through its operations, the Corps has not managed the resource to address these impacts. Parks have been closed. People can not reach the water with fishing gear when the water of the lake is depleted. The lake becomes an undesirable place to visit and to recreate.

Any contemplation of a revised or new operations manual must provide for stable, higher lake elevations to satisfy the needs of these populations and this must be studied and understood as required by Executive Order 12898. Such change should put any burden on flood storage or flow augmentation below 632.5 on other lakes and maintain West Point above the recreational impact level.

**WATER QUALITY:** West Point Lake has had an extremely high Chlor a standard set as a level for water quality compliance since the mid 90's. It far exceeds the levels set for other southeastern lakes and allows for poorer quality water. Chlor a levels in the 10-15 mg/l can be achieved in West Point Lake through management of the resource with higher pool levels. The establishment of an exceptionally high regulatory standard has allowed for the injection, concentration and build up of excessive nutrients from upstream sources and allowed overuse and the depletion of stored water in the West Point reservoir to maintain the lake "in compliance" with the Clean Water Act.

Recently GA EPD began its exploration of lowering the Chlor a standard from the current 27mg/l to a mid teen range, an action long overdue. EPD studies revealed that when Corps reduced storage and operated with lower lake levels during drought, low elevations, combined with higher temperatures resulted in high Chlor a levels. Operations of West Point Lake by the Corps with resulting low water levels have brought algae blooms indicating high Chlor a levels. The Corps should study the value and benefits of raising lake elevations – especially during drought to assure the dilution of nutrients and to maintain higher water quality in the lake. EPA review and study of this is warranted and requested. Higher lake elevations can result in healthier water for the lake.

It has been established that the Corps should adhere to maintaining a balance between authorized uses. The Corps always meets hydropower demand and flood control demands, but rarely provides for continuous recreational use through useful pool elevations. The application of arbitrarily harsh action zones – more severe than any other lake in the basin as measured by percentage of conservation storage remaining – and, the over allocation of winter flood storage eliminates any possibility of compliance with the recreational authorization.

Any revised or new ACF Water Control Manual must restore consistently higher water levels in the lake at or above 633 msl.

Please include study of these matters outlined in this correspondence in the EIS for the ACF water control manuals and include additional study regarding these matters.

Thank you for your attention to these issues.

Sincerely

Joe Maltese  
LaGrange, GA

Hall Martin  
4448 Sandhurst Place  
Flowery Branch, GA 30542  
November 19, 2009

Tetra Tech Inc.  
107 Saint Frances St.  
Suite 1403  
Mobile, AL 32206-9986

I'm writing in response to the enclosed newspaper article from THE TIMES in Gainesville, Georgia.


I am a citizen of Hall County, Georgia and have been a resident here for thirteen years. I live within five miles of Lake Sidney Lanier.

In the year 2000 residents here were restricted from washing their cars. To my knowledge we are still under that restriction today. I would like to know if the citizens downstream of us in Alabama and Florida are under the same restriction? If, why not?

Hall County is being severally restricted from using the water right here in our county so that people downstream of us can use the water from Lake Lanier. We have heard in past years that the water from the lake had to be let out at a high rate to keep barges floating downstream. In the last few years we were told the lake had to be depleted to keep muscles alive downstream.

Now I am not forgetting that we have been in a drought here for the last two years, and a semi drought for a few years before that. And I am aware of the water war going on for the use of the water from Lake Lanier. But if we have to be on water restrictions, then so should everyone downstream that uses water from Lake Lanier.

Hall Martin

A handwritten signature in cursive script that reads "Hall Martin". The signature is written in dark ink and is positioned below the printed name.

Thank You for Your Donation!

Photos by **SARA GUEVARA** | The Times

preparation for today's Great American  
ing Downey Boulevard representing the

Cancer Society community manager for Hall County. "This is a day that we're trying to reach tobacco users and say, today is the day to quit. This is your day, we want you to quit."

Volunteers will be along Downey Boulevard holding signs from sunrise to sunset to explain what the shoes represent.

The Lanier Georgia Chapter of the Oncology Nursing Society, Northeast Georgia Health Systems and Keep Hall Beautiful joined with the American Cancer Society for today's Great American Smokeout.

"It's an amazing collaboration," Griffin said. "It has been a real joy to make an impact in our community to stop smoking."

■ Please see **SMOKEOUT**, 3A

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times, \$50 is a lot of money, Gonzales said.

The computer science student said he did not know about the fee increase until other upset students told him.

Gainesville State students will now pay \$100 in special fees each

■ Please see **FEE**, 3A

this month, one mem-  
ber of the three-judge  
panel wrote that the  
boy's parents had not shown the school was  
"deliberately indifferent" to possible warn-  
ing signs that he was suicidal.

Don and Tina King, the parents of Jona-  
than King, sued Alpine Psychoeducational  
Program and its supervisory agency,

■ Please see **DEATH**, 3A

## Corps will seek input on manuals

Public again asked  
to chime in on water  
control operations

From staff reports

The U.S. Army Corps of Engineers plans to gather new public input for water control manuals governing the Apalachicola-Chattahoochee-Flint River Basin, which

"In light of the significant new circumstances and information associated with (a July 17 federal court) ruling, the corps will reopen the scoping process to gather stakeholder input regarding these new circumstances," said the Mobile District's public affairs chief, E. Patrick Robbins.

Public comments will be considered in preparation of the Environmental Impact Statement for the manuals. Corps officials said.

Comments should be submitted in writing to Petra Teeninc, 102 Saint Francis St., Suite 1403, Mobile, Ala. 36606-9936. They also can be submitted at [www.sam.usace.army.mil/pa/acf-wcm/mail\\_list.htm#form](http://www.sam.usace.army.mil/pa/acf-wcm/mail_list.htm#form).

Those who sent in comments in a previous public-comment period don't have to resubmit.

The corps held five public meetings on

■ Please see **CORPS**, 3A

## DEATHS 2B

Van Adams, 61  
Carol Anita Hosch Buffington, 57  
Dusty Mackenzie Daniel, 22  
Sibyl W. Funaro, 81  
Jeffrey Douglas Gore, 47  
Robert Lamar Johnson, 85

Pauline Underwood King, 86  
Thelma Wilkerson Nicholson  
Carl Robinson, 82  
Wallace Verdell Sutton, 78  
Tim N. Teagarden, 51  
Betty Lee Tillerson, 73

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hours

m-4 p.m. | GOT A TIP? Call 770-718-3435 or 800-395-5005 ext. 3435

Martin, Hall-resident

**MeadWestvaco**

January 4, 2010

**Via Overnight Delivery and Electronic Mail to Brian.A.Zettle@usace.army.mil**

Col. Byron Jorns, District Engineer  
Mobile District, U.S. Army Corps of Engineers  
c/o Tetra Tech, Inc.  
107 Saint Francis Street, Suite 1403  
Mobile, Alabama 36602-9986

**Re: Scoping Comments – Revisions to the Scope of Draft Environmental Impact Statement for Updating the Water Control Manuals for the Apalachicola-Chattahoochee-Flint River Basin to Account for Federal District Court Ruling**

Dear Colonel Jorns:

On February 22, 2008, the U.S. Army Corps of Engineers (“Corps”) published in the *Federal Register* a notice of intent (“NOI”) to prepare an environmental impact statement (“EIS”) for the proposed implementation of the updated Apalachicola-Chattahoochee-Flint River Basin (“ACF”) Water Control Manual (“WCM”).<sup>1</sup> On September 19, 2008, the Corps supplemented the NOI in the *Federal Register* and invited the public to participate in the Corps’ EIS scoping process.<sup>2</sup> To account for Judge Paul A. Magnusson’s July 17, 2009 memorandum and order in the Tri-State Water Rights litigation (hereinafter the “Order”),<sup>3</sup> the Corps noticed its intent to revise the scope of the draft EIS on November 19, 2009.<sup>4</sup>

In response to the Corps’ 2008 EIS scoping process for the ACF WCM, MeadWestvaco (“MWV”) submitted comments to the Corps dated November 21, 2008. We have enclosed an additional copy of those comments, which are hereby incorporated by reference. This letter presents MWV’s additional input regarding the issues which it believes should be addressed in the EIS to be prepared by the Corps for the ACF WCM update in light of Judge Magnusson’s Order. MWV is a member of the Tri Rivers Waterway Development Association (“TRWDA”) and agrees with the comments

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<sup>1</sup> See Intent to Prepare Draft Environmental Impact Statement for Updated Water Control Manuals for the Apalachicola-Chattahoochee-Flint River Basin, 73 Fed. Reg. 9780 (February 22, 2008).

<sup>2</sup> See Public Scoping Meetings for Update of the Water Control Manual for the Apalachicola-Chattahoochee-Flint River Basin in Georgia, Florida, and Alabama, 73 Fed. Reg. 54,391 (September 19, 2008).

<sup>3</sup> *In re Tri-State Water Rights Litigation*, Case No: 3:07-md-01 (M.D. Fla., July 17, 2009).

<sup>4</sup> See Notice of Intent to Revise Scope of Draft Environmental Impact Statement for Updating the Water Control Manuals for the Apalachicola-Chattahoochee-Flint River Basin to Account for Federal District Court Ruling, 74 Fed. Reg. 59,965 (November 19, 2009).

Col. Byron Jorns, District Engineer  
 January 4, 2010  
 Page 2

submitted by TRWDA on its behalf. In addition, MWV's more specific comments follow. Thank you for allowing MWV to submit these comments and for your consideration.

**1. MeadWestvaco's Interest in the ACF River Basin.**

MeadWestvaco's Mahrt Mill is located on the Chattahoochee River near Phenix City, Alabama. The mill's operations are more specifically described in MWV's November 2008 comments, which are incorporated herein by reference. The Mahrt Mill's current NPDES permit issued by the Alabama Department of Environmental Management ("ADEM") includes provisions that are clearly dependent upon instream flows and water quality within the Chattahoochee. The permit specifically states:

During the months of May through October, inclusive, when the flow in the Chattahoochee River is less than 6000 cfs, the following formula shall govern the discharge rate of BOD<sub>5</sub> provided the specific limitation and the water quality constraints listed herein are not exceeded:  $BOD_5(ppd) = 3.26Q_s$ ; where  $Q_s$ =stream flow in cfs as measured at a location selected by the permittee and approved by ADEM.<sup>5</sup>

Flow reductions in the Chattahoochee and the corresponding reduction in water quality will make it difficult or (more likely) impossible for MWV to continue to operate the Mahrt Mill and remain in compliance with its NPDES Permit. Consequently, significant flow reductions in the river would result in MWV shutting the mill down in order to avoid NPDES Permit violations. Significantly, the Corps recognized MWV's very real water quality concerns in the Corps' January 2009 scoping report for the ACF:

The Corps received 155 comments addressing water quality issues in the ACF River Basin. . . . There is also a concern that reductions in streamflow would result in **MeadWestvaco's** shutting down operations to avoid violations of its National Pollutant Discharge Elimination System (NPDES) permit.

. . . . .

Above all, citizens expressed the need for the Corps to avoid operations that will violate or lead to violations of water quality standards. Specifically, they recommended the following:

- Examine the effects of reservoir operations on water quality, at projects and in the tailrace, in the Master Manual update, including ongoing and potential future effects on dissolved oxygen,

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<sup>5</sup> MWV ADEM NPDES Permit Number AL0000817 ("NPDES Permit"), Part I.A. DSN001 Treated process wastewater (May – October), n.3.

Col. Byron Jorns, District Engineer

January 4, 2010

Page 3

temperature, pH, conductivity, nutrient and organic material dynamics, and various industrial and municipal discharges.

- ADCNR recommended that the Corps maintain water quantity stations above and below all dams, and support flow stations below each lock and dam.
- The Corps should adjust West Point Lake operations to ensure adequate inflow of water and lake elevations to dilute nutrient loading into the lake.<sup>6</sup>

## 2. **Water Supply Is Not an Authorized Purpose of the Buford Dam Project (Lake Lanier).**

Like TRWDA, MWV's previous comments emphasized that the Corps must abide by the Congressionally authorized purposes of the ACF River System, and MWV sets forth the lawful project purposes for all five of the Corps' ACF reservoirs. The Court Order demonstrates that MWV and TRWDA applied the correct method to identify the Congressionally authorized purposes for the Corps' ACF projects.

MWV cited the original statutes authorizing the construction of the reservoirs, as well as the specific Corps documents referenced in those statutes. For example, in the case of Lake Lanier, MWV cited primarily the 1946 Rivers and Harbors Act<sup>7</sup> and the 1946 House of Representatives document.<sup>8</sup> From those documents, MWV concluded that the three Congressionally authorized purposes of Lake Lanier are flood control, navigation, and hydropower. The Court Order cited the very same documents under the sub-heading of "Authorization," as well as additional legislative history.<sup>9</sup> The Court Order then concluded that the primary purposes of Lake Lanier are in fact flood control, navigation, and hydropower.<sup>10</sup>

MWV's prior comments explained that water supply is not a Congressionally authorized purpose of the Buford Dam Project and Lake Lanier. The Court agreed as follows:

Having thoroughly reviewed the legislative history and the record, the Court comes to the inescapable conclusion that water supply, at least in

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<sup>6</sup> Final Scoping Report: Environmental Impact Statement – Update of the Water Control Manual for the Apalachicola-Chattahoochee-Flint (ACF) River Basin, in Alabama, Florida, and Georgia. Prepared for: U.S. Army Corps of Engineers, Mobile District. Prepared by: Tetra Tech, Atlanta, Georgia. pp. 52-53. January 2009 (emphasis added).

<sup>7</sup> Pub. L. No. 79-525, 60 Stat. 634, 635 (1946).

<sup>8</sup> H.R. Doc. No. 80-300 (1946).

<sup>9</sup> Court Order at 6-9.

<sup>10</sup> Court Order at 72-74.

Col. Byron Jorns, District Engineer  
 January 4, 2010  
 Page 4

the form of withdrawals from Lake Lanier, is not an authorized purpose of the Buford project.<sup>11</sup>

The Court Order went on to explain that additional Congressional authorization would be required before the Corps could lawfully reallocate Lake Lanier storage for water supply regardless of what has been done in the past.<sup>12</sup>

### **3. Water Quality Is an Authorized Purpose of West Point Dam and Lake.**

West Point Dam and Lake Project (“West Point”) is specifically authorized not only for hydropower and navigation, but also for flood control, fish and wildlife recreation, and general recreation for those in the La Grange area. As pointed out below, the language of the authorizing legislation also authorizes the project for water quality purposes.

In his Order, Judge Magnusson found that the primary authorized project purposes of the Buford Dam Project were limited to hydropower, flood control and navigation, and that “water supply, at least in the form of withdrawals from Lake Lanier, is not an authorized purpose.”<sup>13</sup> In tracing the history of the Buford Dam Project, Judge Magnusson made clear that any benefit to water supply due to regulation of downstream flows was incidental to the primary purposes of the project. The Order cited numerous Corps documents which either did not identify water supply as a purpose of the project or specifically stated that water supply was not a purpose of the project.<sup>14</sup>

Similarly relying on Corps documents, MWV contends that the Corps has consistently acknowledged in its regulations and public documents that water quality is an authorized purpose of the West Point Project,<sup>15</sup> and that Congress recognized water quality as a purpose of the project, as well. West Point, a Corps-operated hydroelectric power project approximately 30 miles north of Columbus, was authorized by Congress in the Flood Control Act of 1962 (“FCA”).<sup>16</sup> This is consistent with the legislative history of the FCA, which authorized construction of West Point “substantially in accordance with the recommendations of the Chief of Engineers in House Document Numbered 570, Eighty-Seventh Congress.”<sup>17</sup> In these recommendations, the Chief of Engineers recognized the importance of maintaining instream flows for waste dilution via releases from West Point:

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<sup>11</sup> Court Order at 77.

<sup>12</sup> Court Order at 88.

<sup>13</sup> Court Order at 77.

<sup>14</sup> Court Order at 72-74.

<sup>15</sup> See, e.g., 33 C.F.R. § 222.5, App. E.

<sup>16</sup> Pub. L. No. 87-874, 76 Stat. 1173 (1962) (referencing H.R. Doc. No. 87-570 (1962)) (hereinafter “FCA”).

<sup>17</sup> 76 Stat. at 1181.

Col. Byron Jorns, District Engineer  
 January 4, 2010  
 Page 5

The cities of West Point, Lanett, Langdale and Riverview all discharge industrial and domestic wastes into the river. **Sufficient flow would have to be discharged from the West Point Dam at all times to prevent a nuisance condition in this reach.** . . . The Columbus-Phenix City area is another large contributor of pollution. Additional stream flow regulation which would be afforded by the . . . West Point reservoir[] would help dilute this pollution to some degree.<sup>18</sup>

The Corps estimated at the time that the proposed minimum releases from West Point's hydroelectric power operations would provide sufficient flows for the dilution of waste immediately downstream.<sup>19</sup> However, it was clearly pointed out to both Congress and the Corps that this assumption would not likely hold true as circumstances changed. Officials with the U.S. Department of Health, Education and Welfare made it clear in a 1962 letter to the Corps which is included in the Congressional record regarding the passage of the FCA that future population and industrial growth in the region would lead to an increase in the required minimum flows:

An increased diversion of flow is expected because of population distribution and growths [sic]. Need for greater flows to maintain stream quality below wastes [sic] outfalls is predicted for the future and these requirements must be determined. . . . It is again emphasized that the above discussions [concerning required minimum flows] apply to present waste loading conditions. **Future area development with its resultant larger waste production may well result in higher flow requirements.**<sup>20</sup>

Despite these admonitions and the passage of almost 50 years since the Corps' original engineering study for West Point, the Corps has never officially revised its 1962 opinion that the minimum hydropower releases from West Point are sufficient to maintain water quality downstream. As the Corps develops revisions to the ACF Water Control Manual, it must ensure that its operations serve the communities and businesses of the ACF River System's middle regions, such as MWV, by ensuring adequate releases to protect water quality, as clearly contemplated and authorized by Congress in 1962.

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<sup>18</sup> U.S. Department of the Army, *Chattahoochee River, West Point and Franklin, Georgia: Report of the Chief of Engineers*, H.R. Doc. No. 87-570, at 31 (1962) (emphasis added).

<sup>19</sup> *Id.*

<sup>20</sup> Letter from John Thoman, Regional Program Director, Water Supply and Pollution Control, Department of Health, Education and Welfare, to U.S. Army Corps of Engineers, H.R. Doc. No. 87-570 (July 21, 1962) (emphasis added); *see also* Letter from James B. Coulter, Acting Chief, Technical Services Branch, Division of Water Supply and Pollution Control, United States Public Health Service, to U.S. Army Corps of Engineers, H.R. Doc. No. 87-570 (July 23, 1962) (minimum flow provided by hydropower releases "does not allow for changes brought about by future development").

Col. Byron Jorns, District Engineer

January 4, 2010

Page 6

MWV urges the Corps to explain in the revised manual and the environmental documentation how it intends to account for the needs of the communities and industries located in the middle and lower portions of the ACF River System, including MeadWestvaco, for adequate flows to maintain water quality. As explained above, water quality is one of the authorized purposes of West Point. Further, MWV believes that the Corps is required by its own regulations to develop water control plans for “reservoir, locks and dams . . . to conform with the objectives and specific provisions of authorizing legislation and applicable Corp of Engineers reports.”<sup>21</sup> Therefore, any water control plan for West Point must be clearly documented in any water control manuals developed for West Point or for the entire ACF River Basin.<sup>22</sup>

The water control plan for West Point (and in fact for each Corps reservoir in the ACF) must include a “coordinated regulation schedule for project/system regulation.”<sup>23</sup> Such a “reservoir regulation schedule” should include operating criteria, guidelines, rule curves, and specifications that govern the storage and release functions of a reservoir.<sup>24</sup> Any reservoir regulation schedule developed for West Point must place particular emphasis on anticipating and providing for project operation during drought conditions<sup>25</sup> as well as being kept up-to-date.<sup>26</sup> In fact, any water control manual for West Point must

be revised as necessary [by the Corps] to conform with changing requirements resulting from developments in the [ACF River Basin], improvements in technology, new legislation and other relevant factors [e.g., Court Order] . . . .<sup>27</sup>

MWV recognizes that developing or revising a water control plan “is a lengthy process that requires the Corps to comply with significant regulations and procedures”<sup>28</sup> involving public involvement and agency coordination. In developing a water control plan for West Point, the Corps will need to involve the general public by holding meetings and providing documentation that “explains the recommended water control plan . . . and provides technical information explaining the basis for the recommendation.”<sup>29</sup> Additionally, regulations require that the water control plan for West Point (or any other reservoir in the ACF River Basin) “be developed in concert with

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<sup>21</sup> 33 C.F.R. § 222.5(f)(1), (i)(2).

<sup>22</sup> See 33 C.F.R. § 222.5(f)(3).

<sup>23</sup> 33 C.F.R. § 222.5(e)(1).

<sup>24</sup> 33 C.F.R. § 222.5(e)(2). Generally, these schedules describe “limiting rates of reservoir releases required during various seasons of the year **to meet all functional objectives of a particular project** [e.g., water quality at West Point], acting separately or in combination with other projects in a system [e.g., other Corps’ reservoirs in the ACF].” *Id.* (emphasis added).

<sup>25</sup> 33 C.F.R. § 222.5(f)(4), (i)(5).

<sup>26</sup> 33 C.F.R. § 222.5(f)(2). The Corps is required to take “necessary actions to keep its water control plans up-to-date. *Id.*”

<sup>27</sup> 33 C.F.R. § 222.5(f)(3).

<sup>28</sup> See *In re Operation of the Mo. River Sys. Litig.*, 305 F. Supp. 2d 1096, 1097 (D. Minn. 2004) (discussing requirements for revising Corp Master Manual).

<sup>29</sup> 33 C.F.R. § 222.5(g)(2)(i)(C).

Col. Byron Jorns, District Engineer

January 4, 2010

Page 7

all basin interests which are or could be impacted by or have an influence on project regulation,” and that the Corps develop and execute its water control plans in “[c]lose coordination . . . with all appropriate international, Federal, State, regional and local agencies . . . .”<sup>30</sup>

The purpose of the requirement for public involvement and close coordination with affected state and local agencies is to ensure that the Corps, when developing a water control plan, considers and evaluates the authorized purposes of its projects and other interests in order to “secure the maximum benefits to river interests.”<sup>31</sup> Should the Corps fail to consider all authorized river interests in the formulation of a water control plan, its action may be contrary to law.<sup>32</sup> MWV understands that while the Corps may not be barred from deviating from the operating requirements of a water control plan for West Point, water control plans are binding on the Corps and may “serve as a basis for judicial review.”<sup>33</sup>

**4. Revisions to the Manual Must Recognize Navigation as a Primary Project Purpose and Reflect Statutory Intent to Support Downstream Communities.**

MWV reiterates that a primary purpose of all of the ACF reservoirs is to support navigation, especially between the Gulf of Mexico and the fall line at Columbus, Georgia. Moreover, MWV still believes that the Corps’ provision of flow sufficient to support navigation will meet other purposes and legal requirements. Such flows will support industrial and municipal requirements, among them water quality discussed further in Section 3 above. Citing numerous statutes and legislative records, including many Corps documents, Judge Magnusson’s Order clearly identified navigation as a primary purpose of the Corps’ reservoirs in the ACF River System. Therefore, in accordance with the Order, the Corps should revise the scope of the EIS to ensure that reliable, year-round navigation on the ACF system is a required alternative and is fully provided for in the revision of its water control plans and manuals.

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<sup>30</sup> 33 C.F.R. § 222.5(f)(9); see also *In re Operation of the Mo. River Sys. Litig.*, 305 F. Supp. 2d at 1097 (Corps must “work closely with various agencies so that all river interests are adequately considered”).

<sup>31</sup> *In re Operation of the Mo. River Sys. Litig.*, 363 F. Supp. 2d 1145, 1153 (D. Minn. 2004) (aff’d in part and vacated in part).

<sup>32</sup> *Id.*

<sup>33</sup> *In re Operation of the Mo. River Sys. Litig.*, 363 F. Supp. 2d at 1154 (citing *South Dakota v. Ubbelohde*, 330 F.3d 1014, 1029-30 (8th Cir. 2003)). Moreover, “[t]here can not be a continuing or recurring deviation from approved water control plans. In the case of a continuing or recurring change, the water control plan must be changed and the required approval obtained from [Corps Headquarters].” U.S. Army Corps of Engineers, Digest of Water Resources Policies and Authorities, EP 1165-2-1, at 18-3 to 18-4 (July 30, 1999).

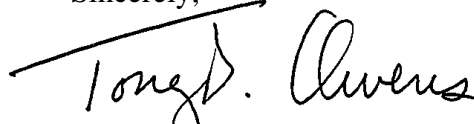
Col. Byron Jorns, District Engineer

January 4, 2010

Page 8

Thank you again for this opportunity to comment. Please feel free to contact me at (334) 855-5233 if you have any questions.

Sincerely,

A handwritten signature in black ink that reads "Tony D. Owens". The signature is written in a cursive style with a long horizontal line extending from the top of the "T" across the "Owens" part of the name.

Tony D. Owens  
Environmental Manager

Encl.: MWV Scoping Comments, November 21, 2008.

c: Brian A. Zettle (via electronic mail)

**MeadWestvaco**

November 21, 2008

**Submitted Via Electronic Mail to comments@acf-wcm.com**

Col. Byron Jorns, District Engineer  
Mobile District, U.S. Army Corps of Engineers  
107 Saint Francis Street, Suite 1403  
Mobile, Alabama 36602-9986

**Re: Scoping Comments – Revisions to the Water Control Manual for the  
Apalachicola-Chattahoochee-Flint River Basin**

Dear Colonel Jorns:

This letter presents MeadWestvaco's ("MWV") input regarding the issues and concerns which it believes should be addressed in the Environmental Impact Statement ("EIS") to be prepared by the U.S. Army Corps of Engineers' ("Corps") for the Apalachicola-Chattahoochee-Flint ("ACF") River Basin Water Control Manual Update. MWV is a member of the Tri Rivers Waterway Development Association ("TRWDA"), and agrees with the comments presented by TRWDA on its behalf, which MWV has expanded on below. On addition, MWV's more specific comments follow. Thank you for allowing MWV to submit these comments and for your consideration.

**1. MeadWestvaco's Interest in the ACF River Basin**

MeadWestvaco's Mahrt Mill is located near Phenix City, Alabama. The Mahrt Mill is the sole manufacturing facility for the production of coated paperboard for MWV's Coated Board Division. The Mahrt Mill produces over 1,000,000 tons of coated paperboard per year at the Phenix City site, which covers about 1,400 acres and operates 24 hours per day, seven days per week, approximately 355 days per year. The Coated Natural Kraft<sup>®</sup> ("CNK<sup>®</sup>") paperboard produced at MWV's Mahrt Mill is shipped around the world and converted into folding cartons and beverage carriers. MeadWestvaco is a major employer in the Phenix City and surrounding area, with approximately 950 employees.

MWV's Mahrt Mill requires water from the Chattahoochee River for use in its manufacturing processes. On average, the Mahrt Mill withdraws approximately 28 mgd and at the same returns approximately 24 mgd to the Chattahoochee River, almost 90% of what it withdraws.

Flow reductions in the Chattahoochee River can have significant negative effects on the financial viability of MWV's Mahrt Mill. Insufficient water for manufacturing processes will result in reduced production and, consequently, lost jobs in the Phenix City and surrounding areas of Alabama and Georgia. In addition, MWV's current NPDES permit includes provisions which are dependent upon instream flows and water quality within the Chattahoochee River.

Flow reductions in the river and the corresponding reduction in water quality will make it difficult or (more likely) impossible for MWV to continue to operate the Mahrt Mill and remain in compliance with its NPDES permit. Consequently, significant flow reductions in the river would result in MWV shutting the mill down in order to avoid NPDES permit violations.

**2. The Corps Must Acknowledge and Address the Middle Portions of the ACF River System.**

While various needs in North Georgia and the Apalachicola River have dominated the discussions regarding the ACF Basin over the past few years, Congress authorized and instructed the Corps to build and operate the ACF reservoirs substantially for the benefit of those located in between. For example, as explained in more detail below, Congress authorized the three storage reservoirs, including Lake Lanier, to support navigation and hydropower production below the fall line. Further, West Point is specifically authorized not only for hydropower and navigation, but also for flood control, fish and wildlife recreation, and general recreation for those in the La Grange area. As the Corps develops revisions to the ACF water control manual, it must ensure that its operations serve the communities and businesses of the ACF River System's middle regions, such as MeadWestvaco.

**a. MeadWestvaco Depends on the Corps' Provision of Adequate Flow.**

MeadWestvaco chose to locate our facility in Phenix City with the expectation that the Corps would continue to operate the ACF reservoirs according to the laws authorizing their construction and operation. We spent millions of dollars building infrastructure based on the assumption that flows sufficient to serve the federal water projects' purposes would provide enough water for our needs. We also hoped and expected to reap the benefits associated with river transport of fuel and bulk products. Not only has MWV acted in reliance on the Corps' lawful operation of the ACF reservoirs in the past, but we are counting on adequate flows for our future survival.

MWV urges the Corps to explain in the revised manual and the environmental documentation how it intends to account for the needs of the communities and industries located in the middle and lower portions of the ACF River System, including MeadWestvaco.

**b. The Corps Must Continue to Provide Agreed-Upon Flows in the Middle and Lower Chattahoochee River.**

As TRWDA points out, in recent years, representatives of Alabama, Florida, and Georgia have attempted to develop a mutually agreeable allocation of water in the ACF River System. In that context, on July 22, 2003, the three governors signed an agreement which set flow parameters, including the following:

- “On the Chattahoochee River above its confluence with Peachtree Creek, a flow of 750 cfs will be maintained on a daily basis, with the understanding that the State of Georgia is entitled to a variable flow regime that requires no less than 650 cfs in winters. . . .”

- “On the Chattahoochee River at Columbus, Georgia, a flow of 1350 cfs will be maintained on a daily basis at all times, and a flow of 1850 cfs will be maintained on a weekly basis provided that the top of the storage pool in West Point Reservoir is above 621.6 feet.”
- “On the Chattahoochee River at Columbia, Alabama, a flow of 2000 cfs will be maintained on a daily basis.”
- “On the Apalachicola River at Chattahoochee, a minimum flow of 5000 cfs will be maintained on a weekly basis at all times. . . .”

Memorandum of Understanding Regarding Initial Allocation Formula for the ACF River Basin, ¶ 4 (July 22, 2003) (emphases added). Those flow figures were to be included in any allocation formula agreed to by the parties, and they were “intended to be met by the combined actions of maintaining water uses consistent with the allocation formula, and by the Corps operating the federal reservoirs consistent with the allocation formula.” *Id.* (emphasis added).

In revising the manual, the Corps should develop operations to meet those parameters as agreed to by all three states. TRWDA’s comments call the Corps’ attention to the Middle and Lower Chattahoochee flow requirements, namely, 1350 cfs daily and 1850 cfs weekly at Columbus, Georgia, and 2000 cfs at Columbia, Alabama. We believe those flow levels are generally sufficient to meet the lawful, authorized purposes of the ACF River System. They also correspond to the flows that are necessary to meet our facility’s operational needs.

**c. The Corps Cannot Rely on Flint River Flows to Meet Apalachicola River Needs to the Detriment of the Flows in the Middle and Lower Chattahoochee River.**

Recently, as TRWDA points out, increased flows from the Flint River have contributed to the Corps’ release of flows from Woodruff to provide for 5000 cfs at Chattahoochee. Like all stakeholders in the basin, MWV is grateful for any inflow that helps meet needs within the system. However, the Corps must not rely on Flint River flows to meet Apalachicola River requirements to the detriment of the Middle and Lower Chattahoochee River communities and MWV. Contributions from the Flint River should provide no basis to reduce flows in the Middle and Lower Chattahoochee River below levels necessary to support authorized project purposes, as well as the needs of MWV and other industrial and municipal water users in that area of the river.

As noted below, the primary purposes of the ACF reservoirs include hydropower, navigation, flood control, recreation, and so on. Those purposes have no meaning except in the context of the communities served by the ACF River System. Most of those communities are located at various points along the Chattahoochee River. The Corps’ ability to fulfill the reservoirs’ purposes for the benefit of the communities located along the river from Dothan, Alabama to Gainesville, Georgia, depends exclusively on conditions in the Chattahoochee River. The Flint River has absolutely no effect at any point on the Chattahoochee River above the influence of the Jim Woodruff Dam. MWV agrees with TRWDA that because Flint River

conditions are independent from Chattahoochee River conditions, there is no logical basis to alter operations at Chattahoochee River projects to the detriment of Middle and Lower Chattahoochee River stakeholders in response to conditions in the Flint River Basin.

### **3. The Corps Must Operate the ACF Projects for Their Authorized Purposes.**

#### **a. The Corps Must Acknowledge the Statutory Authorized Purposes for the ACF Reservoirs.**

As TRWDA points out, several statutes provide authority for the Corps' initial construction and subsequent operation of the ACF reservoirs. Any revision to the water control manual for the ACF River System must comply with those laws as well as the Corps' regulations. As TRWDA states, the reservoirs' primary authorized purposes are as follows:

- **Lake Lanier: Hydropower, downstream navigation, and flood control.** Sources: Pub. L. No. 79-525, 60 Stat. 634, 635 (1946) (referencing H.R. Doc. 80-300 (1946)).
- **West Point: Flood control, hydropower, fish and wildlife recreation, general recreation, and navigation.** Sources: Pub. L. No. 87-874, 76 Stat. 1173, 1180, (1962) (referencing H.R. Doc. No. 87-570 (1962)).
- **Walter F. George: Navigation and hydropower.** Sources: Pub. L. No. 79-14, 59 Stat. 10, 11, 17 (1945) (referencing H.R. Doc. No. 76-342 (1939)); Pub. L. No. 79-525 (referencing H.R. Doc. 80-300); Resolution of House Public Works Committee (May 19, 1953).
- **George W. Andrews: Navigation.** Sources: Pub. L. No. 79-14; Pub. L. No. 79-525; Resolution of House Public Works Committee (May 19, 1953).
- **Jim Woodruff: Navigation and hydropower.** Sources: Pub. L. No. 79-14; Pub. L. No. 79-525.

The laws cited above are the primary sources of the Corps' authority with respect to the ACF reservoirs. They provide the legal basis pursuant to which the Corps operates the ACF reservoirs. To demonstrate compliance with applicable laws and authorities, MWV urges the Corps to provide a clear explanation of the primary authorized purposes for each reservoir in the revised manual and in the environmental documentation, and to operate the reservoirs for those purposes.

#### **b. The Federal Action Is Reservoir Operation for Authorized Purposes.**

Like TRWDA, MWV urges the Corps to include in its environmental documentation a clear explanation of the federal "action" which the Corps is evaluating for purposes of the

National Environmental Policy Act. That action should be defined as the operation of ACF reservoirs according to their authorized purposes.

Events leading to the development of the Interim Operations Plan (“IOP”) and Revised Interim Operations Plan (“RIOP”) illustrate our concerns. Like TRWDA, in our view, the Corps never clearly defined the action which was the subject of a consultation with the U.S. Fish and Wildlife Service (“FWS”) under the Endangered Species Act (“ESA”). Under ESA Section 7(a)(2), federal agencies are required to consult with FWS to insure a proposed action does not (1) jeopardize the continued existence of a listed species or (2) destroy or adversely modify designated critical habitat. 16 U.S.C. § 1536(a)(2). If the action would cause jeopardy or adverse critical habitat modification, FWS is authorized to propose reasonable and prudent alternatives and reasonable and prudent measures. However, in this case, the federal action constituting the basis for consultation was never clearly defined. Rather than presenting to FWS its standard operating procedures under the authorizing statutes, the Corps entered into open-ended negotiations with FWS and developed what amounts to a freestanding conservation agreement for the Apalachicola River only. The resulting RIOP now inappropriately drives operations for the rest of the system.

MWV urges the Corps not to repeat that model as it revises the manual. The Corps should begin by setting forth a set of operations that fulfills the authorized purposes of the reservoirs, according to the primary legal authorities. To the extent manual revisions allow for alternative operations – such as operations to serve secondary project purposes or to comply with the ESA and other federal laws – the Corps should allow such alternatives only on the following terms:

- (1) Any alternative that differs from optimal operation of the reservoirs for primary authorized purposes should be clearly identified as such.
- (2) The need and/or legal basis to deviate from operation of the reservoirs for optimal fulfillment of the primary authorized purposes should be clearly explained.
- (3) The Corps should clearly explain applicable limitations on any deviation from operations for primary project purposes, such as a time limit and the circumstances under which the Corps will restore primary operating parameters.

**c. Revisions to the Manual Must Recognize Navigation as a Primary Project Purpose and Reflect Statutory Intent to Support Downstream Communities.**

A primary purpose of all the ACF reservoirs is to support navigation. Navigation on the Chattahoochee and Apalachicola Rivers is obviously limited, as it always has been, to points between the Gulf of Mexico and the fall line at Columbus, Georgia. Most of the ACF projects also support hydropower; however, the lowermost hydropower facility (Woodruff) is a run-of-river project with no storage capacity, as is Andrews, the nearest upstream reservoir. If navigation is (and has been) limited to points below the fall line, and the hydropower project

farthest downstream is run-of-river, MWV agrees with TRWDA that the inevitable conclusion is that Congress intended for the Corps to operate the upstream storage reservoirs, and especially the reservoir with the most storage capacity, substantially for purposes that would be realized in the lower regions of the ACF Basin. Any revisions to the manual must be consistent with that clear demonstration of Congressional intent.

MWV is aware of the steep reduction in commercial navigation which has impacted the ACF River System in recent years. However, changes in usage in recent years do not alleviate the Corps of its statutory obligation to support navigation as it revises the water control manual. The critical limitation on navigation is the lack of proper maintenance of a few small stretches of the Apalachicola River, which blocks access from the Chattahoochee and Flint Rivers to the Gulf of Mexico. However, channel maintenance is the Corps' responsibility under federal law. Thus, the primary hindrance to navigation in the ACF system is the Corps' failure to maintain it. The Corps must not and cannot lawfully use its own failure to perform its statutory obligations to maintain the Apalachicola River for navigation as a basis to unilaterally reorder the project purposes without Congressional approval.

To justify its failure to maintain the channel, the Corps has cited a decision of the Florida Department of Environmental Protection ("FDEP") in 2005 to deny certain environmental authorizations for the Corps' channel maintenance activities. Like TRWDA, MWV remains concerned that the Corps would so easily place itself in a subservient position to a state and allow a state agency to control federal activities. Nevertheless, MWV shares the concerns of FDEP and environmental groups with respect to the environmental impacts of certain dredging and disposal practices of the past. However, MWV is convinced there are solutions for the Corps to resume channel maintenance activities in a manner acceptable to FDEP and all affected parties, if only the Corps will once again actively pursue FDEP authorization.

Aside from MWV's interest in navigation, we believe the Corps' provision of flow sufficient to support navigation will meet other purposes and legal requirements. Such flows will support industrial and municipal requirements, which were discussed further in Section 2 above. In addition, flows in the Chattahoochee River sufficient to support navigation will be beneficial to the natural resources of the Apalachicola River and Apalachicola Bay. While a minimum flow of 5,000 cfs has been established for the benefit of certain species protected under the ESA, it is the position of Apalachicola Bay and River Keeper and the Franklin County Seafood Workers that those minimum flows do not adequately protect the Bay and its other resources, including commercial fisheries and other ecological resources, on a sustained basis. Like TRWDA, MWV believes that flows sufficient to meet Middle and Lower Chattahoochee requirements would increase the frequency of instances when flows below Woodruff exceed 5,000 cfs, particularly when combined with contributions from the Flint River.

**d. Water Supply Is Not an Authorized Purpose of Lake Lanier.**

As noted above, the primary purposes of Lake Lanier are hydropower, flood control, and support of downstream navigation. According to the Corps' report as reprinted in House Document 300, the provision of hydropower and downstream navigation on a cost-effective basis . . .

. . . cannot be secured by the plants below Columbus proposed herein unless a considerable storage be provided upstream to increase the minimum regulated flow and the firm capacities at those plants; without such upstream storage, the development would not be economically justified. The best development for that purpose is that at Buford proposed herein.

H.R. Doc. No. 80-300 at 39 (1946) (emphasis added). In other words, the Buford project was necessary to support navigation and hydropower production below the fall line, and was constructed for the purpose of maintaining minimum flows sufficient to support hydropower and downstream navigation. Congress approved House Document 300 and authorized the Buford project on that basis. Pub. L. No. 79-525, 60 Stat. 634, 635 (1946)).

Congress anticipated that Lake Lanier and the other reservoirs would likely serve other purposes as well, including water supply. House Document 300 states that releases from Buford should be sufficient “so as to insure at all times a flow of Atlanta not less than 650 second-feet.” H.R. Doc. No. 80-300 at 34 (1946). That flow level was deemed necessary “to meet the estimated present needs of the city, and to prevent damage to fish, riparian owners, and other interests by complete shutdowns” during off-peak hydropower production times. *Id.* (emphasis added). However, by addressing only the “present” needs of the city, House Document 300 clearly signaled to Atlanta more than 50 years ago that Lake Lanier would not indefinitely provide ever-increasing supplies of water for local consumption. To the contrary, use of Lake Lanier for water supply was authorized only to the extent consistent with the primary project purposes. Again, according to House Document 300, Lake Lanier “would ensure an adequate municipal and industrial water supply for the Atlanta area, would produce large benefits in the way of recreation, fish and wildlife conservation, and similar matters,” but only “[i]ncidentally” to the service of the reservoir’s primary purposes. *Id.* at 39 (emphasis added).

Section 301 of the federal Water Supply Act of 1958 also requires the Corps to provide water for local consumption only to the extent possible without compromising the primary authorized purposes. Pub. L. No. 85-500, Title III, § 301, 72 Stat. 297, 319-20 (1958), *codified as amended* at 43 U.S.C. § 390b. According to that statute:

Modifications of a reservoir project . . . to include storage . . . which would seriously affect the purposes for which the project was authorized, surveyed, planned, or constructed, or which would involve major structural or operational changes shall be made only upon the approval of Congress as now provided by law.

43 U.S.C. § 390b(d) (emphasis added). The Corps has long interpreted Section 301 to limit allocation of storage for water supply to the lesser of 15% of a project’s total storage or 50,000 acre-feet. ER 1105-2-100, ¶ 3.8.b(5). That is an accurate reflection of longstanding federal policy to view water supply as primarily a local, not federal, responsibility.

Circumstances in North Georgia have changed dramatically since the 1940s and 1950s. Atlanta and its surrounding communities consume more water than they used to, and they clearly want to consume even more in the future. Further, a local economy based on recreation and

waterfront property values has developed around Lake Lanier. Like TRWDA, MWV understands and appreciates the difficulties created when water quantity in Lake Lanier is insufficient to fully serve those ancillary purposes. However, while circumstances in the Atlanta area may have changed, the legal principles governing operation of Lake Lanier have not. The fact that upstream communities have become dependent on the federal resource is certainly problematic in times of water shortages, but the Corps still cannot lawfully address local shortages by allowing unauthorized diversions from Lake Lanier, thus creating further problems downstream.

Federal law allows local communities to contribute to the construction of Corps reservoirs and essentially reserve a portion of the project's storage for local consumption. At the time of construction of Buford Dam, the Corps was authorized to accept funds from states and their political subdivisions toward the construction of authorized flood control projects in order to "provide additional storage capacity for domestic water supply or other conservation storage," as long as "local agencies" incurred the increase in cost and agreed to "utilize such additional storage capacity in a manner consistent with Federal uses and purposes." Pub. L. No. 75-208, 50 Stat. 515, 518 (1937), *codified as amended at* 33 U.S.C. § 701h. State and local interests might have taken steps then which would have eased the current difficulties to some extent. However, local authorities in Atlanta did not avail themselves of that opportunity. The sprawling development that has emerged in North Georgia since that time has done nothing to change the longstanding legal principles governing Lake Lanier and the other ACF reservoirs. Only Congress can do that.

While the area surrounding Lake Lanier has indeed changed over the years, so have downstream communities and industries. While Lake Lanier and the metro Atlanta area have created a situation where they are now depending on the Corps to abandon the federal reservoir system's primary authorized purposes in order to support local growth and recreation, downstream users are depending on the Corps' continued maintenance of the system's primary authorized purposes, which would allow for their instream flow needs to be met, provide water supply and wastewater assimilation for both domestic and industrial water users, and protect the region's aquatic ecology. The Corps cannot and should not place the Atlanta area's desire for changes in the use and operation of these federal projects above downstream users' reasonable expectations that the Corps will comply with the federal laws establishing the primary purposes of these projects.

#### **4. Maintenance of FERC Flows in Accordance with Current IOP and RIOP.**

It is of critical importance to MWV that the Corps maintain FERC-approved flows of 800 cfs minimum, 1350 cfs daily average and 1850 cfs weekly average. Despite the fact that these flows are required in the current IOP and RIOP, they are not being maintained consistently. The IOP states that these flows will be maintained as long as West Point reservoir exceeds an elevation of 621.6 feet. As the Columbus Water Works points out in its comments, although West Point exceeded this level all summer, since June 24, 2008, instream flows have fallen short of this required weekly average approximately 60% of the time and have fallen short of the daily average approximately 10% of the time.

Col. Byron Jorns  
November 21, 2008  
Page 9

**5. Interim Operation of ACF System Must Conform to IOP and RIOP.**

MWV is concerned that the Corps' failure to following the current IOP and RIOP provides clear evidence that the Corps has already determined what changes it wishes to make to the operating procedures within the ACF River System without completing the required EIS. Pursuant to NEPA, the Corps must show that the EIS informed its decision-making process, rather than simply using the EIS to justify a decision already made. 40 C.F.R. § 1502.5.

Additionally, the courts have held that a NEPA review must occur before an agency action was decided upon. The Ninth Circuit noted in Cady v. Morton, 527 F.2d 786 (9<sup>th</sup> Cir. 1975): "That the filing of an EIS should precede rather than follow federal agency action has been consistently recognized by the courts." Cady at 794. The purpose of the review under NEPA is to provide "decisionmakers with an environmental disclosure sufficiently detailed to aid in the substantive decision whether to proceed with the project in light of the environmental consequences." Methow Valley Citizens Council v. Regional Forester, 833 F.2d 810 (9<sup>th</sup> Cir. 1987); see also Save Barton Creek Ass'n v. FHWA, 950 F.2d 1129, 1137 (5<sup>th</sup> Cir. 1992) (the purpose of NEPA is to inform the agency making the decision).

The Corps must be careful to avoid any preconceptions or arrive at any decisions before it has completed and issued the EIS updating its criteria and guidelines for managing water in the ACF River System.

Whenever an agency decision to act precedes issuance of its impact statement, the danger arises that consideration of the environmental factors will be *pro forma* and that the statement will represent a *post hoc* rationalization of that decision. NEPA was intended to incorporate environmental factors and variables into the decisional calculus at each stage of the process.

Sierra Club v. Lynn, 502 F.2d 43, 59-60 (5<sup>th</sup> Cir. 1974). MWV is concerned that the Corps' failure to abide by the current IOP by failing to maintain the minimum flows specified at West Point indicates that the Corps has already determined what action it wishes to take (giving priority to non-authorized purposes at the expense of navigation and hydropower production) and is simply performing the EIS to justify that decision.

Thank you again for this opportunity to comment. Please feel free to contact me at (334) 855-5233 if you have any questions.

Sincerely,

Tony D. Owens  
Environmental Manager



December 29, 2009

Tetra Tech, Inc.  
107 Saint Francis Street  
Suite 1403  
Mobile AL 36602-9986

Re: Notice of Intent to Revise Scope of Draft Environmental Impact Statement for Updating the Water Control Manuals for the Apalachicola-Chattahoochee-Flint River Basin To Account for Federal District Court Ruling

Dear Sir or Madam:

The purpose of an environmental impact statement as presented in the Council for Environmental Quality's regulations (40CFR § 1502.1) is to "provide full and fair discussion of significant environmental impacts and shall inform decisionmakers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment". In order to provide the public, state leaders and Congress with full information, we recommend the following items for inclusion in the EIS.

The Corps should provide a full assessment of the environmental, social and economic impacts of the proposed revision.

The Corps should conduct an assessment of the impacts to the human and natural environment from cutting off the water supply to over three million people and 600,000 businesses that are solely dependent on the Chattahoochee River and Lake Lanier for water supply. The issue of water supply for metro Atlanta has been studied by the Corps in the 70s, 80s, and 90s and a review of the record will show that even the Corps concluded that there is no reasonable replacement water source available to metro Atlanta. Work by ARC and the Metro Water Planning District continues to confirm that fact. Any assessment by the Corps should also include the water quality impacts of changing or reducing river flows used to assimilate the 325 million gallons per day of permitted treated sewage discharged to the Chattahoochee River. We believe that the environmental, social and economic impacts of the revision alternative will be devastating to the region and the nation. A full assessment of this "draconian" alternative by the federal government is essential.

The Corps should provide an assessment of all reasonable alternatives to the proposed action.

The following alternatives should be included in the Corps' analysis to fully inform the public and the Congress: 1) continued operation at current water supply levels and 2) operation at the 2035 water supply levels contained in the Water Supply and Water Conservation Plan adopted by the Metropolitan North Georgia Water Planning District. A copy of this plan is enclosed along with the

District's Wastewater and Watershed Plans. These alternatives along with the Corps' proposed revision alternative will provide a reasonable range of alternatives to include in the EIS.

The Corps' hands are not tied by Judge Magnuson's order or by any other limitations on its current authority, to look at reasonable alternatives. NEPA requires all federal agencies to "[r]igorously explore and objectively evaluate all reasonable alternatives" to the proposed action, including alternatives that are "not within the jurisdiction of the lead agency." 40 C.F.R. § 1502.14. Thus, NEPA mandates that the Corps consider "all reasonable alternatives," even if they exceed the Corps' current authority. *See, e.g., Natural Resources Defense Council v. Morton*, 458 F.2d 827, 837 (D.C. Cir. 1972) ("The mere fact that an alternative requires legislative implementation does not automatically establish it as beyond the domain of what is required for discussion, particularly since NEPA was intended to provide a basis for consideration and choice by the decisionmakers in the legislative as well as the executive branch.").

The Corps should consider mitigation measures that are not already included in the proposed action or alternative

The Corps needs to consider mitigation measures to mitigate the catastrophic environmental and economic impact of the operational alternative defined in the November 19, 2009 Federal Register. For example, increasing the level of Lake Lanier to offset the lake withdrawals and alternative operations that provide peaking power in the system coincidental with water supply needs downstream of Buford should be looked at as mitigation measures.

We appreciate the difficult task the Corps of Engineers has in managing water resources of the Apalachicola-Chattahoochee-Flint River system. We look to the Corps as the most knowledgeable federal agency on the capabilities of the system and depend on the professional leadership of the Corps to provide full information on the impacts of the revised alternative and an assessment of reasonable alternatives and mitigation measures.

Thank you for the opportunity to comment.

Sincerely,



Kit Dunlap, Chair

Enclosures

Cc: Metro Water District Board  
Georgia Congressional Delegation  
Allen Barnes, GAEPD  
Governor Sonny Purdue  
Lieutenant Governor Casey Cagle

Wastewater Management Plan—May 2009  
<http://www.northgeorgiawater.com/html/87.htm>

Water Supply and Water Conservation  
Management Plan—May 2009  
<http://www.northgeorgiawater.com/html/88.htm>

Watershed Management Plan—May 2009  
<http://www.northgeorgiawater.com/html/253.htm>



## United States Department of the Interior

National Park Service  
Chattahoochee River  
National Recreation Area  
1978 Island Ford Parkway  
Sandy Springs, GA 30350



IN REPLY REFER TO:

The National Park Service (NPS) and Chattahoochee River National Recreation Area (CRNRA) would like to submit the following comments on the planned update to the U.S. Army Corps of Engineers Water Control Manual for Buford Dam.

CRNRA was established in 1978 when Congress determined that the “natural, scenic, recreation, historic, and other values of a 48-mile segment of the Chattahoochee River ... are of special national significance, and that such values should be preserved and protected from developments and uses which would substantially impair or destroy them.” CRNRA consists of 48 miles of river and a series of 16 land-based park units located between Buford Dam and Peachtree Creek, just north of Atlanta, Georgia. The park provides approximately three-quarters of the public green space in the greater Atlanta area, and provides outdoor recreation activities for over three million visitors per year. The Chattahoochee River forms the backbone of the park, and CRNRA has a vested interest in the operations of Buford Dam, as the timing of water releases and related flows in the river directly impact the ability of the park to support the ecological, recreational, and cultural purposes mandated by Congress. Our comments focus on these three purposes and highlight specific issues that should be evaluated and considered in the EIS/Water Control Manual update.

### Ecological Issues

The Chattahoochee River supports many species of fish, including both rainbow and brown trout. Several past scientific studies examined the effects of varying flow regimes on fish species. One study on trout reproductive success (Nestler, 1985) was completed by the USACE during an evaluation of a proposed reregulation dam at river mile 342. This report found that rainbow and brown trout habitat was optimal at flows of 1000 - 1500 cfs. A more recent report by Peterson and Craven (2007) stated that “discharge characteristics affected riverine fishes recruitment ... during both spawning and rearing periods.” During the spring spawning period, the study found that higher discharges (> 3500 cfs) positively influenced reproductive success and concluded that reproductive success could be increased if suitable discharges were maintained during critical time periods. However, the report also found that high flow pulses that do not mimic natural seasonal precipitation events have substantial negative influence on fish species, particularly during the summer rearing period. The high velocity of currents created by the pulses of water is detrimental to the survival of juvenile and young of year fishes because of the increased metabolic rate associated with swimming in these currents.

Water releases from Buford Dam play an important role in supporting water quality within CRNRA for a number of parameters, including temperature, dissolved oxygen, bacterial levels, and turbidity. If the current target minimum flow of 750 cfs at Peachtree Creek is abandoned, there would be significant effects on water quality within CRNRA. As noted in



background materials provided by the USACE, Buford Dam has been managed to release up to 1500 cfs to meet water supply needs and downstream water quality standards. If flows are reduced to a 600 cfs standard release level, water quality would deteriorate and flows within CRNRA would at times be dramatically reduced due to municipal water withdrawals and/or drought conditions. It has been documented by CRNRA and the USGS that flows at the Roswell gage above Morgan Falls Dam have reached extremely low levels (450-500 cfs) periodically over the past few years, even as the 750 cfs minimum flow requirement at Peachtree Creek has been maintained. Our concern is that a default release of 600cfs would not be enough to support water quality and ecological needs throughout CRNRA.

Currently, over half of the 48-mile CRNRA is 303d-listed for not meeting fecal coliform standards under the state designation as a recreational water body. A USGS study in 1995-96 showed that the density of fecal coliform bacteria — the recognized indicator bacteria in Georgia — regularly exceeds the U.S. Environmental Protection Agency guidelines for recreational waters. Because of the large number of people who use the river for water-based recreation and the historically high levels of indicator bacteria in the Chattahoochee River, the U.S. Geological Survey (USGS), in partnership with several federal, state, and local agencies, began the BacteriALERT monitoring program in October 2000. The BacteriALERT program has now been in operation for almost a decade and has documented widespread variability in water quality within the Chattahoochee River, with bacterial spikes occurring during rain events when the proportion of surface water to dam releases is highest. These results highlight the importance of releases from Buford in maintaining water quality in CRNRA.

Another source of water quality concern is the increasing number and capacity of wastewater treatment plants operating within the boundaries of CRNRA. Three wastewater facilities currently exist and a third (Forsyth County Shakerag WTP) is being planned for the near future. These plants have used historic flow regimes to model the assimilation of wastewater discharge into the river. If a baseline release level of 600 cfs is adopted, there would be an immediate change in the impact of wastewater on water quality in the river, and past studies on the assimilative capacity of the river would be invalidated. The EIS should evaluate the immediate result of reduced flows related to wastewater assimilation.

There are also significant physical impacts related to scheduled discharges from Buford Dam. Historically, naturally-occurring water level fluctuations within the Chattahoochee have been relatively slow and gradual. Conversely, the artificial conditions created by water releases dictated by peak power demands have resulted in abrupt changes that drastically alter conditions in the river within hours. Releases from Buford Dam have led to severe bank erosion, not only along the main stem of the Chattahoochee but also at all of the stream confluences due to backwash effects. The EIS should consider the impact of periodic high flow conditions on river and tributary banks and related increases in siltation. Siltation is a big concern for the park, as it leads to long-term habitat alterations that may negatively impact aquatic species. In particular, the EIS should evaluate the impact of dam operations on organisms that benefit from a gravel or rocky substrate, including trout, shoal bass, mussels, and macroinvertebrates. The NPS Southeast Region fisheries biologist noted the deleterious effect of accumulated silt on shoal bass and their habitat within the Chattahoochee River above Morgan Falls Dam. In addition,

increasing sediment in Bull Sluice Lake has created a shallow water body optimal for the growth of exotic aquatic plant species.

### **Recreational Issues**

Recreation and navigational uses of the river benefit from moderate and more consistent flows. According to a Recreation Flow Preference Report completed by CH2MHILL in 2000, the preferred recreation flows for wade / float fishing, rowing and power boating is between 1,000 to 1,200 cfs. This report further documented that the ideal recreational flow of 1000 – 1200 cfs was available less than 1 percent of the time during the summers of 1997 and 2000 (period studied). The Nestler report (1985) identified optimal canoeing conditions for all user levels as occurring between 1250 cfs – 7000 cfs. Both of these studies provide strong support for baseline flows above 1000 cfs as being crucial to support the recreational uses envisioned by Congress when the CRNRA was established.

CRNRA is also concerned that minimum flows in the river will be inadequate for weekend recreational use if discharge schedules do not allow for increased flows on weekends. The proposed minimum flow of 600 cfs is not ideal for any recreational uses of the Chattahoochee River, and if implemented will have a negative effect on recreational and navigational uses of the river. Additionally, low flows restrict the ability of law enforcement and emergency personnel to utilize the river for patrol and rescue operations. As previously mentioned, CRNRA staff has also noted increased exotic vegetation in Bull Sluice Lake under low flow conditions, which serve as a further impediment to recreational and navigational uses of this portion of CRNRA.

### **Cultural Resource Issues**

Cultural resources within the CRNRA are similarly impacted by water releases from Buford Dam. The Ivy Mill ruins in Roswell date back to the 1830's and are on the National Register of Historic Places. Ivy Mill is prone to flooding during protracted high water releases from Buford dam, which has contributed to site degradation. In addition to Ivy Mill, the NPS has documented dozens of archaeological sites within the CRNRA, many of which occur adjacent to the Chattahoochee River and its tributaries. These archaeological sites are at high risk of damage from accelerated erosion due to the bank-scouring effects caused by fluctuating releases from Buford Dam. A number of historic fish weirs within the CRNRA are also threatened or lost due to siltation, erosion and flooding related to the current water regime (Gerdes and Messer, 2007). The EIS should consider the impacts of rapidly fluctuating water levels to archeological and historic sites within CRNRA.

In summary, the national importance of the Chattahoochee River corridor as an ecological, recreational, and historic resource has been established by its inclusion in the National Park system. In order to ensure park resources are “preserved and protected from developments and uses which would substantially impair or destroy them,” the NPS would like to work cooperatively with the USACE to manage flows within the Chattahoochee River. The preservation of base flows in the Chattahoochee for ecological and recreational purposes is critical. The NPS would like to see a minimum flow in the River established at no less than 1000

cfs to ensure that both ecological and recreational uses of the river are preserved. In addition, the NPS would encourage the USACE to evaluate the possibility of establishing a flow standard within the central reach of the park (i.e., at the Norcross or Roswell gage) to ensure that water quality and minimum flows are preserved throughout the recreation area. Finally, the USACE should consider modifying the release schedule from Buford Dam to allow for more gradual increases and decreases in water levels to mitigate the effects of sudden and dramatic changes in river levels. As the USACE prepares the EIS and updated Water Control Manual, the NPS requests that NPS input and impacts to CRNRA be fully evaluated and considered.

Sincerely,

A handwritten signature in black ink, reading "Daniel R. Brown". The signature is written in a cursive, flowing style with a large initial "D".

Daniel R. Brown  
Superintendent

**Southern Nuclear  
Operating Company, Inc.**  
P. O. Box 1295  
Birmingham, Alabama 35201-1295  
Tel 205.992.5000



December 31, 2009

**VIA ELECTRONIC SUBMISSION AT**

**[http://www.sam.usace.army.mil/pa/acf-wcm/mail\\_list.htm](http://www.sam.usace.army.mil/pa/acf-wcm/mail_list.htm)**

Col. Byron Jorns, District Engineer  
Mobile District, U.S. Army Corps of Engineers  
c/o Tetra Tech, Inc.  
107 Saint Francis Street, Suite 1403  
Mobile, Alabama 36602-9986

**Re: Notice of Intent to Revise Scope of Draft EIS for Updating ACF River Basin Water Control Manuals**

Dear Colonel Jorns:

The U.S. Army Corps of Engineers ("Corps") has solicited public comments regarding its decision to revise the scope of issues it will consider in the preparation of an Environmental Impact Statement ("EIS") as the Corps updates its water control plans and manuals for the Apalachicola-Chattahoochee-Flint ("ACF") River Basin. 74 Fed. Reg. 59,965 (Nov. 19, 2009). This letter provides the comments of the Southern Nuclear Operating Company ("Southern Nuclear").<sup>1</sup>

The Corps' November 19, 2009, *Federal Register* notice provides that the Corps is updating the water control plans and manuals for the ACF River Basin. According to the Corps:

This effort will include an updated Master Water Control Manual, containing plans for the coordinated operation of the five Federal reservoirs within the ACF

<sup>1</sup> The Corps' November 19, 2009, Federal Register notice provides that "Any comments previously submitted will be reviewed and addressed in any scoping revisions. There is no need to resubmit comments previously provided during the 2008 scoping effort . . . ." 74 Fed. Reg. at 59,966. On this basis, Southern Nuclear will not restate its comments provided in its November 21, 2008, submission to the Corps. Southern Nuclear's comments today are intended to incorporate and supplement those earlier comments based on the Corps' proposed revision of the scope of its draft EIS. A copy of Southern Nuclear's earlier comments is attached for ready reference.

**December 31, 2009****Page 2**

basin as a system, and updated Water Control Manuals for each of those reservoirs, containing plans for the operation of those projects for their authorized purposes. Collectively, these documents may be referred to as the “water control plans and manuals,” “water control manuals,” or simply as the “Master Water Control Manual,” which includes the project-specific water control manuals.

*Id.* at 59,966.

The Corps’ notice further explains that the Corps will revise the scope of its EIS and water control manual updates in three key respects in light of Judge Magnuson’s July 17, 2009, memorandum and order in the case *In re: Tri-State Water Rights Litigation* (M.D. Fla. No. 3:07-md-01): (1) In updating the ACF water control plans and manuals, the Corps will consider only operations that are within existing authority; (2) The updated plans and manuals will reflect that water supply withdrawals from Lake Lanier will be limited to the amounts authorized by relocation agreements with the Cities of Gainesville and Buford, Georgia; and (3) The updated plans and manuals will reflect that “the required offpeak flow will be 600 cfs [at Buford Dam].”

Southern Nuclear agrees with the Corps’ decision to revise the scope of its EIS and the issues it will consider in revising the ACF water control plans and manuals to include only operations within the Corps’ existing authority. As Judge Magnuson’s July 17, 2009, memorandum and order recognizes, navigation was one of the primary congressionally authorized purposes of Lake Lanier and the ACF River Basin system. The Corps’ revised water control plans and manuals, in order to be consistent with Judge Magnuson’s July 17, 2009, order, must also provide for both releases of storage to support navigation and the proper operation and maintenance of the navigation channel.

Southern Nuclear reiterates the importance of the Corps providing navigation support for businesses and industries on the Chattahoochee River, both for transportation purposes and for meeting their water elevation and flow needs. Flows of 2,000 cfs and a river stage of 76 feet mean sea level are critical for the continued safe and reliable operation of manufacturing facilities in the vicinity of Columbia, Alabama, as well as Southern Nuclear’s Farley Nuclear Plant. Therefore, Southern Nuclear urges the Corps to ensure the scope of its EIS fully evaluates the need for the Corps to provide for the continuation of flows and elevations at those levels.

The Corps’ November 19, 2009, notice also states that the Corps intends to include “action zones,” like those included in its draft 1989 Water Control Plan, in any revised water control plans and manuals. Southern Nuclear has no objection to the use of “action zones” as long as those zones adequately provide for the ACF system’s flood control, navigation, and hydropower authorized purposes. Consistent with Judge Magnuson’s July 17, 2009, memorandum and order, other unauthorized purposes, including water supply and recreation, may not be factored into the Corps’ formulation of action zones. Drought contingency operations factored into the development of action zones must also not unduly burden West Point Lake and Walter F. George Lake in favor of excess conservation upstream in Lake Lanier.

The Corps’ notice further states that “[w]hen the Corps is not generating hydropower to meet this peak demand, the Corps will not release more than 600 cfs from Buford Dam to support water

December 31, 2009

Page 3

supply withdrawals.” Fed. Reg. at 59,967. Southern Nuclear urges the Corps to clarify that it still has an obligation to release additional water from Lake Lanier’s storage during off-peak periods when necessary to meet navigation flow support needs downstream. Nothing in the legislative history of Lake Lanier or the ACF system in general indicates that navigation support was intended to be subordinate to hydropower production. Rather, hydropower and navigation support are co-equal authorized functions of the ACF reservoir system; therefore, they must each be given adequate support by the Corps. As the Corps’ original 1959 reservoir regulation manual for Buford Dam recognizes, “[a] storage of 1,049,400 acre-feet between elevations 1,035 and 1,070 [at Buford Dam] has been allocated for power *and low-water flow regulation*.” Apalachicola River Basin, Reservoir Regulation Manual, Buford Reservoir at B-13, ¶ 29 (Dec. 1959). (emphasis added). For this reason, as the Corps’ 1991 Buford Dam water control plan states, maintaining the navigation channel sometimes requires “releases from storage in upstream reservoirs *considerably in excess of the flow requirements to meet power contract commitments*.” Apalachicola River Basin, Reservoir Regulation Manual, Buford Reservoir at B7-1, ¶ 7-01 (Feb. 1991) (emphasis added). We urge the Corps to include this requirement in the scope of its EIS and in any revisions of the water control plans and manuals for the ACF Basin.

Thank you for your consideration of these comments. Should you have any questions or if you wish to receive additional information, please contact me at (205) 992-5807 or [tcmoorer@southernco.com](mailto:tcmoorer@southernco.com).

Sincerely,

A handwritten signature in dark ink, appearing to read "Tom Moorer".

Tom Moorer  
Environmental Affairs Manager

Southern Nuclear  
Operating Company, Inc.  
42 Riverchase Center Parkway  
Birmingham, Alabama 35242

0047



November 21, 2008

VIA E-MAIL TO [COMMENTS@ACF-WCM.COM](mailto:COMMENTS@ACF-WCM.COM)

Col. Byron Jorns, District Engineer  
Mobile District, U.S. Army Corps of Engineers  
107 Saint Francis Street, Suite 1403  
Mobile, Alabama 36602-9986

Re: Scoping Comments – Water Control Manual for the Apalachicola-Chattahoochee-  
Flint River Basin

Dear Colonel Jorns:

The U.S. Army Corps of Engineers ("Corps") has solicited public comments regarding the scope of issues to consider as the Corps updates its water control manual for the Apalachicola-Chattahoochee-Flint ("ACF") River Basin. 73 Fed. Reg. 54,391 (Sept. 19, 2008). This letter provides the comments of the Southern Nuclear Operating Company ("Southern Nuclear").

Southern Nuclear operates the Farley Nuclear Plant ("Plant Farley"), located on the Chattahoochee River near Dothan, Alabama, which provides 19% of the total electricity generation for Alabama Power Company. Plant Farley relies on adequate elevations and flows in the Chattahoochee River for cooling water and discharge assimilation. From time to time, it is necessary to transport oversized equipment to and from Plant Farley by barge. Accordingly, Southern Nuclear has a significant interest in the Corps' management of its reservoirs in the ACF River Basin.

As the Corps revises its ACF water control manual, it is the position of Southern Nuclear that the Corps must ensure: (1) minimum flows of 2,000 cubic feet per second ("cfs") in the Chattahoochee River at Columbia, Alabama; (2) support of navigation on the Apalachicola and Chattahoochee Rivers; and (3) operation of the Corps' ACF reservoirs for their Congressionally authorized purposes. Each of these issues is explained more fully below.

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November 21, 2008  
Page 2

**The Corps must provide 2,000 cfs minimum flow at Columbia, Alabama.**

Southern Nuclear defines a flow of 2,000 cfs and river elevation of 74.5 feet mean sea level ("ft MSL") as the minimum conditions necessary for long-term operation of Plant Farley. While Plant Farley can operate for short periods (a few days) with flow below 2,000 cfs, extended operation at lower flow would require detailed evaluation to determine the potential environmental and operational impacts. Generally, Plant Farley operates with a river elevation between 76 and 78 ft MSL. Operation below 74.5 ft MSL also would require detailed evaluation to determine the potential environmental and operational impacts. Other industrial facilities on the Chattahoochee River, including those of MeadWestvaco and Georgia Pacific, also require the same conditions to meet their applicable water quality standards.

Plant Farley's discharge is limited by a National Pollutant Discharge Elimination System Permit issued by the Alabama Department of Environmental Management. That permit contains limits and requirements to ensure the thermal discharge and chemical constituents in the effluent meet applicable water quality standards. At 2,000 cfs flowing past Plant Farley (*i.e.*, going through Andrews Lock and Dam), there are no significant adverse thermal or chemical impacts resulting from Plant Farley's discharge. Plant Farley also discharges small quantities of radioactive waste through the discharge line in strict compliance with regulations of the Nuclear Regulatory Commission ("NRC"). When flows are reduced below 2,000 cfs for extended periods, an evaluation of the impacts of that discharge is required by Southern Nuclear, state environmental agencies, and, potentially, the NRC.

The Final Environmental Impact Statement ("FEIS") of the Atomic Energy Commission for construction of Plant Farley at that site discussed the fact that the Corps would generally maintain an elevation of 76 ft MSL and flow of 2,000 cfs. FEIS Related to Construction of Joseph M. Farley Nuclear Plant Units 1 & 2, Alabama Power Company, II - 20 (June 1972). Thus, regulatory approval of the Plant Farley site was based on an assumption that the Corps would continue to maintain those parameters.

The States of Alabama, Florida, and Georgia considered Plant Farley's requirements and those of other facilities on the Chattahoochee River during the interstate compact negotiations concerning a proposed Allocation Formula for the ACF River Basin. The three states signed a Memorandum of Agreement providing for a minimum daily flow of 2,000 cfs below George W. Andrews Lock and Dam, just above Plant Farley.

The Corps has also recognized the need for flow of 2,000 cfs at Columbia, Alabama. For example, the Walter F. George Reservoir Regulation Manual specifically recognizes that Plant Farley and other industries require adequate flows and elevations for their operations and downstream water quality as follows:

Among the industrial users are two paper company facilities and one nuclear power plant. Mead Paper Company, at the headwaters of W.F.

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November 21, 2008  
Page 3

George Lake, and the Georgia Pacific Corporation, in the headwaters of Lake Seminole, withdraw water for processes used in the manufacturing of wood products. These companies must also meet special water quality requirements for discharge that are based on a combination of dissolved oxygen and flow in the river. The Alabama Power Company's Farley Nuclear Power Plant is located on the Chattahoochee River downstream from Columbia, Alabama. The plant has an intake structure that provides cooling water for its nuclear fuel, and is dependent upon a river-stage above 76 feet MSL for safe operation.

Apalachicola River Basin Reservoir Regulation Manual, Appendix C, Walter F. George Dam at C-13 (Feb. 1993).

Plant Farley and the other industrial facilities in the region make a major contribution to the regional economy of southeastern Alabama and southwestern Georgia. Flows of 2,000 cfs at Columbia, Alabama, are critical for the continued safe and reliable operation of those facilities. Therefore, Southern Nuclear urges the Corps to ensure its manual revisions clearly provide for the continuation of flows at that level.

**The Corps must support navigation on the Apalachicola and Chattahoochee Rivers.**

In addition to flow assumptions, another primary factor in the siting of Plant Farley was proximity to a federally authorized and maintained navigable river. Most of the large equipment for the original plant construction was delivered by barge. In 2000 and again in January of 2006, barge transportation to and from the plant was necessary for vital equipment replacement and maintenance activities. No other mode of transportation to Farley was adequate for those purposes. Inadequate provision for reliable navigation will increase costs for Plant Farley and limit the potential for future expansion.

Navigation is one of the principal authorized purposes of the ACF River Basin reservoir system as authorized by Congress. Each of the Corps' ACF reservoirs plays a critical role in maintaining navigation in the ACF River Basin. For example, the current reservoir regulation manual for Jim Woodruff Reservoir describes Woodruff as "a multi-purpose project created primarily to aid navigation in the Apalachicola River below the dam and in the Chattahoochee and Flint Rivers above the dam and to generate electric power." Apalachicola River Basin Reservoir Regulation Manual, Appendix A, Jim Woodruff Reservoir at A-10 (1972 & Rev. July 1985). To this end, the Corps is directed to maintain Woodruff at an elevation of approximately 77 ft MSL while continuously releasing inflows to the Apalachicola River in order to support a nine foot deep navigation channel. *Id.* at A-16, A-17. Continuous navigation operations are to be curtailed only during unusual low-flow events, consistent with static head limitations. *Id.* at A-18.

Upstream, the George W. Andrews Reservoir is described in its Reservoir Regulation Manual as "a single purpose project designed to aid navigation by providing a 9-foot

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November 21, 2008  
Page 4

navigation channel and by maintaining a more uniform downstream flow." Apalachicola River Basin Reservoir Regulation Manual, Appendix D, George W. Andrews Reservoir at D-5 (Rev. Feb. 1978). Andrews, like Woodruff, is a run-of-river project, and it aids navigation primarily by passing inflows released from upstream projects. All efforts are to be made to ensure Andrew's tailwater does not drop below 77 ft MSL—the minimum needed to maintain a nine foot navigation channel. *See id.* at D-26. When Andrews can no longer support this tailwater elevation, "arrangements may have to be made for limited operation of the Walter F. George power plant, or for equivalent spillway discharges." *Id.* Indeed, all three of the upstream reservoirs are required to support navigation from Columbus, Georgia, to the Gulf of Mexico. As the Corps' 1989 Draft Water Control Plan recognizes, "all three of the major storage projects will be utilized to provide the designated level of support" for navigation "for as long as possible and, of course, preferably year-round." ACF Basin Water Control Plan at 17-18 (Draft Oct. 1989).

As explained above, Plant Farley was designed and built on the assumption that the Corps would ensure a minimum elevation of 76 ft MSL between Andrews and Woodruff for as much of the year as possible. When the ACF reservoirs are operated to meet the elevation and flow targets specified in the Woodruff and Andrews Reservoir Regulation Manuals, Plant Farley's operational requirements are met.

Recently, the Corps has not maintained the Apalachicola River to provide for safe and reliable navigation, largely due to the State of Florida's denial of authorization pursuant to Clean Water Act ("CWA") Section 401, the Coastal Zone Management Act ("CZMA"), and various state statutes and regulations. As a result, commercial barge traffic from Alabama and Georgia to the Gulf of Mexico has all but ceased. Nevertheless, the Corps is responsible for maintaining navigation in the ACF River Basin notwithstanding Florida's decision. CWA Sections 404(t) and 511(a) provide sufficient authority for the Corps to proceed with navigation maintenance despite Florida's denial of a Section 401 permit. Additionally, Florida's coastal management program does not provide an independent basis to block navigation maintenance on the Apalachicola River. Under CZMA Section 307(e), the consistency review program may not be construed as diminishing, superseding, or modifying existing federal responsibilities over navigable waters. The Corps cannot use its failure to maintain the navigation channel and the subsequent reduction in barge traffic as a basis for not operating the reservoirs for navigation.

**The Corps must operate the ACF reservoirs for their authorized purposes.**

The Corps' method of developing its Interim Operations Plan ("IOP") and Revised Interim Operations Plan ("RIOP") raises concerns about how the Corps defines its statutory authority with respect to ACF River Basin operations. The IOP and RIOP are almost exclusively driven by fish and wildlife concerns. However, only one ACF reservoir—West Point—was expressly authorized by Congress for any fish and wildlife purpose, and that West Point authorization was for fish and wildlife recreation. There is no recreational purpose associated with the mussel and sturgeon species which were the

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November 21, 2008  
Page 5

subject of the IOP and RIOP. The Corps has no independent authority to create an IOP or RIOP designed to benefit threatened and endangered species to the detriment of the authorized purposes of the ACF reservoir system.

The Endangered Species Act ("ESA") does not authorize federal actions independent of federal agencies' other statutory authorities. Rather, a federal agency may undertake an action for the conservation of a threatened or endangered species only if its authorizing statutes allow it to do so. The Eighth Circuit Court of Appeals, in an opinion addressing the Corps' Missouri River operations, noted that if "ESA compliance would force the Corps to abandon the dominant [Flood Control Act] purposes of flood control or downstream navigation, the ESA would not apply." *In re Operation of the Missouri River System Litigation*, 421 F.3d 618, 631 n.9 (8th Cir. 2005) (emphasis added). The Eighth Circuit's opinion largely upheld a decision by Judge Paul Magnuson, who now presides over the ACF litigation in the Middle District of Florida. Likewise, the Supreme Court has recently held that ESA Section 7 governs only *discretionary* federal action; it does not mandate any result beyond or contrary to an agency's discretionary authority. *Nat'l Ass'n of Home Builders v. Defenders of Wildlife*, 127 S. Ct. 2518, 2536 (2007).

Under the applicable provisions of the ESA and the regulations of the Fish and Wildlife Service, the Corps should have presented its method of operating the ACF reservoirs as the subject of the Section 7 consultation. Because the Corps failed to do so, there was never any determination whether the Corps' pre-IOP operations potentially "jeopardize[d] the continued existence" of the Gulf sturgeon or the Apalachicola mussels or "destroy[ed] or adversely modify[ed]" those species' critical habitats. Rather, the IOP itself was made the subject of Section 7 consultation—even though the Corps lacks independent statutory authority to develop the IOP or RIOP.

Support of navigation is among the primary Congressionally authorized purposes of the ACF reservoirs. Accordingly, the Corps has no discretion to abandon navigation support, nor may the Corps operate the ACF reservoirs for conservation of a species listed under the ESA if doing so results in operations which fail to provide for navigation and the other Congressionally authorized purposes of the ACF reservoirs. See 421 F.3d at 629 n.7 ("[I]f faced in the future with the unhappy choice of abandoning flood control or navigation on the one hand or recreation, fish and wildlife on the other, the priorities established by the [statutes authorizing the Missouri River projects] would forbid the abandonment of flood control or navigation."). Providing additional flows for fish and wildlife are appropriate *only* after the primary purposes of the ACF reservoir system, including navigation, are met.

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November 21, 2008  
Page 6

Thank you for your consideration of these comments. Should you have any questions or if you wish to receive additional information, please contact me at (205) 992-6387 or [jgodfrey@southernco.com](mailto:jgodfrey@southernco.com).

Sincerely,



Mike Godfrey  
Environmental Affairs Manager

JMG/ahl

ES File: E.01.51

10/20/08



December 30, 2009

VIA OVERNIGHT DELIVERY AND ELECTRONIC SUBMISSION AT  
[http://www.sam.usace.army.mil/pa/acf-wcm/mail\\_list.htm](http://www.sam.usace.army.mil/pa/acf-wcm/mail_list.htm)

Col. Byron Jorns, District Engineer  
Mobile District, U.S. Army Corps of Engineers  
c/o Tetra Tech, Inc.  
107 Saint Francis Street, Suite 1403  
Mobile, Alabama 36602-9986

Re: **Revisions to the Scope of Draft Environmental Impact Statement for  
Updating the Water Control Manuals for the Apalachicola-Chattahoochee-  
Flint River Basin**

Dear Colonel Jorns:

This letter provides the comments of Tri Rivers Waterway Development Association ("TRWDA") regarding efforts of the Corps of Engineers ("Corps") to revise the scope of the Environmental Impact Statement ("EIS") for revisions to the water control manuals for the Apalachicola-Chattahoochee-Flint ("ACF") River Basin. *See* 74 Fed. Reg. 59,965 (Nov. 19, 2009). According to the Corps:

Any comments previously submitted will be reviewed and addressed in any scoping revisions. There is no need to resubmit comments previously provided during the 2008 scoping effort, unless in your opinion the above-cited district court decision necessitates additional comments from you.

*Id.* at 59,966. TRWDA submitted comments dated November 21, 2008, and we have enclosed an additional copy of those comments which are hereby incorporated by reference. This letter provides additional comments in light of Judge Magnuson's July 17, 2009, memorandum and order in the Tri-State Water Rights litigation. *In re Tri-State Water Rights Litigation*, Case No. 3:07-md-01 (M.D. Fla. July 17, 2009). This letter hereinafter refers to the Court's memorandum and order as "Court Order."

Col. Byron Jorns, District Engineer

December 30, 2009

Page 2

**1. The Corps Must Determine Project Purposes with Reference to the Original Authorizing Statutes.**

TRWDA's previous comments emphasized that the Corps must abide by the Congressionally authorized purposes of the ACF River System, and TRWDA set forth the lawful project purposes for all five of the Corps' ACF reservoirs. The Court Order demonstrates that TRWDA applied the correct method to identify the Congressionally authorized purposes for the Corps' ACF projects.

TRWDA cited the original statutes authorizing the construction of the reservoirs, as well as the specific Corps documents referenced in those statutes. For example, in the case of Lake Lanier, TRWDA cited primarily the 1946 Rivers and Harbors Act, Pub. L. No. 79-525, 60 Stat. 634, 635 (1946), and House Document No. 80-300 (1946). From those documents, TRWDA concluded that the three Congressionally authorized purposes of Lake Lanier are flood control, navigation, and hydropower. The Court cited the very same documents under the sub-heading of "Authorization," as well as additional legislative history. Court Order at 6-9. The Court then concluded that the primary purposes of Lake Lanier are flood control, navigation, and hydropower. Court Order at 72-74. Therefore, the Court Order confirms that TRWDA has used the correct method to determine the lawful purposes of the Corps' reservoirs in the ACF River System.

TRWDA's prior comments explained that water supply is not a Congressionally authorized purpose of Lake Lanier. The Court agreed as follows:

Having thoroughly reviewed the legislative history and the record, the Court comes to the inescapable conclusion that water supply, at least in the form of withdrawals from Lake Lanier, is not an authorized purpose of the Buford project.

Court Order at 77. The Court Order went on to explain that additional Congressional authorization would be required before the Corps could lawfully reallocate Lake Lanier storage for water supply regardless of what has been done in the past. Court Order at 88.

**2. The Corps Must Support Navigation.**

**a. The Corps Is Obligated to Operate the ACF Reservoirs to Support Navigation.**

Application of the correct methodology to determine the Congressionally authorized purposes of the ACF River System yields the inescapable conclusion that navigation is a primary authorized purpose of all five of the Corps' ACF reservoirs. TRWDA described the lawfully authorized project purposes for the remaining four reservoirs in the ACF River System in its previous comments and reiterates them here:

Col. Byron Jorns, District Engineer

December 30, 2009

Page 3

- **West Point: Flood control, hydropower, fish and wildlife recreation, general recreation, and NAVIGATION.** Sources: Pub. L. No. 87-874, 76 Stat. 1173, 1180 (1962) (referencing H.R. Doc. No. 87-570 (1962)).
- **Walter F. George: NAVIGATION and hydropower.** Sources: Pub. L. No. 79-14, 59 Stat. 10, 11, 17 (1945) (referencing H.R. Doc. No. 76-342 (1939)); Pub. L. No. 79-525 (referencing H.R. Doc. 80-300); Resolution of House Public Works Committee (May 19, 1953).
- **George W. Andrews: NAVIGATION.** Sources: Pub. L. No. 79-14; Pub. L. No. 79-525; Resolution of House Public Works Committee (May 19, 1953).
- **Jim Woodruff: NAVIGATION and hydropower.** Sources: Pub. L. No. 79-14; Pub. L. No. 79-525.

The Corps cannot lawfully rely on its own past failure to maintain the ACF River System for navigation as an excuse not to operate the reservoirs in a manner that supports navigation today and in the future. The Corps' failure to maintain the navigation channel is not some externality beyond the Corps' control. Rather, it is the Corps' own statutory responsibility to do so. Therefore, in accordance with the Court Order, the Corps should revise the scope of its EIS to ensure that reliable, year round navigation on the ACF system is a required alternative and is fully provided for in the revision of its water control plans and manuals. The Corps may not consider any alternative that does not fully account for navigation.

**b. The Corps Has Adequate Navigation Maintenance Authority Regardless of State Approval.**

The Corps cannot lawfully blame its failure to maintain the ACF River System for navigation on the action by the Florida Department of Environmental Protection ("FDEP") to deny state permit approval more than four years ago. TRWDA has engaged FDEP staff as well as environmental interests to explore the necessity of resuming maintenance dredging. Based on those discussions and the knowledge and experience of TRWDA members, we remain convinced that there are appropriate and environmentally responsible methods to perform all the tasks necessary to maintain a safe and reliable navigation channel. However, the Corps must exercise its mandated responsibilities. Unfortunately, the Corps has undertaken no apparent effort to identify navigation maintenance options which may be agreeable to FDEP and other interests. TRWDA urges the Corps to restore safe and reliable commercial navigation in the ACF River System.

Col. Byron Jorns, District Engineer

December 30, 2009

Page 4

In developing a plan for navigation maintenance, TRWDA urges the Corps to work cooperatively with FDEP and other appropriate stakeholders, including navigation interests, environmental interests, and local governments. However, regardless of whether FDEP approval is obtained, the Corps has sufficient federal preemptive authority to maintain the federal navigation project, including specifically the ACF River System, regardless of state objections. TRWDA has previously explained the legal basis for the Corps' authority in a petition to maintain the ACF navigation project, which TRWDA submitted on March 2, 2006, and which these comments shall reference as the "404(t) Petition." A copy of that petition is enclosed and hereby incorporated in these comments.

TRWDA's petition focused on Sections 404(t) and 511(a) of the Clean Water Act ("CWA"). As recently as November of 2009, in the context of the Corps' efforts to dredge the Delaware River over the objections of the State of Delaware and others, the Corps acknowledged that those statutes and others authorize the Corps to conduct maintenance dredging for a federal navigation project over the objection of a state. According to the Corps, "Congress has exempted certain Federal construction projects from regulation under the CWA, thereby retaining for itself the authority to determine whether such projects should proceed." Brief for Federal Defendants at 21, *State of Del. Dep't of Nat. Res. & Env'tl. Control*, Case No. 09-cv-821-SLR (D. Del. filed Nov. 20, 2009) (hereinafter "Corps' Brief").

Generally, the federal government is immune from state regulation. However, the CWA waives sovereign immunity for certain limited purposes under the CWA, which means some federal actions may be subject to state water quality regulation. Corps' Brief at 24-25. However, this waiver of sovereign immunity is limited. The Corps' Brief correctly explains that the CWA "shall not be construed as . . . affecting or impairing the authority of the Secretary of the Army . . . to maintain navigation." Corps' Brief at 27 (quoting CWA § 511(a), as codified at 33 U.S.C. § 1371(a)). The intent of Section 511(a) was to ensure the Corps "has the authority to proceed with measures necessary to maintain navigation" in the event "State requirements relating to the disposal of dredged spoil may not be compatible with the responsibility of the Corps of Engineers to maintain navigation." 404(t) Petition at 19 (quoting remarks of Rep. Ray Roberts, 123 Cong. Rec. 38,970 (1977)).

CWA Section 404 specifically governs discharges of dredged or fill materials into areas subject to CWA jurisdiction. Section 404 generally authorizes states to "control the discharge of dredged or fill material in any portion of the navigable waters within the jurisdiction of such State, including any activity of any Federal agency." Corps' Brief at 25 (quoting CWA 404(t), as codified at 33 U.S.C. § 1344(t)). States are authorized to add substantive and procedural requirements. *Id.* However, Section 404(t) also includes the following qualification: "This section shall not be construed as affecting or impairing the authority of the Secretary to maintain navigation." Corps' Brief at 25 (quoting CWA 404(t), as codified at 33 U.S.C. § 1344(t)).

Col. Byron Jorns, District Engineer

December 30, 2009

Page 5

The Corps also has stated that it may engage in dredging on the Delaware River notwithstanding Delaware's objection pursuant to the Coastal Zone Management Act ("CZMA"). According to the Corps, a direct action by a federal agency (as opposed to a private action taking place pursuant to a federal permit) "may proceed even if a state objects to a Federal consistency determination." Corps' Brief at 36 (citing 15 C.F.R. § 930.43(d)). Therefore, Delaware was "incorrect as a matter of law" that the Corps' dredging activities required state concurrence. *Id.* Thus, the Corps has amply demonstrated, and TRWDA agrees, that a state's refusal to concur under the CZMA is no bar to the Corps' maintenance of a federal navigation project, including the navigation channel in the ACF river basin.

The Corps has sufficient federal authority to maintain the navigation channel in the ACF river basin without regard to a state's action. The Corps' exercise of this navigation maintenance responsibility should be included in the scope of its EIS and fully accounted for in any revisions of its water control manuals for the ACF river basin.

Thank you for this opportunity to comment. Please feel free to contact me at (334) 668-1000 if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Billy V. Houston", with a long, sweeping horizontal line extending to the right.

Billy V. Houston  
Executive Director

Enclosures



November 21, 2008

**SUBMITTED VIA E-MAIL TO [COMMENTS@ACF-WCM.COM](mailto:COMMENTS@ACF-WCM.COM)**

Col. Byron Jorns, District Engineer  
Mobile District, U.S. Army Corps of Engineers  
107 Saint Francis Street, Suite 1403  
Mobile, Alabama 36602-9986

**Re: Scoping Comments for Revisions of the Water Control Manual for the  
Apalachicola-Chattahoochee-Flint River Basin**

Dear Colonel Jorns:

This letter provides the comments of Tri Rivers Waterway Development Association ("TRWDA") regarding the scoping process of the Corps of Engineers ("Corps") to update its water control manual for the Apalachicola-Chattahoochee-Flint ("ACF") River System. Thank you for your consideration of TRWDA's views.

**1. TRWDA's Interest in the ACF River Basin**

TRWDA represents many stakeholders who rely on the ACF River System for a variety of uses, including navigation, hydropower generation, water supply, wastewater treatment, economic development, environmental enjoyment, tourism, and recreation. The members of TRWDA include the cities of Eufaula, Dothan, and Phenix City, Alabama, and Columbus and Bainbridge, Georgia; most of the counties in the three states along the federal navigation project; the Coalition of Alabama Waterway Associations; Columbus Water Works; Georgia Pacific; Lake Seminole Association; MeadWestvaco; Middle Chattahoochee Water Coalition; Riverway South; Southeast Water Alliance; and Southern Nuclear Company.

TRWDA seeks to partner with business, municipal, industrial, environmental, agricultural, and recreational interests, and with local, state and federal agencies to seek

Col. Byron Jorns, District Engineer

November 21, 2008

Page 2

scientific, technical and economic solutions to the obstacles which have prevented a full realization of the benefits of the ACF River System in recent years. We have engaged experts in business development and economic analysis from Troy University to quantify the economic value and potential of the system, including impacts to industrial development, agriculture, municipal revenues, and tourism. We have also entered into direct discussions with representatives in the ACF river basin from Lake Lanier and the greater Atlanta area in the north to the Apalachicola Bay in the south, and we intend to continue to participate in those mutually cooperative efforts.

## **2. The Corps Must Operate the ACF Projects for Their Congressionally Authorized Purposes.**

### **a. The Corps Should Acknowledge the Statutory Authorized Purposes for the ACF Reservoirs.**

Congress enacted several federal statutes which provide the Corps' authority for its initial construction and subsequent operation of the ACF reservoirs. Any revision to the water control manual for the ACF River System must comply with those laws as well as with the Corps' regulations. TRWDA understands the federal reservoirs' primary Congressionally authorized purposes to be as follows:

- **Lake Lanier: Hydropower, downstream navigation, and flood control.** Sources: Pub. L. No. 79-525, 60 Stat. 634, 635 (1946) (referencing H.R. Doc. 80-300 (1946)).
- **West Point: Flood control, hydropower, fish and wildlife recreation, general recreation, and navigation.** Sources: Pub. L. No. 87-874, 76 Stat. 1173, 1180, (1962) (referencing H.R. Doc. No. 87-570 (1962)).
- **Walter F. George: Navigation and hydropower.** Sources: Pub. L. No. 79-14, 59 Stat. 10, 11, 17 (1945) (referencing H.R. Doc. No. 76-342 (1939)); Pub. L. No. 79-525 (referencing H.R. Doc. 80-300); Resolution of House Public Works Committee (May 19, 1953).
- **George W. Andrews: Navigation.** Sources: Pub. L. No. 79-14; Pub. L. No. 79-525; Resolution of House Public Works Committee (May 19, 1953).
- **Jim Woodruff: Navigation and hydropower.** Sources: Pub. L. No. 79-14; Pub. L. No. 79-525.

The laws cited above are the primary sources of the Corps' authority with respect to the ACF reservoirs. They provide the legal basis for how the Corps should operate the

Col. Byron Jorns, District Engineer

November 21, 2008

Page 3

ACF reservoirs. To demonstrate compliance with these applicable laws and authorities, TRWDA urges the Corps to provide a clear explanation of the primary Congressionally authorized purposes for each reservoir in its revised manual and in the accompanying environmental documentation.

**b. The Federal Action Is: Reservoir Operations for their Congressionally Authorized Purposes.**

TRWDA urges the Corps to include in its environmental documentation a clear explanation of the federal “action” which the Corps is evaluating for purposes of complying with the National Environmental Policy Act. That “action” should be defined as the operation of the ACF reservoirs in accordance with their Congressionally authorized purposes.

Events leading to the development of the Corps’ present Interim Operations Plan (“IOP”) and Revised Interim Operations Plan (“RIOP”) for the ACF river basin illustrate our concerns. In our view, the Corps never clearly defined the federal action which was the subject of its Section 7 consultation with the U.S. Fish and Wildlife Service (“FWS”) under the Endangered Species Act (“ESA”). Under ESA Section 7(a)(2), federal agencies are required to consult with FWS to insure a proposed action does not (1) jeopardize the continued existence of a listed species, or (2) destroy or adversely modify the species’ designated critical habitat. 16 U.S.C. § 1536(a)(2). If the action would cause jeopardy or adverse critical habitat modification, FWS is authorized to propose reasonable and prudent alternatives and reasonable and prudent measures. However, in developing the Corps’ IOP and RIOP, the federal action constituting the basis for consultation was never clear. Rather than presenting to FWS its standard operating procedures under the authorizing statutes, the Corps entered into open-ended negotiations with FWS and developed what amounts to a freestanding conservation agreement for the Apalachicola River. The resulting RIOP now drives the Corps’ operations for the rest of the ACF system.

TRWDA urges the Corps not to repeat that inappropriate model as it revises its manual. The Corps should begin by setting forth a set of operations that fulfills the authorized purposes of the reservoirs, according to the primary Congressional authorities. To the extent any manual revisions allow for alternative operations—such as operations to serve secondary project purposes or to comply with the ESA and other federal laws—the Corps should consider such alternatives only on the following terms:

- (1) Any alternative that differs from optimal operation of the reservoirs for their primary Congressionally authorized purposes should be clearly identified as such.
- (2) The need and/or legal basis to deviate from operation of the reservoirs for optimal fulfillment of the primary Congressionally authorized purposes should be clearly explained.

Col. Byron Jorns, District Engineer

November 21, 2008

Page 4

- (3) The Corps should clearly explain applicable limitations on any deviation from operations for primary Congressionally authorized purposes, such as a time limit and the circumstances under which the Corps will restore primary operating parameters.

**c. Revisions to the Manual Must Recognize Navigation as a Primary Congressionally Authorized Purpose and Reflect Statutory Intent to Support Downstream Communities.**

A central and consistent Congressionally authorized purpose of all the ACF reservoirs as enacted by Congress is to support navigation. Commercial navigation on the Chattahoochee and Apalachicola Rivers has been historically limited to points between the Gulf of Mexico and the fall line at Columbus, Georgia. Most of the ACF projects also support hydropower; however, the lowermost hydropower facility (Woodruff) is a run-of-river project with no storage capacity, as is Andrews, the nearest upstream reservoir. If navigation is limited to points below the fall line, and the hydropower project farthest downstream is run-of-river, the inevitable conclusion is that Congress intended for the Corps to operate the upstream storage reservoirs, and especially the reservoir with the most storage capacity, substantially for purposes that would be realized in the lower regions of the ACF Basin, including navigation. Any revisions to the manual must be consistent with that clear demonstration of Congressional intent.

TRWDA is well aware of the reduction in commercial navigation which has occurred in the ACF River System in recent years. However, a major contributing factor was the failure of the Corps to properly maintain the channel, and the Corps must not ignore its statutory obligation to provide navigation as it revises its water control manual. The critical limitation on navigation is the lack of proper maintenance of a few small stretches of the Apalachicola River, which blocks access from the upstream Chattahoochee and Flint Rivers south to the Gulf of Mexico. However, channel maintenance is the Corps' responsibility under federal law.<sup>1</sup> The primary hindrance to navigation in the ACF system is the Corps' failure to provide it. The Corps must not and cannot lawfully use its own failure to perform its statutory duty to maintain the Apalachicola River for navigation as a basis to unilaterally reorder the project purposes without first obtaining Congressional approval to do so.

To justify its own failure to maintain the navigation channel, the Corps has cited a 2005 decision of the Florida Department of Environmental Protection ("FDEP") to deny certain state environmental authorizations for the Corps' channel maintenance activities. TRWDA remains concerned and disappointed that the Corps would so easily place itself

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<sup>1</sup> TRWDA provided a thorough explanation of the Corps' obligation to maintain the Apalachicola River for navigation in a petition to the District Engineer and the Chief Engineer dated March 2, 2006, asking the Corps to resume navigation maintenance pursuant to Section 404(t) of the Clean Water Act. We trust that document remains available to the Corps, but we will be pleased to provide the Corps additional copies if needed.

Col. Byron Jorns, District Engineer

November 21, 2008

Page 5

in a subservient position to a state and allow a state agency to veto the Corps' federal authority and activities. TRWDA shares the concerns of FDEP and environmental groups with respect to the environmental impacts of certain dredging and disposal practices which were utilized in the past. However, TRWDA is convinced there are practical solutions for the Corps to be able to resume its channel maintenance activities in a manner acceptable to FDEP and all affected parties. In any event, the Corps should exercise its federal statutory preemptive authority to maintain the channel for navigation.

Aside from the direct interest of TRWDA and its members in navigation, we believe the Corps' provision of water flow sufficient to support navigation would also support industrial and municipal requirements, which are discussed further in Part 3 below. In addition, flows in the Chattahoochee and Apalachicola Rivers sufficient to support navigation will be beneficial to aquatic species and the natural resources of the Apalachicola River and Apalachicola Bay. A minimum flow of 5,000 cfs at Woodruff Dam has been established to benefit certain species protected under the ESA. However, it is the position of Apalachicola Bay and River Keeper and the Franklin County Seafood Workers that those minimum flows do not adequately protect the Bay and its other resources, including commercial fisheries and other ecological resources, on a sustained basis. TRWDA believes flows sufficient to meet Middle and Lower Chattahoochee requirements would increase the frequency of instances when flows below Woodruff Dam would exceed 5,000 cfs to benefit the Bay, particularly when combined with inflow contributions from the Flint River.

**d. Water Supply Is Not a Primary Congressionally Authorized Purpose.**

Congress has established the primary purposes of the ACF reservoirs, as described more fully above. All other purposes, including local water supply, are secondary. The Corps may not allow any secondary use of the ACF reservoirs that would interfere with those primary purposes without further Congressional approval. Specifically, according to the statutes governing the Corps' reservoir operations:

Modifications of a reservoir project heretofore authorized, surveyed, planned, or constructed to include storage . . . which would seriously affect the purposes for which the project was authorized, surveyed, planned, or constructed, or which would involve major structural or operational changes shall be made only upon the approval of Congress as now provided by law.

43 U.S.C. § 390b(d). The Corps has interpreted this statutory provision to limit allocation of storage for water supply to the lesser of 15% of a project's total storage or 50,000 acre-feet. ER 1105-2-100, ¶ 3.8.b(5). The statute and the Corps' regulations are consistent with longstanding federal policy to view water supply as primarily a local and not a federal responsibility. Because local water supply is not among the primary project purposes established by Congress, federal law imposes strict limits on the Corps' authority to allow water diversions for local consumption.

Col. Byron Jorns, District Engineer  
November 21, 2008  
Page 6

**3. The Corps Must Acknowledge and Address the Needs of the Middle Portions of the ACF River System.**

Water shortages in North Georgia and endangered species in the Apalachicola River have dominated the public discourse on ACF operations in the past two years, due to the drought in the Southeast. However, Congress authorized and instructed the Corps to build and operate the ACF reservoirs substantially for the benefit of those located in between those two ends of the ACF River System. For example, as explained above, Congress authorized the three storage reservoirs, including Lake Lanier, primarily for navigation support and hydropower production below the fall line. West Point is subject to Congressional authorizations for additional purposes, namely, flood control, fish and wildlife recreation, and general recreation for those in the La Grange area. As the Corps develops revisions to its ACF water control manual, it must ensure its operations serve the communities and businesses of the ACF River System's middle regions.

**a. Communities in the Lower Portions of the Basin Depend on the Corps' Provision of Adequate Flows.**

Communities and businesses located and grew in cities like Dothan, Eufaula, and Phenix City, Alabama, and Bainbridge, Columbus, and La Grange, Georgia, with the full expectation that the Corps would operate the ACF reservoirs according to the laws authorizing their construction and operation. Those communities spent millions of dollars to build public works projects as well as infrastructure including the Eufaula Inland Dock, the Phenix City Inland Dock, and the Columbia Inland Dock in Alabama and the Port of Columbus and Port Bainbridge in Georgia. Those facilities made it possible for local communities to sell and ship agricultural, silvicultural and mineral products in bulk and to receive large deliveries of fuels and fertilizers by barge. Companies including TRWDA members Georgia Pacific, MeadWestvaco and Southern Nuclear Company sited and built major industrial facilities on the Chattahoochee River based in large part on the federal commitment that flows sufficient to serve the Congressionally authorized purposes would provide for their industrial cooling and discharge assimilation. They also expected to reap the benefits associated with barge transport of fuel and bulk products provided by a reliable navigation channel.

Not only have these communities and businesses acted and invested in reliance on the Corps' lawful operation of the ACF reservoirs in the past, but they are counting on adequate flows for their future survival. Industry and commerce will continue to grow in southeastern Alabama and southwestern Georgia with adequate flows and channel maintenance. Several new economic opportunities which depend on flows in the Chattahoochee and Apalachicola Rivers have recently been developed or are under serious consideration. The Corps and the cities of Columbus, Georgia, and Phenix City, Alabama, have been working on a river restoration project involving the removal of two small, historic dams to improve habitat and create a whitewater recreation course. Riverway South—an organization extending across all three ACF states—is actively promoting eco-tourism, and its success depends on the assurance of a safe and reliable

Col. Byron Jorns, District Engineer

November 21, 2008

Page 7

navigation channel from Columbus, Georgia, south to the Gulf of Mexico. Longleaf Energy Associates has a permit to site a new energy production facility on the Chattahoochee River in Early County, Georgia, and the company plans to begin construction next year. Several projects which include marinas or other river-based recreational opportunities have recently opened, are under development, or are in serious consideration, including a new marina which recently opened in Bainbridge, Georgia; the Trail's End Resort and Marina on Lake Seminole; a proposed new marina near the National Infantry Museum in Columbus, Georgia; a proposed marina and nature trail in Quitman County, Georgia; and a kayak venture proposed for Chattahoochee, Florida.

Without adequate flows and safe and reliable navigation, these opportunities for economic growth and business development will be subject to difficult challenges. TRWDA urges the Corps to explain in its revised manual and the accompanying environmental documentation how it intends to provide for the needs of the communities and industries located in the middle and lower portions of the ACF River System.

**b. The Corps Must Continue to Provide Agreed-upon Minimum Flows in the Middle and Lower Chattahoochee River.**

As you know, in recent years, representatives of Alabama, Florida, and Georgia attempted to develop a mutually agreeable allocation of water in the ACF River System. In that context, on July 22, 2003, the three governors signed an agreement which set flow parameters, including the following:

- “On the Chattahoochee River above its confluence with Peachtree Creek, a flow of 750 cfs will be maintained on a daily basis, with the understanding that the State of Georgia is entitled to a variable flow regime that requires no less than 650 cfs in winters. . . .”
- “On the Chattahoochee River at Columbus, Georgia, a flow of 1350 cfs will be maintained on a daily basis at all times, and a flow of 1850 cfs will be maintained on a weekly basis provided that the top of the storage pool in West Point Reservoir is above 621.6 feet.”
- “On the Chattahoochee River at Columbia, Alabama, a flow of 2000 cfs will be maintained on a daily basis.”
- “On the Apalachicola River at Chattahoochee, a minimum flow of 5000 cfs will be maintained on a weekly basis at all times. . . .”

Memorandum of Understanding Regarding Initial Allocation Formula for the ACF River Basin, ¶ 4 (July 22, 2003) (emphases added). Those flow figures were to be included in any allocation formula agreed to by the parties, and they were “intended to be met by the combined actions of maintaining water uses consistent with the allocation formula, and

Col. Byron Jorns, District Engineer

November 21, 2008

Page 8

by the Corps operating the federal reservoirs consistent with the allocation formula.” *Id.* (emphasis added). The license issued by the Federal Energy Regulatory Commission for the Middle Chattahoochee Project, a privately owned, run-of-river project located between West Point reservoir and Columbus, Georgia, includes flow targets which depend on the Corps’ releases from the West Point Dam upstream. Those targets reference the same flow levels for Columbus, Georgia, which are included in the tri-state agreement. Specifically, the targets are 1,350 cfs daily average, 1,850 cfs weekly average, and 800 cfs instantaneous when the Corps provides flows at or above those levels or, when the project’s inflow is less than those levels, outflow equal to inflow. *See* 109 FERC 62,246, at Article 402 (2004).

In revising its manual, the Corps should develop its operation plan to satisfy the flow parameters agreed to by all three states. TRWDA in particular calls the Corps’ attention to the Middle and Lower Chattahoochee flow requirements, namely, 1,350 cfs daily and 1,850 cfs weekly at Columbus, Georgia, and 2,000 cfs daily at Columbia, Alabama. We believe those flow levels are generally sufficient to meet the Congressionally authorized purposes of the ACF River System. They also correspond to the flows that are necessary to meet the water supply and water quality needs of Columbus Water Works, as well as the operation of industrial facilities on the Chattahoochee River, including those facilities operated by Georgia Pacific, MeadWestvaco, and Southern Nuclear Company.

**c. The Corps Should Not Rely on Flint River Flows to Meet Apalachicola River Needs to the Detriment of Flows in the Middle and Lower Chattahoochee River.**

Recently, increased flows from the Flint River have contributed to the Corps’ release of water from Woodruff Dam to provide for the 5,000 cfs minimum flows at Chattahoochee. Like all stakeholders in the basin, TRWDA is grateful for any inflows that help meet system needs. However, the Corps must not rely on Flint River flows to meet Apalachicola River requirements to the detriment of the Middle and Lower Chattahoochee River communities. Contributions from the Flint River should provide no rationale for the Corps to reduce flows in the Middle and Lower Chattahoochee River below those levels necessary to support Congressionally authorized purposes and industrial and municipal needs.

As noted above, the primary Congressionally authorized purposes of the ACF federal reservoirs include hydropower, navigation, and flood control. The Corps’ ability to fulfill the reservoirs’ purposes for the benefit of the communities located along the ACF River System from Dothan, Alabama, to Gainesville, Georgia, depends exclusively on conditions in the Chattahoochee River. The Flint River has absolutely no effect at any point on the Chattahoochee River above its confluence with the Chattahoochee just above the Jim Woodruff Dam. Because Flint River conditions are independent from Chattahoochee River conditions, there is no logical basis to alter operations at the Corps’

Col. Byron Jorns, District Engineer

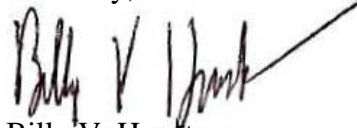
November 21, 2008

Page 9

Chattahoochee River projects to the detriment of Middle and Lower Chattahoochee River stakeholders in response to conditions in the Flint River.

Thank you again for this opportunity to comment. Please feel free to contact me at (334) 668-1000 if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Billy V. Houston", is written over a faint, rectangular, dashed-line box.

Billy V. Houston  
Executive Director



**Waterway Development Association**

P.O. Box 2232, Dothan, AL 36302

~~334-792-8611 / 8612~~

March 2, 2006

VIA OVERNIGHT DELIVERY

COL Peter F. Taylor, Jr.  
District Engineer  
U.S. Army Corps of Engineers  
109 St. Joseph Street  
Mobile, AL 36602

Re: Petition for the Corps to Exercise the Authority of the Secretary of the Army to  
Maintain Navigation on the Apalachicola-Chattahoochee-Flint Rivers Federal  
Navigation Project

Dear Colonel Taylor:

Tri Rivers Waterway Development Association ("Tri Rivers") is a group of municipal governments, chambers of commerce, businesses, industries, and individuals united in a mission of promoting inland waterway commerce and navigation and sound economic development in the region served by the Apalachicola-Chattahoochee-Flint Rivers Federal Navigation Project ("ACF Project"). Tri Rivers' members share a common desire to ensure the continued availability of navigation on the federally authorized ACF Project in order to sustain and improve the quality of life in Southeast Alabama, Southwest Georgia, and Northwest Florida.

The State of Florida recently denied a permit application submitted by the Corps of Engineers for activities necessary to maintain navigation on the ACF Project. By the enclosed petition, the Corps of Engineers is respectfully requested to exercise its statutory authority to override Florida's decision and maintain the ACF Project for its Congressionally authorized purpose, namely, navigation.

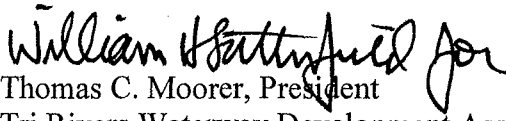
As discussed in the enclosed petition, Part 337 of the Corps' regulations sets forth the process for the Corps, pursuant to Sections 404(t) and 511(a) of the Clean Water Act, to override an adverse state decision where necessary to maintain a federal navigation project. The District Engineer may prepare a report and forward it to the Office of the Chief of Engineers in

COL Peter F. Taylor, Jr.  
March 2, 2006  
Page 2

Washington, D.C., "[w]hen the state denies or unreasonably delays a water quality certification." See 33 C.F.R. §§ 337.2(b)(3), 337.8. Under the Corps' regulations, the Chief of Engineers, as the recipient of the report, is the official authorized to exercise the override. *Id.* § 337.2(b)(3). However, the preamble to these regulations also states that the "district engineer is the ultimate decision maker for Corps maintenance dredging and disposal activities." 53 Fed. Reg. 14902, 14910 (April 26, 1988). Consequently, we are providing this same petition to LTG Carl A. Strock, Chief of Engineers, on today's date.

Thank you for your attention to this matter. Please feel free to contact me at (205) 992-5807 or [tcmoorer@southernco.com](mailto:tcmoorer@southernco.com) if you have any questions or comments.

Sincerely,

  
Thomas C. Moorer, President  
Tri Rivers Waterway Development Association

Enclosure

cc: LTG Carl A. Strock

UNITED STATES OF AMERICA  
BEFORE THE  
UNITED STATES ARMY CORPS OF ENGINEERS

	)
In the matter of	)
	)
THE APALACHICOLA-	)
CHATTAHOOCHEE-FLINT RIVERS	)
FEDERAL NAVIGATION PROJECT.	)
	)
	)
TRI RIVERS WATERWAY	)
DEVELOPMENT ASSOCIATION,	)
	)
Petitioner.	)
	)

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**PETITION TO THE DISTRICT ENGINEER AND THE CHIEF  
OF ENGINEERS TO EXERCISE THE AUTHORITY OF THE SECRETARY  
OF THE ARMY TO MAINTAIN NAVIGATION ON THE APALACHICOLA-  
CHATTAHOOCHEE-FLINT RIVERS FEDERAL NAVIGATION PROJECT**

Tri Rivers Waterway Development Association (“Tri Rivers” or “Petitioner”) hereby petitions the District Engineer and the Chief of Engineers to exercise the authority granted to the Secretary of the Army to instruct the United States Army Corps of Engineers (“Corps”) to maintain navigation on the Apalachicola-Chattahoochee-Flint (“ACF”) Rivers Federal Navigation Project in Alabama, Florida and Georgia (“the ACF Project”), including, but not limited to, any dredging, snagging, removal of rock protrusions, construction of dikes and jetties, provision of dredged material disposal areas, beneficial use of dredged material, and all other activities as may be required to maintain the Congressionally authorized 9 foot depth and 100 foot width of the navigation channel throughout the ACF Project.

Tri Rivers was formed in 1960 to promote inland waterway commerce and navigation and sound economic development within communities adjacent to the ACF waterways. Its

membership draws primarily from municipal governments, chambers of commerce, businesses, industries, and individuals in Southeast Alabama, Southwest Georgia and Northwest Florida. Tri Rivers' members share a common desire to utilize and benefit from the federally authorized ACF navigation project and its effective development to improve the quality of life in the ACF Basin and the Southeast Region.

## **I. DESCRIPTION OF THE ACF PROJECT BASIN**

The ACF river system is located in the southeastern part of the United States. The basin covers the north-central and southwestern part of Georgia, the southeastern portion of Alabama, and a portion of northwestern Florida. It encompasses a total drainage area of 19,170 square miles of which about 76 percent is located in Georgia, 14 percent in Alabama, and 10 percent in Florida. The Chattahoochee River drains an area of 8,650 square miles, the Flint River 8,494 square miles, and the Apalachicola River 2,026 square miles. The basin has a total length of 385 miles and a maximum width of 110 miles. The ACF basin includes all or parts of 47 counties in Georgia, eight in Alabama and six in Florida. The 107-mile long Apalachicola River, which lies entirely in Florida, serves as the basin's outlet into Apalachicola Bay and the Gulf of Mexico at Apalachicola, Florida. Other than three problem areas on the Apalachicola River (Corley Slough, Chipola Cutoff and Blountstown reaches) representing less than twenty river miles, the ACF Project provides reliable waterborne transportation at minimal costs.

## **II. HISTORY OF NAVIGATION ON THE APALACHICOLA RIVER**

Navigation on the Apalachicola River has played an important role in interstate commerce for over 175 years. As the Mobile Corps District explained:

The Federal Government has had an interest in improving navigation along the Apalachicola River since the early eighteen hundreds, when during the 1828 through 1831 time period, the Corps of Engineers removed navigation obstructions from the river. This interest has continued through the years as evidenced

by the many subsequent actions taken by the Federal Government to restore and/or improve navigation conditions.

U.S. Army Corps of Engineers, Mobile District, Navigation Maintenance Plan for the Apalachicola-Chattahoochee-Flint Waterway, at Appendix E-1 (Sept. 1986) (“1986 Navigation Maintenance Plan”).

In 1874, Congress provided for improvement of the Apalachicola River to “secure” a channel 6 feet deep and 100 feet wide “throughout its length” by conducting various maintenance activities, including dredging and removal of snags and overhanging trees. *Id.* (quoting House Document No. 342, 76<sup>th</sup> Congress, first session). That 1874 authorization was granted in conjunction with similar authorizations for improving and maintaining the navigability of both the Chattahoochee and Flint Rivers. 1986 Navigation Maintenance Plan, at Appendix E-1. Pursuant to that Congressional authority, the Corps “maintained the navigation channel along the Apalachicola River by various methods,” including “snagging, rock removal, dredging, and construction of dikes and/or jetties.” *Id.* Nevertheless, portions of the navigation channel in the Apalachicola River continued to be filled with sand bars and snags which limited the river’s use to those periods of high flow when those obstructions did not interfere with interstate transport.

Recognizing the vital importance of the ACF waterway for interstate commerce, Congress published a general plan in 1939 for the full development of this river system in the “interest of navigation and power.” *Id.* at Appendix E-2. That document proposed “a navigation channel 100 feet wide by 9 feet deep having a minimum bend radius of 1,000 feet along the Apalachicola River, with 6-foot navigable depths along both the Chattahoochee and Flint Rivers to Columbus and Bainbridge, Georgia, respectively.” *Id.*

In 1945, Congress officially authorized development of the modern ACF Project “in the interest of national security and the stabilization of employment,” in accordance with its 1939 plan. *See* Pub. L. No. 79-14, § 2, 59 Stat. 10, 11-12 (1945), *as modified by* Pub. L. No. 79-520, 60 Stat. 634, 635 (1946). Importantly, as a long-standing Congressionally authorized development, the ACF Project continues to receive annual appropriations from Congress for its operation, maintenance, and improvement (as discussed in Part III.D below). As a result, for the past 60-plus years, the Corps has been subject to a standing Congressional mandate to maintain a 9-foot deep and 100-foot wide channel for navigation in the Apalachicola River, in order to ensure that the ACF Project remains “available for normal operation,” Pub. L. No. 107-66, 115 Stat. 486, 491-92 (2001).

Unfortunately, during the past three decades, the Corps and the State of Florida have disagreed over the proper methods to maintain the navigability of the Apalachicola River. Until last year, however, the Corps and the three states eventually reached agreements to resolve most of their differences. For example, in 1979, with the designation of the Apalachicola River and Bay as a National Estuarine Sanctuary, the State of Florida agreed to a series of conditions with the States of Alabama and Georgia. Among those conditions was Florida’s agreement that it would cooperate with the Corps in evaluating and obtaining means to improve the availability of the 9-foot navigation channel in the Apalachicola River. *See* 1986 Navigation Maintenance Plan at 1.

Again, in the early 1980’s, a disagreement arose over the Corps’ plan to remove rock shoals from the river. Consequently, in February of 1983, Tri Rivers filed a petition asking the Corps to exercise its authority under Section 404(t) of the Clean Water Act to maintain the navigability of the Apalachicola River. That ultimately led to a negotiated agreement between

the Corps and the three states to implement a long-term solution to the recurring disputes between the parties as to the proper maintenance and operation of the ACF Project. In June of 1983, the Governors of Alabama, Georgia and Florida and the Mobile District Engineer signed a Memorandum of Agreement (“MOA”) to “lay the foundation for the three States to develop a responsible water management strategy for the ACF Basin, which recognized the water needs of all users and the impact of the management strategy on Apalachicola Bay.” *See* 1986 Navigation Maintenance Plan at 2. The MOA called for the development of a “Navigation Maintenance Plan” (“NMP”) which was to “describe all future alterations believed to be necessary to maintain navigation on the ACF Waterway.” That plan was intended to have two complimentary goals. First, the NMP was to “provide the authorized channel dimensions in a cost-effective manner and in a manner which provides no further degradation of environmental resources.” *Id.* at 2. Second, the NMP was to “closely coordinate management issues on the system with appropriate parties.” *Id.* at 2.

In 1986, the Corps and the Governors of Alabama, Georgia and Florida approved implementation of a 25-year NMP for the ACF Project, in accordance with the goals and objectives outlined in the 1983 MOA. The purpose of the 1986 NMP was to “describe all future alterations believed to be necessary to maintain navigation on the [ACF] Waterway.” *See* 1986 Navigation Maintenance Plan at vi. In developing the NMP, the parties explained that “every attempt possible was made to avoid or minimize adverse impacts associated with the maintenance measures considered.” *Id.* at xii. Those efforts included:

. . . the siting and sizing of disposal areas; avoiding disposal on previously undisturbed productive flood plain and within-bank sites and in existing fields of training works; evaluating the potential to make productive use of dredged material; continuing the existing “selective snagging” program; avoiding disposal at underwater spring locations; developing data for consideration in

future rock excavation work; identifying alternative maintenance measures to address channel problems; incorporating provisions to remove dredged material sediments from the mouths of distributaries and tributaries and maintenance of the lower entrance of Battlebend Cutoff; and modifying Lake Seminole's reservoir regulation operations to smooth releases to the Apalachicola River.

*Id.* at xii. The 1986 NMP identified a number of within bank, onshore and upland disposal areas, which were approved to accept dredged material from the navigation channel because those activities were not believed to cause net degradation of the environment. The parties also identified several "problem areas" along the Apalachicola River, including the Corley Slough, Chipola Cutoff and Blountstown reaches; however, they agreed that navigation maintenance activities could continue in those areas with appropriate environmental mitigation. Importantly, the NMP recognized:

Dredging has long been, and will continue to be, a major component of the annual maintenance program of the entire ACF Waterway. For the Apalachicola River segment, the importance of dredging is second only to flow regulation in the provision of navigation depths. . . . Disposal of dredged material is a necessary activity for the maintenance program. Disposal sites listed in the NMP were designated through extensive interagency coordination.

*Id.* at xx.

The 1986 NMP anticipated future disagreements among the parties over navigation maintenance activities in the Apalachicola River, and established several principles to govern future negotiations. The parties agreed as follows:

Mitigation measures determined to be necessary [would] need to be consistent with both Federal guidelines and State criteria. . . . Development and implementation of mitigation actions [would need to] be conducted in coordination with State and Federal agencies and the need for mitigative actions will be based on anticipated adverse impacts associated with the measures. *Implementation of mitigative actions will also be limited by Congressional authorization, agency jurisdiction and fiscal capability.*

*Id.* at xiii (emphasis added).

As noted later, Florida's current position violates these principles. In fact, even though Florida designated the entire Apalachicola River as "Outstanding Florida Waters" in 1984, which places greater environmental protections on a waterway, Florida explained this designation would not conflict with the terms of the 1986 NMP. Specifically, Florida stated in its rule adopting that designation, "upon completion of the 1986 NMP . . . , it is the intent of the [Environmental Regulation] Commission to implement the recommendations of the interstate NMP." *Id.* at xxviii-xxix (quoting Florida regulations).

Although periodic disagreements subsequently arose, Florida continued to issue the necessary water quality certifications and other approvals for the Corps' maintenance activities on the ACF Project from 1984 until the mid-1990's. In 1995, the Corps applied for a renewal of its five-year permit to conduct necessary maintenance activities in the Apalachicola River. Over the next three years, the Corps, Florida, and other interested parties, including members of Tri Rivers, worked to resolve various issues associated with the ACF Project. Finally, in mid-July of 1998, the parties negotiated acceptable draft permit conditions. However, contrary to that July agreement, the permit ultimately issued by Florida in December of 1998 imposed several overly restrictive conditions which would have made adequate maintenance of the Apalachicola River nearly impossible. Nevertheless, the Corps did not appeal Florida's permit decision, because it refused to recognize Florida's jurisdiction under relevant state law, explaining:

[The Corps] does not consider itself to be an "applicant" for any Florida DEP permit. However, pursuant to the Clean Water Act, we must request and receive water quality certification from Florida in order to dredge [the Apalachicola River]. Since we do not recognize Florida's permit requirements as pertaining to the federal government, we obviously do not recognize a state administrative proceeding or state court as having jurisdiction over the federal government.

Letter from Army Corps of Engineers to Tri Rivers (Dec. 15, 1998) (Attachment A).

In light of the Corps' decision to not exercise its preemptive federal authority, Tri Rivers was compelled to file an administrative appeal of Florida's permit action, which was done on December 16, 1998. Tri Rivers' appeal later became moot when the Corps subsequently signed an agreement with Florida in 1999, which allowed the Corps to conduct its necessary maintenance activities in the Apalachicola River. The Corps' five-year permit and water quality certification was issued by Florida on October 21, 1999, and it was later modified to include additional environmentally-beneficial activities in both 2001 and 2002.

In the years leading to the 1999 water quality certification and afterwards, Tri Rivers, the Corps, and the State of Florida engaged in lengthy negotiations in an effort to identify mutually agreeable methods to maintain the navigation channel on the Apalachicola River. During that process, Tri Rivers proposed (and Congress later fully funded) a plan to minimize both the amount of dredging required and the need for dredge disposal sites. Tri Rivers, the Corps, and the State of Florida agreed to use the accumulated dredge material located in disposal areas 39 and 40 (approximately 800,000 cubic yards of clean sand) for beach renourishment projects in Florida. That disposal site, known as "Sand Mountain," was to be cleared periodically through beneficial use of the sand to allow for more capacity to deposit additional dredged material. Tri Rivers, the Corps and the State of Florida also agreed that many of the designated disposal sites would no longer be necessary for maintenance of the Apalachicola River, and complete restoration could occur on these disposal areas. Then-U.S. Senator Bob Graham also agreed with that plan, and he was a key supporter of the Fiscal Year 2001 appropriations to fund and implement the Dredge Disposal Management Plan ("DDMP"). The State of Florida agreed that disposal areas 39 and 40 (Sand Mountain) could be used in perpetuity. Moreover, officials of

Gulf County, Florida, agreed to donate land to provide a transfer site at no cost, because they saw an opportunity to create employment in one of the poorest counties in the nation and reduce the county's high unemployment rate.

Unfortunately, shortly after the 2001 legislation was enacted the lower Chattahoochee River suffered its worst drought on record, and efforts to implement the DDMP were thwarted. In 2002, Senator Bob Graham effectively reversed his position of accommodating the ACF Project's maintenance. Instead, he introduced the RARE (Restore the Apalachicola River Ecosystem) Act, which, had Congress enacted it, would have deauthorized the ACF Project between Apalachicola Bay and the Jim Woodruff Dam.

In an effort to acknowledge and address concerns associated with competing uses of the river and low flow levels, Tri Rivers proposed "seasonal navigation," allowing a guaranteed navigation channel during the high flow months, typically late November through late May. Seasonal navigation addresses three critical and potentially competing needs on the ACF river system. First, the Corps may reduce the amount of dredging required to maintain adequate channel depths, resulting in less dredged material for disposal. Second, the Corps can maintain higher water levels at upstream lakes during the peak recreation season. Third, even though the ACF Project may be unavailable for shipping during certain times of the year, seasonal navigation satisfies some shippers' need for certainty (i.e., reliability). As long as the available time periods for reliable navigation channel depths are reasonable and known in advance, those businesses and industries which rely on barge shipping are able to plan their transportation operations accordingly.

In 2003, after Chairman David Hobson assumed his position as Chairman of the House Appropriations Subcommittee on Energy and Water Development, Tri Rivers and others brought

the navigation issues on the ACF Project to his attention. Consequently, he toured the Apalachicola River by boat during the summer of 2003. That fall, in his office in Washington, D.C., Chairman Hobson met with Energy and Water Appropriations Subcommittee staff, U.S. Representative Alan Boyd, Mobile District Engineer Colonel Robert Keyser and other senior Corps officials, representatives from Gulf County, Florida, and Tri Rivers. At approximately the same time, advocates of beach renourishment at Alligator Point, a site very near the mouth of the Apalachicola River in Florida, identified a need for almost the entire amount of sand located in the “Sand Mountain” disposal site. Based on that development, the suggestion to eliminate and restore many of the other dredge disposal sites, and Tri Rivers’ proposal for a navigation “season,” Chairman Hobson appropriated additional federal funds to implement the DDMP. Those in the meeting with Chairman Hobson, and the Chairman himself, understood the purpose of this plan was to resolve the ACF Project’s maintenance issues once and for all. However, shortly thereafter, the Florida Department of Environmental Protection (“FDEP”) refused to issue a permit allowing relocation and reuse of the “Sand Mountain” sand at Alligator Point. FDEP based its permit denial on “lighting issues” which purportedly adversely impacted sea turtle breeding. In spite of FDEP’s recalcitrance, Tri Rivers remains convinced that the turtle issue was capable of resolution – and should have been resolved – by using appropriate and feasible adjustments to the sand reuse proposal and reasonable mitigation measures.

Recently, the Corps and Florida once again reached an impasse involving the state’s refusal to reasonably permit the Corps’ maintenance activities along the Apalachicola River. In 2003, one year prior to the expiration of its 1999 permit, the Corps commenced pre-application negotiations with Florida to resolve various anticipated areas of disagreement. The Corps developed several comprehensive plans, including a dredged material management plan, a bank

habitat mapping and monitoring plan, and a capacity management plan, all of which were incorporated into the Corps' final application for permit renewal which was filed with Florida on March 1, 2004 ("Permit Application"). The Corps' Permit Application stated that the permit renewal was to "provide for the continued maintenance of the Florida portions of the ACF Federal navigation channel, which provide[s] navigation and economic benefits to the States of Florida, Alabama and Georgia." Permit Application at 1. FDEP subsequently concluded the Corps' application was insufficient and asked the Corps to provide substantial amounts of additional information. In so doing, Florida even denied the Corps' request for a simple, one-year extension of its expiring permit in order to provide the Corps with an adequate opportunity to fully respond to Florida's concerns.

Finally, on October 11, 2005, in less than six pages of text, FDEP issued an order denying the Corps' permit application, thereby acting to unilaterally shut down navigable use of the ACF Project to the Gulf of Mexico. That decision ignored the Corps' obligation to maintain navigation in the ACF Project, as well as the adverse impacts to the commercial and recreational interests of the two upstream States and their citizens. As in 1998, the Corps once again chose not to participate in Florida's administrative and judicial appeal processes to attempt to overturn Florida's permit denial. Meanwhile, the Corps has not undertaken any active effort to maintain navigation on critical stretches of the ACF Project.

Once again, the burden of appealing the state's denial of the Corps' permit has fallen upon third parties who depend on the Apalachicola River for reliable navigation. On November 10, 2005, the Mid-Chattahoochee River Users ("River Users") – an association of which Tri Rivers is a member – filed an administrative petition to appeal FDEP's permit denial. That document and a later amended petition are attached (Attachments B and C). Ultimately, FDEP

dismissed the River Users' administrative appeal, citing the Corps' failure to participate in the state's administrative and judicial proceedings as the main basis for dismissal. (Attachment D). The River Users are now seeking judicial review of FDEP's permit denial before the Florida First District Court of Appeal in Tallahassee, Florida, which is not expected to rule on this matter for several months.

For over 175 years the Corps has participated in the maintenance of navigability of this important river system, and for over 60 years Congress has expressly mandated the Corps to maintain a navigation channel in the Apalachicola River. For the past 30 years, Florida has placed extraneous burdens on the Corps' ability to fulfill its Congressional mandate. Based on the successful efforts of Tri Rivers and others to address environmental concerns associated with navigation on the Apalachicola River and the impasses that have repeatedly arisen – in spite of Tri Rivers' good-faith efforts to find an amicable resolution – we have concluded that certain interests in Florida are not serious about seeking a resolution. Rather, they are pursuing a strategy of intentional delay and subterfuge, with the ultimate goal of destroying the ACF Project. Volumes of studies have been generated over recent decades demonstrating that a reliable navigation channel can co-exist with environmental values and other beneficial uses. Problems associated with navigation on the ACF Project can be resolved with minimal cooperation and expense. In our view, it is extremely short sighted, especially in light of increased fuel costs, traffic congestion on all modes, and air quality and public safety issues associated with trucking for the Corps to allow the ACF Project to fall into complete disrepair.

Fortunately, the Corps is not without recourse under federal law. As discussed below, Congress has explicitly given the Corps the authority to maintain the navigability of the ACF river system, notwithstanding Florida's objections. The time has come for the Corps to exercise

its legal authority and fulfill the Congressionally mandated purposes of the ACF Project. Tri Rivers remains committed to finding and executing a solution which can accommodate all reasonable concerns and interests, such as the DDMP and seasonal navigation – concepts that Chairman Hobson and the Corps have also publicly supported.

### **III. THE CORPS MUST EXERCISE ITS AUTHORITY TO MAINTAIN NAVIGATION ON THE ACF PROJECT**

#### **A. The Corps Has the Legal Authority and Responsibility to Maintain Navigation on the Nation's Interstate Waterways and Specifically on the ACF Project**

A variety of federal statutes require the Corps to maintain the waterways of the United States, and the ACF Project in particular, for purposes of navigation. This portion of the petition sets forth the relevant statutes and explains why they compel the Corps to fulfill its mission of maintaining navigability on the ACF Project.

##### **1. ACF Project Authorities**

As previously discussed, Congress has specifically authorized the ACF Project. In 1945, Congress “adopted and authorized” the project “in the interest of national security and the stabilization of employment.” Pub. L. No. 79-14, § 2, 59 Stat. 10, 11-12, 17 (1945). Congress further directed that the project “*shall* be prosecuted as speedily as may be consistent with budgetary requirements.” *Id.* (emphasis added). In 1946, Congress further authorized the project to incorporate and adopt a report which the Corps issued after the earlier statute (and to name the Jim Woodruff Dam). Pub. L. No. 79-525, 60 Stat. 634, 635 (1946). In 1986, Congress modified the project to authorize the Corps, subject to certain funding limits, to “restore and maintain access (in the interest of navigation and ecological restoration) to bendways and interconnecting waterways . . . isolated during construction and maintenance activities by the Federal Government.” Water Resources Development Act of 1986, Pub. L. No. 99-662, § 832,

100 Stat. 4082 (1986). That statute also authorized land acquisitions and other activities associated with “water-related public use and access facilities along and adjacent to the Apalachicola River downstream of Jim Woodruff lock and dam to Apalachicola, Florida.” *Id.* Finally, in 2001, Congress specifically authorized the Corps,

*as part of navigation maintenance activities, to develop and implement a plan to be integrated into the long-term dredged material management plan being developed for the Corley Slough reach, as required by conditions of the State of Florida water quality certification, for periodically removing sandy dredged material from the disposal area known as Site 40, located at mile 36.5 of the Apalachicola River, and from other disposal sites that the Secretary may determine to be needed for the purpose of reuse of the disposal areas, by transporting and depositing the sand for environmentally acceptable beneficial uses in coastal areas of Florida to be determined in coordination with the State of Florida.*

Pub. L. No. 107-66, 115 Stat 486, 491-92 (2001) (emphasis added). The same 2001 statute also authorized certain land acquisitions in association with disposal of dredged material; required development of a long-term management plan within two years of enactment; and provided \$4,900,000 in federal appropriations for the management plan and \$8,000,000 for “normal operation and maintenance” of the ACF Project. *Id.*

Two points are apparent from reading these statutes. First, it is clear that Congress intended – and still does – for the Corps to construct, operate, and maintain the ACF Project for purposes of facilitating navigation on the Apalachicola, Chattahoochee and Flint Rivers. Second, there is absolutely no indication that Congress even considered that concerns about dredging and other maintenance activities on the Apalachicola River, whether raised by a state or anyone else, would impede the Corps from fulfilling its mandated responsibilities on the ACF Project. To the contrary, on the one occasion that Congress opined how best to approach dredging at a “problem area,” Congress directed the Corps to devise a plan to conduct dredging in that area, *while explicitly affirming the Corps’ mission to continue to conduct its “navigation*

*maintenance activities” and providing the Corps more than adequate funding to accomplish those objectives.*

## 2. General Navigational Authorities

The Corps is subject to a number of federal statutes governing maintenance of waterways for navigation. Some of these statutes address how the Corps is to deal with environmental issues. None, however, allows the Corps to entirely abrogate its federally mandated channel maintenance responsibilities.

For example, Section 1135 of the 1986 Water Resources Development Act authorizes the Corps to “determine the need for modifications in the structures and operations of [water resources] projects for the purpose of improving the quality of the environment in the public interest and to determine if the operation of such projects has contributed to the degradation of the quality of the environment.” Pub. L. No. 99-662, § 1135(a), 33 U.S.C. § 2309a(a). Subject to certain cost-sharing requirements, the Corps also may modify “the structures and operations” of the Corps’ water resources projects, if such structures and operations “(1) are *feasible and consistent with the authorized project purposes*, and (2) will improve the quality of the environment in the public interest.” Pub. L. No. 99-662, § 1135(b), 33 U.S.C. § 2309a(b) (emphasis added). Further, if the Corps finds that a Corps project “has contributed to the degradation of the quality of the environment,” then the Corps may implement “measures for restoration . . . and . . . enhancement of environmental quality that are associated with the restoration . . . *if such measures do not conflict with the authorized project purposes.*” Pub. L. No. 99-662, § 1135(c), 33 U.S.C. § 2309a(c) (emphasis added). The emphasized portions of these statutes clearly demonstrate Congress’ intent for modifications for environmental purposes not to supplant the federally authorized purposes of a project, i.e., navigation.

Section 204 of the 1992 Water Resources Development Act authorizes the Corps, subject to certain cost-sharing requirements, to “carry out projects for the protection, restoration, and creation of aquatic and ecologically related habitats, including wetlands, in connection with dredging for construction, operation, or maintenance by the Secretary of an authorized navigation project.” Pub. L. No. 102-580, § 204(a), 33 U.S.C. § 2326(a). The Corps may undertake such projects if the Corps finds “(1) the environmental, *economic*, and *social* benefits of the project, both *monetary* and nonmonetary, justify the cost thereof; and (2) the project would not result in environmental degradation.” Pub. L. No. 102-580, § 204(b), 33 U.S.C. § 2326(b) (emphasis added). This section also allows the Corps, with the non-federal party’s consent, to select “a disposal method that is *not* the least-cost option *if* . . . the incremental costs . . . are *reasonable* in relation to the environmental benefits, including the benefits to the aquatic environment to be derived from the creation of wetlands and control of shoreline erosion.” Pub. L. No. 102-580, § 204(e), 33 U.S.C. § 2326(e) (emphasis added). Thus, while this section authorizes, it *does not require*, habitat improvement projects, and then only after consideration of economic and other impacts. The statute’s presumption in favor of a least-cost option further emphasizes Congress’ intent to take into account pragmatic considerations, i.e., reasonableness in light of cost. Nowhere in this provision is there any suggestion that a habitat improvement project may supplant or impede the primary authorized purpose of a project, i.e., navigation.

As another example, Section 206 of the 1996 Water Resources Development Act authorizes the Corps, subject to certain cost-sharing and other requirements, to “carry out an aquatic ecosystem restoration and protection project” if the project “(1) will improve the quality of the environment and is in the public interest; and (2) is cost-effective.” Pub. L. No. 104-303, § 206(a), 33 U.S.C. § 2330(a). Once again, this provision explicitly requires consideration of

cost and does not allow concerns for the management of dredged material to supplant or impede an authorized project purpose.

A number of other federal statutes provide the Corps continuing authority to take necessary actions associated with maintaining waterways for navigational purposes. All of these statutes authorize activities in association with channel maintenance activities, and none allows the Corps to avoid such activities based on concerns associated with the management of dredged material. Section 205 of the 1948 Flood Control Act authorizes the Corps to implement “small structural and nonstructural projects for flood control and related purposes.” Pub. L. No. 80-858, § 205, 33 U.S.C. § 701s. Section 207 of the 1954 Flood Control Act authorizes the Corps to “remove accumulated snags and other debris” and to “clear[] and straighten[] the channel in navigable streams . . . when in the opinion of the Chief of Engineers such work is advisable in the interest of flood control.” Pub. L. No. 83-780, § 207, 33 U.S.C. § 701g. Section 14 of the 1946 Flood Control Act authorizes “construction, repair, restoration, and modification of emergency streambank and shoreline protection works” to prevent damage to certain public works. Pub. L. No. 79-526, § 14, 33 U.S.C. § 701r. Section 107 of the 1960 River & Harbor Act provides authority to construct “small river and harbor improvement projects not specifically authorized by Congress which will result in substantial benefits to navigation.” Pub. L. No. 86-645, § 107, 33 U.S.C. § 577. Section 103 of the 1962 River & Harbor Act authorizes “construction of small shore and beach restoration and protection projects not specifically authorized by Congress.” Pub. L. No. 87-874, § 103, 33 U.S.C. § 426g. Under section 111 of the 1968 River & Harbor Act, the Corps may, among other things, “implement structural and nonstructural measures for the prevention or mitigation of shore damage attributable to Federal navigation works,” subject to certain other provisions. Pub. L. No. 90-483, § 111, 33 U.S.C. §

426i. None of these statutes imposes any impediment to proper navigation maintenance of the ACF project, nor do they provide any excuse to the Corps for failing to do so.

The statutes described above offer a clear picture of the Corps' responsibilities with respect to navigation and flood control projects. The Corps is authorized to consider certain environmental issues, and the Corps may even undertake certain enumerated projects and actions for the benefit of the environment. However, Congress provided no indication of intent or authority for the Corps to abandon the primary, Congressionally mandated purposes of Corps projects. To the contrary, these statutes demonstrate that Congress intends for the Corps to carry out environmentally related functions *in conjunction with* its primary duty to operate and maintain navigation projects for their intended purposes.

### 3. Section 404(t) of the Clean Water Act and Related Provisions

As a further indication of Congressional intent for the Corps to maintain authorized navigation projects, Congress explicitly limited the application of various environmental requirements where they conflict with the Corps' basic channel maintenance activities. Sections 404(t) and 511(a) of the Clean Water Act ("CWA"), 33 U.S.C. §§ 1344(t), 1371(a), explicitly provide that the wetlands program specifically and the CWA as a whole do not prevent the Corps from carrying out activities necessary to ensure navigation on the Corps' projects.

Section 404 of the CWA governs permits for the discharge of dredged or fill material into navigable waters of the United States. Section 404(t) provides in full:

Nothing in this section shall preclude or deny the right of any State or interstate agency to control the discharge of dredged or fill material in any portion of the navigable waters within the jurisdiction of such State, including any activity of any Federal agency, and each such agency shall comply with such State or interstate requirements both substantive and procedural to control the discharge of dredged or fill material to the same extent that any person is subject to such requirements. *This section shall not be*

*construed as affecting or impairing the authority of the Secretary to maintain navigation.*

33 U.S.C. § 1344(t) (emphasis added).

Further, Section 511(a) of the CWA, which applies more broadly to the entire Act, provides in relevant part:

[The Clean Water Act] *shall not be construed as* (1) limiting the authority or functions of any officer or agency of the United States under any other law or regulation not inconsistent with this chapter; [or] (2) *affecting or impairing the authority of the Secretary of the Army (A) to maintain navigation or (B) under the Act of March 3, 1899, (30 Stat. 1112); except that any permit issued under section 1344 of this title shall be conclusive as to the effect on water quality of any discharge resulting from any activity subject to section 403 of this title.*

33 U.S.C. § 1371(a) (emphasis added).

The intent of Congress in this regard is authoritatively stated in the remarks of Congressman Ray Roberts, who presented the Conference Report on the 1977 amendments to the CWA to the House of Representatives. He (together with the Manager of the Conference Report for the minority) offered a statement of intent of the House Conferees, as follows:

The Conference Report differs from the Senate provision in that it provides that it is not to be construed as affecting or impairing the authority of the Corps of Engineers to maintain navigation. *This provision is included in recognition of the possibility that there may be instances where State requirements relating to the disposal of dredged spoil may not be compatible with the responsibility of the Corps of Engineers to maintain navigation.* It is intended that the Corps will apply for a State permit where one is required and will make every reasonable effort to comply with State requirements. However, where these requirements cannot reasonably be met, *the Corps of Engineers has the authority to proceed with measures necessary to maintain navigation.*

123 CONG. REC. 38,970 (1977) (emphasis added).

This statement applies directly to the situation at hand. The Corps applied for a permit from the State of Florida. The State, however, was unreasonable in refusing to issue the permit

and, instead, attempted to force upon the Corps conditions which are not “compatible with the responsibility of the Corps of Engineers to maintain navigation.” Therefore, the Corps has discharged its obligations to the State of Florida under the Clean Water Act, and the Corps’ course of action now required by federal statute is clear: The Corps must maintain the ACF Project for navigation, notwithstanding the complaints or efforts to the contrary by the State of Florida or anyone else.

**B. Corps Regulations Provide a Road Map for Exercising Section 404(t) Authority**

For decades, the State of Florida, including FDEP and its predecessor agencies, issued permits for maintenance dredging along the Apalachicola River. However, on October 11, 2005, FDEP provided its conclusory and unsubstantiated “reasons for denial” of the Corps’ permit application, thereby unilaterally acting to end navigation on the Apalachicola River. Petitioner recognizes the Corps’ legal position as articulated in writing in 1998 when it stated: The Corps “does not consider itself to be an ‘applicant’ for any Florida DEP permit. . . . [W]e obviously do not recognize a state administrative proceeding or state court as having jurisdiction over the federal government.” Attachment A. Nevertheless, regardless of whether the Corps is subject to FDEP’s permitting procedures, the Corps has established a process for deciding whether to exercise its authority under CWA Sections 404(t) and 511(a) to maintain navigation where the Corps and a state disagree, as here, concerning a state issued permit.

The district engineer may prepare a report pursuant to 40 C.F.R. § 337.8 to be forwarded to the Office of the Chief of Engineers in Washington, D.C., for resolution. *See* 33 C.F.R. § 337.2(b)(3). This report, which generally takes the form of a letter, may be sent to Corps Headquarters “[w]hen the state denies or unreasonably delays a water quality certification.” *Id.* § 337.8(a)(4). The report may contain, among other things, “justification showing the economic

need for dredging,” the “impact on states outside the project area if the project is not dredged,” and “any other facts which will aid in determining whether . . . *to exercise the authority of the Secretary of the Army to maintain navigation as provided by sections 511(a) and 404(t) of the CWA if the disagreement concerns water quality certification or other state permits.*” *Id.* § 337.8(b)(1)-(5) (emphasis added).<sup>1</sup>

The Corps’ regulations indicate that, as the recipient of the report, the Chief of Engineers is the official authorized to exercise the override. *Id.* § 337.2(b)(3). However, the preamble to these regulations also explains that the “district engineer is the ultimate decision maker for Corps maintenance dredging and disposal activities.” 53 Fed. Reg. 14902, 14910 (April 26, 1988) (Final Rule for Operation and Maintenance of Corps Civil Works Projects). The preamble further explains:

The district engineer must consider a multitude of factors primarily relating to whether the project is in the Nation’s best interest. Although the state may withhold or deny water quality certification . . . , such actions by the state do not replace the district engineer’s decision-making authority. The district engineer may elect to override a state’s denial of a request for water quality certification using the CWA section 511(a) or 404(t) provisions . . .

*Id.* Therefore, there is requisite statutory and regulatory authority for both the district engineer and the Chief of Engineers to exercise the Corps’ override authority. *See* 33 C.F.R. § 337.8(a)(4). No further relevant Corps guidance on this issue has been identified. Consequently, this petition has been addressed to both the Mobile District Engineer and the Corps’ Chief of Engineers in Washington, D.C.

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<sup>1</sup> The Corps has also recognized that exercise of an override may be required in situations where, as here, Congress has authorized federal funds for a dredging project. *See* 53 Fed. Reg. 14902, 14909 (April 26, 1988) (“We do not dispute or disagree with a state’s right to protect its water quality. At the same time, the Corps has a responsibility to assure that Federal funds are used to carry out authorized Federal purposes.”); *see also* 16 U.S.C. § 1456(c) (requiring federal agencies to maintain consistency with state coastal zone programs only to the extent “practicable”); 43 U.S.C. § 1314(a) (reserving for the United States a navigational servitude on state sovereign lands).

**C. The Past, Present and Future Economic Impact of this Project Justifies the Exercise of Section 404(t) Authority**

The ACF Project was authorized by Congress for the express purpose of “navigation” and “stabilization of employment.” From the project’s inception, Congress understood the economic importance of this waterway to both present and future economic opportunities. Thirty years ago, the Corps issued a bleak forecast for commercial navigation in the region, *if Florida’s disdain for the Apalachicola River navigation project were ever to prevail*:

Those stretches of the river subject to periodic maintenance dredging would silt in and commercial barge traffic would be restricted to periods of high water. Hazards to navigation would increase with no snagging of the stream. Much of the benefit of the project for commercial navigation would be lost, and the project could not be developed to its economic capacity. Again, as in the first alternative, industries in the area dependent upon water transportation would be stressed. *When the enormous economic investment in the project is considered, abandoning maintenance dredging of the navigation channel would be a highly questionable course of action.*

Final Environmental Statement, Apalachicola-Chattahoochee-Flint Rivers, Alabama Florida and Georgia (Operation & Maintenance) at 46 (1976) (“1976 Environmental Statement”) (emphasis added). As early as 1983, this “enormous economic investment” was estimated at \$2 billion. *See* Testimony of E. E. Bishop, Sr., President of Tri Rivers, before the Water Resources Subcommittee of the House Committee on Public Works and Transportation on July 13, 1982. As Mr. Bishop testified:

Repeatedly, prospective shippers have given up on the waterway, most recently under direct threat of harassment by an environmentalist group which includes in its membership the secretary of the Florida [Department of Environmental Regulation].

Industries and agricultural services which committed themselves to the waterway on the promise that the authorized channel would be provided, have suffered severe penalties. These shippers deal in basic commodities: Fertilizer; soybeans and grain; paper, much of

which goes for export; carbon black for the manufacture of tires; sand and gravel; electrical power; ships for oil exploration; and river barges. They represent a private investment of more than \$2 billion in facilities along the waterway. Penalties to them hurt the people of the ACF basin and deprive of job opportunities a region which has not yet reached the national average family income.

*Id.* Of course, as the Corps also recognized, Florida alone is not legally empowered to shut down commercial navigation of the Apalachicola River: “The justification of the project dimensions was evaluated before project authorization. Any change in the authorized dimensions would require an economic and operational re-evaluation of its feasibility and, if feasible, *reauthorization of the project.*” 1976 Environmental Statement at 47-48 (emphasis added).

More recently, the Corps prepared a report entitled, “Economic Impact of Operations and Maintenance Dredging on the Apalachicola-Chattahoochee-Flint Waterway” (Attachment E), which “depict[s] the benefits” of continued dredging in this river system, especially the “navigation portion of the project” from the Gulf Intracoastal Waterway, up the Apalachicola River to the confluence of the Chattahoochee and Flint Rivers, and continuing up those rivers to Columbus and Bainbridge, Georgia. The Corps report concluded that “there has been adequate historic demand for shipping on the ACF” to justify the continued operation of this project. *Id.* at 3. This document significantly understates the potential for economic benefit to the region by relying exclusively on a handful of specific anecdotes and insufficiently accounting for the potential for growth of highly competitive methods of container shipping and other barge traffic. Even so, the Corps report explains how a business which relies on barge shipping will be forced to relocate out of the area if the ACF Project is not maintained for navigation, and it identifies for the year 2006 alone \$11.8 to \$13.8 million in benefits linked to the Corps’ maintenance dredging activity.

If the Corps does not conduct this navigation maintenance, including dredging and removal of obstacles (snags) from the navigation channel, navigation on the ACF Project is severely impeded, at great economic costs to those entities who rely on this important interstate waterway for commerce. *See* Moorer Affidavit, at ¶ 8 (included in Attachment C). Barge shipping is often the most economic form of transport for businesses and industries in southeastern Alabama and southwestern Georgia. Other transportation modes – most notably trucking and rail – are reaching full capacity, raising concerns about the cost, reliability and availability of those modes. Further, even where those modes may be available, the existence of viable barge shipping options applies competitive pressure to keep trucking and rail rates reasonable.

These issues are important not only for existing businesses, but also for new business development and future economic growth throughout the region. Just in the past several months, for example, the Development Authority of Bainbridge and Decatur County has received a half-dozen inquiries from manufacturing, distribution, and agricultural businesses interested in locating in that area specifically because of the barge terminal facilities. Right now, there are unique business opportunities associated with the coastal rebuilding efforts in Louisiana, Mississippi, and Alabama, in the wake of Hurricane Katrina. Barge shipping is crucial for communities along the ACF Project to participate in these opportunities.

Availability of barge shipping is also critical to existing businesses in the area. For example, Southern Nuclear Company has shipped extremely large pieces of industrial equipment using the Apalachicola River navigation channel in 2000 and again as recently as early 2006, as part of a \$360,000,000 replacement project at its Farley Nuclear Plant in Dothan, Alabama. *Id.* at ¶ 6. Southern Nuclear Company relies on the ACF waterway as *the* safe and economic mode

of transporting its equipment. Specifically, as a representative of Southern Nuclear Company explained:

5. Southern Nuclear, a wholly owned subsidiary of Southern Company, operates three nuclear power plants in Alabama and Georgia. The Farley Nuclear Plant is owned by Alabama Power Company and provides 1,776 megawatts of baseload generation to Southern Company customers. The Farley Plant is located near Columbia, Alabama on the West bank of the Chattahoochee River.

6. Plant Farley regularly depends on the availability of the federally authorized navigation channel in the ACF River Basin, including critical reaches of the Apalachicola River directly related to FDEP's denial of the Corps permit, for delivery and shipment offsite of large pieces of equipment vital to the operation of the facility. Most of the large equipment for the original plant construction was delivered by barge in the ACF River Basin. In 2000, Plant Farley received replacement steam generators by barge in the ACF River Basin to complete a 360 million dollar replacement project to ensure the availability of Plant Farley long into the future. A shipment is planned in early 2006 to remove the Unit 1 and Unit 2 reactor vessel heads from the site for disposal. This shipment must again traverse the Apalachicola River, including the portions in which dredging was proposed by the Corps and refused by FDEP in its permit denial. The reactor vessel heads were replaced as part of a long-term plan to upgrade the plant.

7. Plant Farley's operating licenses were recently extended for an additional twenty years. The Farley site has been identified by Southern Company as a potential site for new baseload generation, including new nuclear facilities. The presence of the ACF navigation channel greatly enhances the Farley site relative to potential for new generation.

8. Plant Farley is substantially and adversely affected by the recent denial of the Corps Maintenance Dredging Permit. The Corps' ability to provide the required 9 by 100 foot navigation channel requires maintenance of several small, but critical reaches of the Apalachicola River to ensure adequate channel depths. If the Corps does not conduct this maintenance, including dredging and removal of obstacles (snags) from the navigation channel, the ability to provide navigation on the ACF River Basin is severely impeded. When the need to transport equipment occurs, as demonstrated in the two above examples, other feasible

alternatives do not exist and the shipments have multi-million dollar values.

9. Plant Farley regularly depends on the availability of the federally authorized navigation channel in the ACF River Basin, including critical reaches of the Apalachicola River directly related to FDEP's denial of the Corps permit, for delivery.

Moorer Affidavit, at ¶¶ 5-9 (included in Attachment C). This is a good example of how halting or unduly restricting navigation channel maintenance activities would decrease the window of availability of shipments (or prevent them altogether), and increase the risks associated with such shipments.

Mead-Westvaco Corporation faces a similar situation:

11. Mead-Westvaco is one of the major producers of Liner Board in the world. It operates the Mahrt Mill located south of Phenix City, Alabama on the West bank of the Chattahoochee River. The Mahrt Mill is located within the Lake Eufaula (Walter F. George) reservoir. Flow past the mill is controlled primarily by releases from the Walter F. George Dam. In the past, the Mahrt Mill has depended heavily on the ACF channel for delivery of fuel oil for the plant.

12. Mead-Westvaco was forced to seek alternate means for delivery following the droughts of the mid-1980s as the dependability of the ACF channel became unreliable. This lack of reliability has a direct relationship to problems between the Corps and Florida over channel maintenance in the critical reaches of the Apalachicola discussed previously, including most recently the subject permit denial. Mead-Westvaco fully believes that resolution of these issues can return the ACF to levels of reliability that will support continued use by the Mahrt facility.

13. The ability to utilize the ACF navigation channel provides potential savings to Mead-Westvaco's facilities in lower cost for material delivery and shipments. In addition, the viability of navigation and transporting these materials on the Apalachicola provides beneficial pressure on other modes of transport to ensure performance and keep rates low. The ability to move large pieces of equipment to and from the mill is also important and the ACF channel provides the only feasible option for certain types of equipment.

14. Mead-Westvaco is substantially and adversely affected by the permit denial. The inability to properly maintain the navigation channel exerts additional pressure on current shipping rates and therefore, costs. In addition, future options for use of navigation, including the possible need for delivery of large equipment, is compromised by the inability for the Corps to properly maintain the navigation channel.

Moorer Affidavit, at ¶¶ 10-14 (included in Attachment C).

Likewise, so does Georgia-Pacific:

16. Georgia Pacific operates a liner board/corrugating medium mill located in Early County Georgia in Cedar Springs on the east bank of the Chattahoochee River. The mill began operation in 1963 as Great Southern Paper and was acquired by Georgia Pacific in 1991. The mill has approximately 750 employees, occupies over 1400 acres and produces over 1 million tons per year of product. The mill exports product to box plants in the United States and throughout the world. The mill utilizes over 1.4 million cords of wood per year and provides over \$100,000,000 dollars in goods and services to the local economy.

17. As with Mead Westvaco, in the past Georgia Pacific's Cedar Springs Mill depended on the navigation channel for delivery of fuel, raw materials, and for shipment of product. As the reliability of the navigation channel decreased, Georgia Pacific was forced to use alternate means of transport. However, Georgia Pacific believes that the reliability problems are directly related to problems between the Corps of Engineers and Florida over channel maintenance, including, most recently, the subject permit denial, and that these problems can be solved.

18. Georgia Pacific is substantially and adversely affected by the subject permit denial. The viability of navigation and transporting these materials on the Apalachicola River provides potential cost savings to the plant and provides beneficial pressure on other modes of transportation. The inability of the Corps of Engineers to maintain the system as a result of the permit denial has immediate impact on Georgia Pacific in that it precludes use of navigation and thus decreases competition for other transport modes. This increases cost and schedule for delivery for key items needed by the mill. It also compromises the ability to deliver large equipment to the mill, if needed.

Moorer Affidavit, at ¶¶ 16-18 (included in Attachment C).

The City of Columbus, Georgia, and the City of Eufaula, Alabama, also rely heavily on the ACF river system:

20. Columbus is located in Muscogee County Georgia on the East bank of the Chattahoochee River. The Chattahoochee River was a key element in all commerce associated with Columbus. Columbus strongly supports maintaining the ACF navigation channel. Recently, a project was begun to construct a marina in Columbus that would provide facilities for berthing of large craft. The success of this marina project is largely dependent on the ability for these vessels to navigate to and from the Gulf of Mexico via the ACF navigation channel and, specifically, the Apalachicola River. FDEP's denial of the Corps' maintenance dredging permit will preclude the necessary channel maintenance required to ensure access of the new marina to the Gulf of Mexico, affecting substantial economic, recreational and educational interests. There are also a number of businesses in the Columbus area that in the past have relied on the navigation channel and still desire to use navigation. Columbus has a port facility under the direction of the Georgia Ports Authority that has been considered for upgrade a number of times, but the upgrades have not gone forward due to concerns over system reliability. In the 1980s, the Port of Columbus provided significant receipt and storage of fuel going to Fort Benning, and other products for local industry and agriculture use. The lack of proper maintenance drives system reliability. New efforts to revive the port are ongoing. Water transportation has significant fuel efficiency and environmental benefits over rail and highway transportation. Denial of the maintenance permit will substantially and adversely affect navigation as an option to these business interests.

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22. Very much like Columbus, Eufaula is also an original rivertown. In 1963, the Corps of Engineers constructed Lake Eufaula (Walter F. George) and restored the inland port at Eufaula that had been so important during the 19th until the mid-20th century.

23. Eufaula has preserved and restored many of the beautiful antebellum homes and historic structures in the city and has developed a significant tourism industry. The river is an important part of Eufaula's historic past and supports key programs such as Voyage of Discovery and Riverway South. Access to the navigation channels remains critical to these historical,

environmental and educational programs, as well as aspects of Eufaula's economic base.

24. Eufaula, like Columbus, is substantially harmed by the denial of the Corps' navigation maintenance permit. Eufaula has a number of interests in maintaining the navigation channel including LakePoint Marina, a state facility that provides a number of large berths for vessels that routinely travel to the Gulf and back. The Historical and Eco-tourism industries are of interest to Eufaula, growing, and they both depend, in large part, on the ability to navigate the entire ACF system, including the Apalachicola River. The inability to maintain the small, but critical reaches in the Apalachicola will potentially result in loss of the federally authorized navigation channel on the ACF.

Moorer Affidavit, at ¶¶ 20-24 (included in Attachment C).

The importance of the ACF river system is not limited to just purely economic interests.

Oxbow Meadows Environmental Learning Center relies on the navigability of this system as well:

Oxbow Meadows is an outreach program of Columbus State University. Since 1997, Oxbow Meadows has been working to develop a nature/cultural tourism program within the Apalachicola-Chattahoochee-Flint (ACF) watershed. To this end, Oxbow Meadows has initiated the development of two specific organizations that work to promote the tourism resources associated with the river system (Voyage of Discovery, Inc. and RiverWay South). In 1998, Oxbow Meadows spearheaded the formation of Voyage of Discovery, Inc. (VOD), a 501(c)3 organization whose purpose is to foster river-centered connections and partnerships within and among communities and organizations in the Apalachicola-Chattahoochee-Flint (ACF) watershed. Since that time, Oxbow and VOD have provided citizens in the ACF watershed opportunities to travel that watershed from Columbus to Apalachicola by boat and have sponsored educational and informational programs highlighting the potential for cultural/historic/nature-based tourism, navigation, and recreation on and along the ACF river system. In order to effectively promote and coordinate such river-related activities, VOD has also encouraged linkage and communication among riverside communities, governments, organizations, and businesses within the system.

In addition to helping protect the natural, cultural and historic resources associated with these rivers, VOD seeks to use the tourism products to spur sustainable economic development, particularly in the counties of southwestern Georgia and southeastern Alabama south of Columbus, and the Florida panhandle. According to Congressional reports initiated by former Senator Zell Miller (GA), these counties are the 9th poorest in the nation. This three-state tourism effort has served as a springboard for discussion and activity particularly related to recreation and navigation on the ACF system and the maintenance of dredging on the river system. These efforts focus on developing a sustainable tourism business that will not “kill the goose that laid the golden egg.” The goal is to develop a program of sustainable economic development that will spur an economic revolution in the tri-state region within the ACF watershed.

To accomplish this challenging economic development goal VOD hired Randall Travel Marketing, Inc. (RTM), one of the most respected travel development firms in the country, to conduct a study of the ACF river system and its adjacent communities to determine whether a river-centered, ecologically sustainable nature/heritage tourism effort could be successful in our region. After collecting extensive data on resources of the watershed, touring the ACF system by boat and car, conducting interviews with 36 civic, political and business leaders, and hosting two focus forums with 56 respondents in Atlanta, RTM reported a resounding YES answer to the question.

In 2003 and 2005, VOD applied for and received \$200,000+ in funding through the US Department of Agriculture’s Rural Business Opportunity Grant Program. An Executive Director was hired and these federal funds are now being used to help spur nature/cultural tourism in these depressed counties in the ACF watershed in Georgia, Alabama, and Florida.

Moorer Affidavit, at pp. 9-10 (included in Attachment C).

As demonstrated by the preceding affidavit, many entities along the ACF Project stand to suffer immediate and irreparable economic, environmental, educational, recreational, and other types of harm from the Corps’ permit denial. In addition to losing the navigability of the ACF Project, Florida’s permit denial will have a collateral adverse financial impact on economic interests all along the waterway. Specifically, the availability of the Apalachicola River for

barge shipments provides a basis to negotiate more favorable terms and conditions for other modes of transportation, such as rail and trucking. Moorer Affidavit, at ¶¶ 8, 13, 14, 18. These economic injuries will be compounded if the Corps fails to exercise its Congressionally mandated authority to maintain the navigability of this river system.

**D. The Corps Has Received More Than Adequate Annual Federal Funding for Channel Maintenance on the Apalachicola River**

Year after year, various members of Tri Rivers have traveled to Washington and met with members of Congress, in particular the members of the House and Senate Appropriations Committees, to support adequate funding for dredging and other Corps activities necessary to operate and maintain the ACF Project for navigation. Thanks in large part to Tri Rivers' efforts, Congress has fully funded the ACF Project in recent years. In fact, since 1998, each year's federal appropriations have substantially exceeded the Administration's budget requests. Those annual appropriations, based on the line items designated for operation and maintenance of the ACF Project in each year's appropriations Conference Reports, are as follows:

<b>Fiscal Year</b>	<b>Budget Request</b>	<b>Appropriation</b>	<b>Increase</b>
1998	\$4,741,000	\$6,500,000	\$1,759,000
1999	4,700,000	5,200,000	500,000
2000	5,830,000	6,500,000	670,000
2001	5,055,000	6,755,000	1,700,000
2002	1,237,000	12,900,000	11,663,000
2003	1,444,000	4,709,000	3,265,000
2004	1,500,000	5,000,000	3,500,000
2005	117,000	5,231,000	5,114,000
2006	1,050,000	2,500,000	1,450,000
<b>TOTALS:</b>	<b>\$25,674,000</b>	<b>\$55,295,000</b>	<b>\$29,621,000</b>

Maintenance dredging is a significant component of the operation and maintenance activities which Congress provided in these annual appropriations bills. Moreover, Congressional report language in a number of years has directed the Corps to devote substantial portions of these annual funds specifically for dredging activities on the ACF Project. For

example, the Conference Report for fiscal year 2001 included \$1,200,000 for “increased environmental dredging.” The Conference Report and statutory language for fiscal year 2002 included \$4,900,000 for a dredged material management plan, in addition to a very large appropriation for other operation and maintenance activities. The Conference Reports for fiscal years 2003, 2004, and 2005 specifically referenced dredging as among the activities which were funded by Congress in each of those years.

Nevertheless, as discussed above, the Corps has not dredged critical portions of the Apalachicola River since 2001. (By letter dated January 24, 2006, the Tri Rivers Waterway Development Association has requested the Mobile District Engineer to explain this discrepancy between Congressional appropriations and the lack of Corps activity pursuant to such funding. This letter is included as Attachment F.) The Corps’ failure to conduct necessary annual maintenance dredging has led many users and potential users of the ACF Project to have serious concerns about the reliability of the navigation channel. As a result, shippers and other users of the river system have declined precipitously in recent years. The Corps itself concedes that the decreased usage is a direct result of the Corps’ failure to maintain the project adequately: “The significant drops in both traffic and tonnage, especially between 2001 and 2005, reflect the unavailability of the river system due to a lack of dredging. During that time, many companies went to truck and rail, which is a more expensive means of transportation.” Attachment E, at 3.

Opponents of navigation on the ACF Project now use the present low shipment volumes to argue that further ACF navigation maintenance is not cost-effective. If the Corps continues in its failure to maintain the ACF Project’s navigation channel, there is a serious risk that Congress will cut future appropriations for that purpose. In fact, the fiscal year 2006 Conference Report provides an ominous indication that this worst case scenario may already be underway. The

report at page 108 states: “The conferees understand that the State of Florida has denied the Corps a State Water Quality Certification; therefore, no funds are provided for dredging this waterway in Florida.” As previously discussed, the Corps has taken no action to appeal or to override the state’s water quality certification denial. Nor are we aware of any other action by the Corps directed toward accomplishing the dredging activities which Congress has generously funded and explicitly directed the Corps to accomplish each year for the past decade. The Corps’ past inaction should not prevent the Corps from now carrying out its mandated responsibilities as sought by this petition.

#### IV. CONCLUSION

Petitioner respectfully submits that the time has come for the Corps to do its job to keep the ACF Project reliably maintained for its intended and Congressionally authorized purpose, namely, navigation. As this petition amply demonstrates, there is no valid legal authority impeding the Corps from fulfilling its mission of maintaining navigation on the ACF Project. Rather, the authority of the Secretary of the Army acting through the Corps to maintain navigation overrides any contrary authority or effort exerted by the State of Florida or any other party.

Respectfully submitted,

*Thomas C. Moorner*  
*by Steven A Burns with*  
 Thomas C. Moorner *express permission.*  
 President  
 Tri Rivers Waterway Development Association

March 2, 2006

## LIST OF ATTACHMENTS

- A. Letter from the Mobile District to Tri Rivers Waterway Development Association (Dec. 15, 1998).
- B. Mid-Chattahoochee River Users, Petition to Florida Department of Environmental Protection (Nov. 10, 2005).
- C. Mid-Chattahoochee River Users, Amended Petition to Florida Department of Environmental Protection (Dec. 8, 2005).
- D. Florida Department of Environmental Protection, Denial of Petition with Prejudice (Jan. 12, 2006).
- E. Corps of Engineers, Economic Impact of Operations and Maintenance Dredging on the Apalachicola-Chattahoochee-Flint Waterway (not dated).
- F. Letter from Tri Rivers Waterway Development Association to the Mobile District (Jan. 24, 2006)



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

December 15, 1998

REPLY TO  
ATTENTION OF:  
Office of Counsel

SUBJECT: Notice of Intent

TriRivers Waterway Development Association  
PO Box 2232  
Dothan, Al. 36302

*Via Facsimile*

Dear Sirs:

Please reference prior discussion among Ms. Deborah Shoemake of this office, Ms. Rebecca Martin, your Executive Director, and Mr. Homer Hirt, concerning Florida Department of Environmental Protection's (FDEP) Notice of Intent concerning the Mobile District's "permit" for dredging and maintaining the Apalachicola River. I am providing this letter to you at the request of Ms. Martin and Mr. Hirt.

The Mobile District Corps of Engineers does not consider itself to be an "applicant" for any Florida DEP permit. However, pursuant to the Clean Water Act, we must request and receive water quality certification from Florida in order to dredge. Since we do not recognize Florida's permit requirements as pertaining to the federal government, we obviously do not recognize a state administrative proceeding or state court as having jurisdiction over the federal government.

In a situation where we dispute terms connected to the water quality certification, and the issue can not be resolved between the state and the Corps, then the Corps remedy would be to file an action in federal court. As I am sure you will understand a decision to file such an action can not be made unilaterally by this District. Instead there must be full coordination and concurrence with Division and Headquarters. If Headquarters concurs, then there must be coordination and concurrence with the Department of Justice and the appropriate United States Attorney.

If this office may provide any further information please contact Ms. Deborah Shoemake at 334-690-2491.

Sincerely,

A handwritten signature in black ink, appearing to read "AWB", followed by a long horizontal line extending to the right.  
Thomas W. Burt  
District Counsel

**STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION**

In the Matter of an  
Application for Permit/Water Quality Certification,  
and Authorization to Use Sovereign Submerged Lands by:

<b>APPLICANT:</b>	<b>PROJECT NAME:</b>
Curtis M. Flakes	Apalachicola River Maintenance Dredging
Chief, Planning and Environmental Division	File No. 0129424-005-DF
U.S. Army Corps of Engineers, Mobile District	Multiple Counties
P.O. Box 2288	
Mobile, AL 36628-0001	

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**PETITION FOR ADMINISTRATIVE HEARING  
AND, IF REQUIRED BY LAW, REQUEST FOR ENLARGEMENT OF TIME**

Mid-Chattahoochee River Users (“Petitioner”) hereby petitions the Florida Department of Environmental Protection (“Department”) for an administrative hearing on the Department’s Consolidated Notice of Denial, Wetland Resource Permit and Authorization To Use Sovereign Submerged Lands (“permit denial”), signed on October 11, 2005, by Colleen M. Castille, Secretary of the Department. Petitioner believes that it is filing this petition within the time allowed by law, including the Department’s rules of procedure. If, however, the Department finds that the time for a petition for an administrative hearing has expired, Petitioner also requests an enlargement of time to file this petition.

**I. IDENTIFICATION OF PETITIONER**

Petitioner is an unincorporated association of businesses, local governments, and public utilities who share an interest in the use of the Chattahoochee and Apalachicola Rivers, including navigation on the Chattahoochee and Apalachicola Rivers.

## **II. MANNER OF PETITIONER'S RECEIPT OF NOTICE OF THE PERMIT DENIAL**

Petitioner did not receive written notice of the permit denial, nor is Petitioner aware of any other form of notice that is legally sufficient with respect to Petitioner, whose substantial interests are adversely affected as described in part III *infra*. Petitioner has obtained actual notice of the permit denial by word of mouth.

## **III. PETITIONER'S SUBSTANTIAL INTERESTS**

Petitioner has substantial interests that are adversely affected by the permit denial. Among the uses of the Chattahoochee and Apalachicola Rivers exercised by Petitioner's members is the use of the rivers for navigation from points along the Chattahoochee River to and from the Gulf of Mexico, by way of the Apalachicola River. The Corps' maintenance dredging activities, forbidden by the permit denial, are necessary to maintain a channel in the river sufficient for the activities undertaken by Petitioner's members. Failure to conduct maintenance dredging will result in a decreased availability of the Apalachicola and Chattahoochee Rivers for commercial and private navigation, which will severely restrict Petitioner's members' ability to conduct activities that are central to their operations and interests. Some navigation could be rendered impossible in light of the failure to dredge the navigation channel.

## **IV. STATEMENT REGARDING THE FACTS**

The Corps seeks to dredge the river bottom to maintain a channel for navigation in a manner consistent with its historical practices and legal obligation and mission. This process entails removing dredged material and depositing that material elsewhere. It will be necessary to review the Department's record with respect to the permit denial to determine whether Petitioner would dispute any of the factual matters associated with the Corps' proposed activities or the environmental consequences of those activities.

## **V. LEGAL BASIS FOR REVERSAL OR MODIFICATION OF PERMIT DENIAL**

To the best of Petitioner's knowledge and understanding, the permit denial is in violation of federal law authorizing the Corps to maintain the Apalachicola River for purposes of navigability, as well as federal and state environmental laws, including laws regulating water quality and coastal zone management. Pending Petitioner's review of the record, Petitioner must assert that the permit denial may be in reliance on disputed facts or on findings of fact that are not supported by competent, substantial evidence. Given the effect of the permit denial on Petitioner and an absence of direct notice from the Department to the Petitioner, it would be unfair and, therefore, a material error in procedure not to grant the hearing in a fashion allowing Petitioner a meaningful opportunity of participation. Pending Petitioner's review of the record, Petitioner believes that the permit denial was inconsistent with law, beyond the Department's discretion, and otherwise in violation of the Florida Administrative Procedure Act.

## **VI. RELIEF SOUGHT**

Petitioner hereby requests that the Department grant this petition and set a schedule for conducting a hearing on the permit denial; that the Department provide a copy of the record associated with the permit denial; that the Department's schedule allow at least 30 days after Petitioner's receipt of the record, in order to meet Petitioner's need to review the record and to determine whether there are material facts at issue; that the Department allow Petitioner to amend and revise this Petition in response to its review of the record; and that the Department grant any other relief that it may find necessary or appropriate. If the Department finds that this request is out of time, Petitioner requests that the Department approve an enlargement of time for the filing of this petition. Petitioner ultimately requests that the Department reconsider the permit denial and issue the permit to the Corps in the above-noted proceeding.

## VII. CONCLUSION

For the foregoing reasons, Petitioner hereby requests that the Department grant the relief requested herein.

Sincerely,

A handwritten signature in black ink, appearing to read "Jeffrey H. Wood", is written over a horizontal line.

JEFFREY H. WOOD  
Attorney for Petitioner  
BALCH & BINGHAM LLP  
1901 Sixth Avenue North, Suite 2600  
Birmingham, Alabama 35203  
(205) 226-3405  
Florida Bar No. 0713333

Of Counsel  
C. Grady Moore, III  
Steven A. Burns  
BALCH & BINGHAM LLP

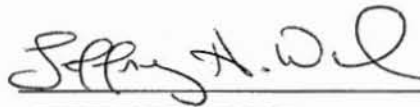
November 10, 2005

### CERTIFICATE OF SERVICE

I hereby certify that I have served a copy of the above and foregoing upon the following addressees by placing a copy of same in the United States mail, first-class postage prepaid, this 10th day of November, 2005:

Office of Counsel  
U.S. Army Corps of Engineers  
109 St. Joseph Street  
Mobile, Alabama 36601

Curtis M. Flakes  
Chief, Planning and Environmental Division  
U.S. Army Corps of Engineers,  
Mobile District  
P.O. Box 2288  
Mobile, Alabama 36628-0001



JEFFREY H. WOOD  
Attorney for Appellant

**STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MID-CHATTAHOOCHEE RIVER  
USERS,**

Petitioner,

v.

**STATE OF FLORIDA, DEPARTMENT  
OF ENVIRONMENTAL PROTECTION,**

Respondent.

**DEP OGC Case No. 05-2591**

DEP File No. 0129424-005-DF

**AMENDED PETITION FOR ADMINISTRATIVE HEARING**

Pursuant to the Order Dismissing Petition With Leave To Amend dated November 23, 2005 (“Order”), Mid-Chattahoochee River Users (“Petitioner”) hereby files this Amended Petition for Administrative Hearing with the Florida Department of Environmental Protection (“Department”) requesting an administrative hearing on the Department’s Consolidated Notice of Denial, Wetland Resource Permit and Authorization To Use Sovereign Submerged Lands (“permit denial”), signed on October 11, 2005, by Colleen M. Castille, Secretary of the Department. In accordance with the requirements for a petition established by Fla. Stat. § 120.54(5)(b)4 and Fla. Admin. Code r. 28-106.201(2), Petitioner states:

- (a) The following agencies are affected by this petition:

Bureau of Beaches & Coastal Systems  
Florida Department of Environmental Protection  
3900 Commonwealth Blvd., M.S. 300  
Tallahassee, Florida 32399-3000  
DEP File No. 0129424-005-DF

Planning & Environmental Division

U.S. Army Corps of Engineers, Mobile District  
P.O. Box 2288  
Mobile, Alabama 36628-0001

(b) Petitioner, Mid-Chattahoochee River Users, is an unincorporated multi-state association whose members are public and private corporations and associations in Alabama and Georgia. Mid-Chattahoochee River Users does not currently have a physical address. The name, address, and telephone number of Petitioner’s designated spokesperson is:

Thomas C. Moorer  
P.O. Box 1295  
Birmingham, Alabama 35201  
(205) 992-5807

Counsel and representative for Petitioner in this matter is:

Jeffrey H. Wood  
Balch & Bingham LLP  
1901 Sixth Avenue North, Suite 2600  
Birmingham, Alabama 35203  
(205) 226-3405

Standing: Petitioner’s substantial interests will be affected by the Department’s determination in this matter. Pursuant to Fla. Stat. § 120.569, any individual or entity aggrieved by an unfavorable agency determination may petition for an administrative hearing. Specifically, Fla. Stat. § 120.569 governs “all proceedings in which the substantial interests of a party are determined by an agency.” Fla. Stat. § 120.569(1). The term “party” is defined in Fla. Stat. § 120.52(12) to include “[a]ny other person . . . whose substantial interests will be affected by proposed agency action, and who makes an appearance as a party.” In other words, a third party, such as Petitioner in this case, may commence an administrative proceeding by filing a petition alleging that its “substantial interests” have been affected by an agency’s determination. *See* Richard M. Ellis, *Standing in Florida Administrative Proceedings*, 75 FLA. BAR J. 49, 50 (2001).

Neither the Florida Statutes nor the Florida Administrative Code defines the term “substantial interests.”

Florida courts, however, have defined “substantial interests” to mean that a petitioner must show: “1) that he will suffer injury in fact which is of sufficient immediacy to entitle him to a § 120.57 hearing, and 2) that his substantial injury is of a type or nature which the proceeding is designed to protect” (i.e., petitioner falls within the “zone of interests gleaned from the substantive regulatory scheme”). *Agrico Chemical Co. v. DER*, 406 So. 2d 478, 482 (Fla. 2d DCA 1981); Ellis, *supra*, at 50. Moreover, when an association is attempting to assert standing in an administrative proceeding, the association must demonstrate:

(a) that a substantial number of its members, although not necessarily a majority, are substantially affected by the proposed permits; (b) that the subject matter of the proposed permits is within the general scope of the interests and activity for which the organization was created; and (c) that the relief requested is of the type appropriate for the organization to receive on behalf of its members.

*Save Our Bays, Air & Canals, Inc. v. Tampa Bay Desal*, 2001 WL 1250892, \*35 (Fla. DOAH 2001) (citing *Florida Home Builders Assn., Inc. v. Dept. of Labor & Employment Sec.*, 412 So. 2d 351, 353-54 (Fla. 1982)).

Petitioner’s Substantial Interests (Injury in Fact): If the permit denial is not withdrawn, Petitioner will suffer injury in fact which is of sufficient immediacy to entitle Petitioner to an administrative hearing, and this substantial injury is of a type or nature which the proceeding is designed to protect. *Agrico*, 406 So. 2d at 482. Importantly, the “injury-in-fact part of the [standing] test focuses on whether the injury arising from the agency action is of a specific, real immediacy warranting relief and is not remote or speculative.” *Billie v. St. John’s River Water Management District*, 2004 WL 283505, at \*20 (Fla. DOAH 2004) (citing *Town of Palm Beach v. State Dept. of Natural Resources*, 577 So. 2d 1383 (Fla. 4th DCA 1981)).

First, if the permit is not issued in accordance with the terms and conditions of the recently-expired FDEP Permit No. 0129424-001-DF (and subsequent modifications to that permit) or under other acceptable terms and conditions, Petitioner's members will suffer immediate harm from the inability to navigate down the Apalachicola River. *See Moorer Affidavit*, at ¶4. The Corps' ability to provide the required 9 by 100 foot navigation channel requires maintenance of several small but critical reaches of the Apalachicola River to ensure adequate channel depths. *Id.* at ¶8. If the Corps does not conduct this maintenance, including dredging and removal of obstacles (snags) from the navigation channel, the ability to provide navigation on the ACF River Basin is severely impeded. *Id.* For example, one of Petitioner's members, Southern Nuclear Operating Company, intends to ship extremely large pieces of industrial equipment using the Apalachicola River navigation channel in early 2006, as part of a \$360,000,000 replacement project at one of its power plants. *Id.* at ¶6. Likewise, with respect to another of Petitioner's members, Mead-Westvaco Corporation, "[t]he ability to move large pieces of equipment to and from the [Mahrt Mill located south of Phenix City, Alabama on the west bank of the Chattahoochee River] is also important and the ACF channel provides the only feasible option for certain types of equipment." *Id.* at ¶13. Other members of Petitioner will suffer injury in fact which is of sufficient immediacy due to this permit denial, including Georgia Pacific Corporation, the Cities of Columbus, Georgia and Eufaula, Alabama, and Oxbow Meadows Environmental Learning Center. *Id.* at ¶¶16-25, and pp. 9-10.

In addition to losing the navigability of the ACF, the permit denial will have a collateral financial impact on Petitioner's members as well. *Fla. Bd. of Med. v. Fla. Acad. of Cosmetic Surgery, Inc.*, 808 So. 2d 243 (Fla. 1<sup>st</sup> DCA 2002) (finding that an association had standing to challenge a rule issued by the state board of medicine due to the "collateral financial impact on

the challenger's business"). Specifically, the availability of the Apalachicola River for shipping provides a basis to negotiate more favorable terms and conditions for other modes of transportation, such as rail and trucking. Moorer Affidavit, at ¶¶8, 13, 14, 18.

Petitioner's Substantial Interests (Zone of Interests): Petitioner's substantial injury is of a type or nature which the administrative hearing process is designed to protect, i.e., within the "zone of interests." The "zone of interest portion of the [standing] test focuses on whether the type of injury asserted falls within the scope of the agency's statutory authority to protect." *Billie*, 2004 WL 283505, at \*20 (Fla. DOAH 2004) (citing *Boca Raton Mausoleum Inc., v. State Dept. of Banking & Finance*, 511 So. 2d 1060 (Fla. 1st DCA 1987)). Petitioner's substantial interests fall within the "zone of interests" of the substantive regulatory scheme at issue in the permit denial. See *Ward v. Board of Trustees of the Internal Improvement Trust Fund*, 651 So. 2d 1236, 1238 (Fla. 4<sup>th</sup> DCA 1995) ("The general rule regarding the zone of interest element of the substantially affected test is that such element is met where a party asserts that a statute, or a rule implementing such statute, encroaches upon an interest protected by a statute or the constitution."). Whether the Apalachicola River remains a reliable channel for interstate navigation depends upon the validity of the Department's analysis of the substantive regulatory requirements underlying the permit denial, namely:

- The statutory and regulatory provisions governing the issuance of Wetlands Resource Permits pursuant to Fla. Stat. ch. 373 and Fla. Admin. Code ch. 62.
- The constitutional, statutory and regulatory provisions governing an authorization to use sovereign submerged lands for dredged material disposal sites pursuant to Fla. Const. art. X, § 11, Fla. Stat. chs. 253 and 258, and Fla. Admin. Code chs. 18-20 and 18-21.
- The statutory and regulatory provisions governing a consistency determination under the Florida Coastal Management Program.
- Congressional mandates, including Section 2 of the River and Harbor Act of March 2, 1945 (Public Law 79-14, 59 Stat. 10, 17) and Section 1 of the River and

Harbor Act of 1946 (Public Law 79-520, 60 Stat. 634, 635), to maintain the navigability of the Apalachicola River with a 9-foot-wide and 100-foot-deep channel.

Importantly, unlike the petitioner in *Agrico*, Petitioner's interests in this case are not "merely economic." *See Ellis, supra*, at 50 (explaining that "*Agrico* is sometimes misunderstood by administrative practitioners as denying standing to a petitioner whose interest is 'merely economic'"). *Compare Gregory v. Indian River County*, 610 So. 2d 547, 553-55 (Fla. 1<sup>st</sup> DCA 1981) ("In *Agrico*, the only real interest of the proposed intervenor was to preclude competition. That interest was totally unrelated to the environmental issues to be decided in the permitting proceedings. That is not the situation in this case."). In this case, Petitioner desires to "champion equitable, optimal use and good stewardship of the water resources" in the ACF River Basin, and to "enhance the quality of life in its members' communities through watershed planning in the ACF River Basin, including, specifically, enhancing economic opportunity and development, improving water quality and preservation of ecosystems, meeting multi-purpose environmental, public and industrial needs, protecting recreational resources, and providing input to state and regional planning processes." *See Moorer Affidavit*, at ¶2. "Preservation and promotion of navigation on the Apalachicola River in a manner that appropriately manages and stewards natural and environmental resources is central to the broad mission and more specific goals of the Mid-Chattahoochee River Users." *Id.*

Further, in *Agrico*, a business competitor opposed administrative approvals necessary for the shipment of a competing product. The competitor's business activities had no direct relation to the port improvements facilitated by the administrative approvals at issue, except to prevent those improvements as a means of inconveniencing or halting undesirable competition. Such is not the case with Petitioner and its members, who themselves rely directly on the very action for which the Corps sought approval from the Department – that is, maintenance of a navigable

channel in the Apalachicola River. Thus, Petitioner's substantial interests clearly fall within the requisite zone of interest of the various statutes and regulations at issue in this permit denial.

Associational Standing: Petitioner meets the requirements of associational standing.

First, a substantial number of Petitioner's members are substantially affected by the permit denial. As explained by Petitioner's authorized spokesperson:

3. The Mid-Chattahoochee River Users has 13 voting members responsible for the formation of the group and conducting its general business. The voting members of the Mid-Chattahoochee River Users are the Bainbridge Development Authority; the City of Eufaula, Alabama; West Point Lake Coalition; the City of La Grange, Georgia; Troup County, Georgia; the City of Columbus, Georgia; Chattahoochee Riverkeeper, Inc.; Georgia-Pacific Corporation; Tri-Rivers Waterway Development Association; Mead-Westvaco Corporation; the Oxbow Meadows Environmental Learning Center of Columbus State University; the Southern Company; and the City of Columbus Water Works.

4. As the authorized spokesperson for the Mid-Chattahoochee River Users, I have personal knowledge of the business of its members including how they are substantially affected by the State of Florida Department of Environmental Protection's (FDEP) Consolidated Notice of Denial Wetland Resource Permit and Authorization to Use Sovereign Submerged Lands filed on October 11, 2005. A substantial number of the members of Mid-Chattahoochee River Users are affected by the permit denial, including Southern Nuclear, a wholly owned subsidiary of the Southern Company, Mead-Westvaco Corporation (Mead-Westvaco), Georgia Pacific Corporation (Georgia Pacific), the City of Eufaula, Alabama (Eufaula), the City of Columbus, Georgia (Columbus) and the Oxbow Meadows Environmental Learning Center (Oxbow Meadows).

Moorer Affidavit, at ¶¶ 3-4. Mr. Moorer explained each of "[t]hese members' substantial interests in navigation in the Apalachicola and the dredging operations that form the basis of the subject permit." *Id.* at ¶4.

First, Southern Nuclear Operating Company is "substantially affected" by the permit denial:

5. Southern Nuclear, a wholly owned subsidiary of Southern Company, operates three nuclear power plants in Alabama and Georgia. The Farley Nuclear Plant is owned by Alabama Power Company and provides 1,776 megawatts of baseload generation to Southern Company customers. The Farley Plant is located near Columbia, Alabama on the West bank of the Chattahoochee River.

6. Plant Farley regularly depends on the availability of the federally authorized navigation channel in the ACF River Basin, including critical reaches of the Apalachicola River directly related to FDEP's denial of the Corps permit, for delivery and shipment offsite of large pieces of equipment vital to the operation of the facility. Most of the large equipment for the original plant construction was delivered by barge in the ACF River Basin. In 2000, Plant Farley received replacement steam generators by barge in the ACF River Basin to complete a 360 million dollar replacement project to ensure the availability of Plant Farley long into the future. A shipment is planned in early 2006 to remove the Unit 1 and Unit 2 reactor vessel heads from the site for disposal. This shipment must again traverse the Apalachicola River, including the portions in which dredging was proposed by the Corps and refused by FDEP in its permit denial. The reactor vessel heads were replaced as part of a long-term plan to upgrade the plant.

7. Plant Farley's operating licenses were recently extended for an additional twenty years. The Farley site has been identified by Southern Company as a potential site for new baseload generation, including new nuclear facilities. The presence of the ACF navigation channel greatly enhances the Farley site relative to potential for new generation.

8. Plant Farley is substantially and adversely affected by the recent denial of the Corps Maintenance Dredging Permit. The Corps' ability to provide the required 9 by 100 foot navigation channel requires maintenance of several small, but critical reaches of the Apalachicola River to ensure adequate channel depths. If the Corps does not conduct this maintenance, including dredging and removal of obstacles (snags) from the navigation channel, the ability to provide navigation on the ACF River Basin is severely impeded. When the need to transport equipment occurs, as demonstrated in the two above examples, other feasible alternatives do not exist and the shipments have multi-million dollar values.

9. Plant Farley regularly depends on the availability of the federally authorized navigation channel in the ACF River Basin, including critical reaches of the Apalachicola River directly related to FDEP's denial of the Corps permit, for delivery.

*Id.* at ¶¶5-9. Thus, to halt or unduly restrict channel maintenance activities will prevent shipments, decrease the window of availability of such shipments, increase risks associated with such shipments, or impose some combination of these undesirable effects.

Likewise, Mead-Westvaco is "substantially affected" by the permit denial:

11. Mead-Westvaco is one of the major producers of Liner Board in the world. It operates the Mahrt Mill located south of Phenix City, Alabama on the West bank of the Chattahoochee River. The Mahrt Mill is located within the

Lake Eufaula (Walter F. George) reservoir. Flow past the mill is controlled primarily by releases from the Walter F. George Dam. In the past, the Mahrt Mill has depended heavily on the ACF channel for delivery of fuel oil for the plant.

12. Mead-Westvaco was forced to seek alternate means for delivery following the droughts of the mid-1980s as the dependability of the ACF channel became unreliable. This lack of reliability has a direct relationship to problems between the Corps and Florida over channel maintenance in the critical reaches of the Apalachicola discussed previously, including most recently the subject permit denial. Mead-Westvaco fully believes that resolution of these issues can return the ACF to levels of reliability that will support continued use by the Mahrt facility.

13. The ability to utilize the ACF navigation channel provides potential savings to Mead-Westvaco's facilities in lower cost for material delivery and shipments. In addition, the viability of navigation and transporting these materials on the Apalachicola provides beneficial pressure on other modes of transport to ensure performance and keep rates low. The ability to move large pieces of equipment to and from the mill is also important and the ACF channel provides the only feasible option for certain types of equipment.

14. Mead-Westvaco is substantially and adversely affected by the permit denial. The inability to properly maintain the navigation channel exerts additional pressure on current shipping rates and therefore, costs. In addition, future options for use of navigation, including the possible need for delivery of large equipment, is compromised by the inability for the Corps to properly maintain the navigation channel.

*Id.* at ¶¶10-14.

Also, Georgia-Pacific is "substantially affected" by the permit denial:

16. Georgia Pacific operates a liner board/corrugating medium mill located in Early County Georgia in Cedar Springs on the east bank of the Chattahoochee River. The mill began operation in 1963 as Great Southern Paper and was acquired by Georgia Pacific in 1991. The mill has approximately 750 employees, occupies over 1400 acres and produces over 1 million tons per year of product. The mill exports product to box plants in the United States and throughout the world. The mill utilizes over 1.4 million cords of wood per year and provides over \$100,000,000 dollars in goods and services to the local economy.

17. As with Mead Westvaco, in the past Georgia Pacific's Cedar Springs Mill depended on the navigation channel for delivery of fuel, raw materials, and for shipment of product. As the reliability of the navigation channel decreased, Georgia Pacific was forced to use alternate means of transport. However, Georgia Pacific believes that the reliability problems are directly related to problems

between the Corps of Engineers and Florida over channel maintenance, including, most recently, the subject permit denial, and that these problems can be solved.

18. Georgia Pacific is substantially and adversely affected by the subject permit denial. The viability of navigation and transporting these materials on the Apalachicola River provides potential cost savings to the plant and provides beneficial pressure on other modes of transportation. The inability of the Corps of Engineers to maintain the system as a result of the permit denial has immediate impact on Georgia Pacific in that it precludes use of navigation and thus decreases competition for other transport modes. This increases cost and schedule for delivery for key items needed by the mill. It also compromises the ability to deliver large equipment to the mill, if needed.

*Id.* at ¶¶16-18.

Similarly, the City of Columbus, Georgia, and the City of Eufaula, Alabama, are substantially affected by the permit denial:

20. Columbus is located in Muscogee County Georgia on the East bank of the Chattahoochee River. The Chattahoochee River was a key element in all commerce associated with Columbus. Columbus strongly supports maintaining the ACF navigation channel. Recently, a project was begun to construct a marina in Columbus that would provide facilities for berthing of large craft. The success of this marina project is largely dependent on the ability for these vessels to navigate to and from the Gulf of Mexico via the ACF navigation channel and, specifically, the Apalachicola River. FDEP's denial of the Corps' maintenance dredging permit will preclude the necessary channel maintenance required to ensure access of the new marina to the Gulf of Mexico, affecting substantial economic, recreational and educational interests. There are also a number of businesses in the Columbus area that in the past have relied on the navigation channel and still desire to use navigation. Columbus has a port facility under the direction of the Georgia Ports Authority that has been considered for upgrade a number of times, but the upgrades have not gone forward due to concerns over system reliability. In the 1980s, the Port of Columbus provided significant receipt and storage of fuel going to Fort Benning, and other products for local industry and agriculture use. The lack of proper maintenance drives system reliability. New efforts to revive the port are ongoing. Water transportation has significant fuel efficiency and environmental benefits over rail and highway transportation. Denial of the maintenance permit will substantially and adversely affect navigation as an option to these business interests.

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22. Very much like Columbus, Eufaula is also an original rivertown. In 1963, the Corps of Engineers constructed Lake Eufaula (Walter F. George) and restored

the inland port at Eufaula that had been so important during the 19th until the mid-20th century.

23. Eufaula has preserved and restored many of the beautiful antebellum homes and historic structures in the city and has developed a significant tourism industry. The river is an important part of Eufaula's historic past and supports key programs such as Voyage of Discovery and Riverway South. Access to the navigation channels remains critical to these historical, environmental and educational programs, as well as aspects of Eufaula's economic base.

24. Eufaula, like Columbus, is substantially harmed by the denial of the Corps' navigation maintenance permit. Eufaula has a number of interests in maintaining the navigation channel including LakePoint Marina, a state facility that provides a number of large berths for vessels that routinely travel to the Gulf and back. The Historical and Eco-tourism industries are of interest to Eufaula, growing, and they both depend, in large part, on the ability to navigate the entire ACF system, including the Apalachicola River. The inability to maintain the small, but critical reaches in the Apalachicola will potentially result in loss of the federally authorized navigation channel on the ACF.

*Id.* at ¶¶20-24.

Finally, Oxbow Meadows Environmental Learning Center is substantially affected by this permit denial:

Oxbow Meadows is an outreach program of Columbus State University. Since 1997, Oxbow Meadows has been working to develop a nature/cultural tourism program within the Apalachicola-Chattahoochee-Flint (ACF) watershed. To this end, Oxbow Meadows has initiated the development of two specific organizations that work to promote the tourism resources associated with the river system (Voyage of Discovery, Inc. and RiverWay South). In 1998, Oxbow Meadows spearheaded the formation of Voyage of Discovery, Inc. (VOD), a 501(c)3 organization whose purpose is to foster river-centered connections and partnerships within and among communities and organizations in the Apalachicola-Chattahoochee-Flint (ACF) watershed. Since that time, Oxbow and VOD have provided citizens in the ACF watershed opportunities to travel that watershed from Columbus to Apalachicola by boat and have sponsored educational and informational programs highlighting the potential for cultural/historic/nature-based tourism, navigation, and recreation on and along the ACF river system. In order to effectively promote and coordinate such river-related activities, VOD has also encouraged linkage and communication among riverside communities, governments, organizations, and businesses within the system.

In addition to helping protect the natural, cultural and historic resources associated with these rivers, VOD seeks to use the tourism products to spur

sustainable economic development, particularly in the counties of southwestern Georgia and southeastern Alabama south of Columbus, and the Florida panhandle. According to Congressional reports initiated by former Senator Zell Miller (GA), these counties are the 9th poorest in the nation. This three-state tourism effort has served as a springboard for discussion and activity particularly related to recreation and navigation on the ACF system and the maintenance of dredging on the river system. These efforts focus on developing a sustainable tourism business that will not “kill the goose that laid the golden egg.” The goal is to develop a program of sustainable economic development that will spur an economic revolution in the tri-state region within the ACF watershed.

To accomplish this challenging economic development goal VOD hired Randall Travel Marketing, Inc. (RTM), one of the most respected travel development firms in the country, to conduct a study of the ACF river system and its adjacent communities to determine whether a river-centered, ecologically sustainable nature/heritage tourism effort could be successful in our region. After collecting extensive data on resources of the watershed, touring the ACF system by boat and car, conducting interviews with 36 civic, political and business leaders, and hosting two focus forums with 56 respondents in Atlanta, RTM reported a resounding YES answer to the question.

In 2003 and 2005, VOD applied for and received \$200,000+ in funding through the US Department of Agriculture’s Rural Business Opportunity Grant Program. An Executive Director was hired and these federal funds are now being used to help spur nature/cultural tourism in these depressed counties in the ACF watershed in Georgia, Alabama, and Florida.

*Id.* at pp. 9-10. As demonstrated by the preceding statements, Petitioner’s members stand to suffer immediate economic, environmental, educational, recreational, and other types of harm from the permit denial.

Second, the subject matter of the proposed permit is within the general scope of the interests and activity for which the organization was created. As explained by Mr. Moorer:

The Mid-Chattahoochee River Users is an unincorporated multi-state association whose members are public and private corporations and associations in Alabama and Georgia. The Mid-Chattahoochee River Users’ charge is to champion equitable, optimal use and good stewardship of the water resources in the Apalachicola-Chattahoochee-Flint (ACF) River Basin. Our mission is to enhance the quality of life in its members’ communities through watershed planning in the ACF River Basin, including, specifically, enhancing economic opportunity and development, improving water quality and preservation of ecosystems, meeting multi-purpose environmental, public and industrial needs, protecting recreational resources, and providing input to state and regional planning processes.

Preservation and promotion of navigation on the Apalachicola River in a manner that appropriately manages and stewards natural and environmental resources is central to the broad mission and more specific goals of the Mid-Chattahoochee River Users.

Moorer Affidavit, at ¶2. As this statement makes clear, the subject matter of the permit denial (namely, dredge and fill activities necessary to maintain the navigability of the Apalachicola River) includes issues “within the general scope of the interests and activity” of the organization.

Finally, the relief requested by Petitioner in this case, *i.e.*, modification and/or reversal of the permit denial, is the type of relief appropriate for Petitioner to receive on behalf of its members. Reversing the permit denial will result in “equitable, optimal use and good stewardship” of the ACF River Basin, and will “enhanc[e] economic opportunity and development, improv[e] water quality and preservation of ecosystems, meet[] multi-purpose environmental, public and industrial needs, protect[] recreational resources, and provid[e] input to state and regional planning processes.” Moorer Affidavit, at ¶2.

In summary, Petitioner’s substantial interests will be affected by the Department’s determination in this matter, as indicated by the fact that: (1) Petitioner will suffer immediate injury in fact of a type or nature which an administrative hearing is designed to protect, (2) Petitioner falls within the zone of interests of the relevant regulatory scheme, and (3) Petitioner satisfies the requirements of associational standing.

(c) The following is a statement of when and how Petitioner obtained notice of the permit denial, including the reasons why Petitioner’s request for an administrative hearing should be considered timely, or in the alternative, why any failure to timely file the petition should be excused due to excusable neglect.

The Petition Was Filed Timely: A petition concerning Department action on applications for permits under Fla. Stat. ch. 403 and related authorizations under Fla. Stat. § 373.427 must be

filed in the Department’s Office of General Counsel within 14 days “after receipt of notice of agency action.” Fla. Admin. Code r. 62-110.106(3)(a)1. For the purpose of determining the time for filing a petition for hearing on any action of the Department, “receipt of notice of agency action means either receipt of written notice or publication of the notice in a newspaper of general circulation in the county or counties in which the activity is to take place, whichever first occurs....” *Id.* r. 62-110.106(2) (emphasis added).<sup>1</sup>

Courts have held that an agency must grant affected parties a clear point of entry into administrative procedures. *See Capeletti Bros., Inc. v. State Dept. of Transp.*, 362 So. 2d 346, 348 (Fla. 1st DCA 1978). Furthermore, the provision of a clear point of entry through this notice is an absolute prerequisite to the commencement of the running of the time period within which a challenge may be filed. *See Henry v. State Dept. of Admin., Div. of Retirement*, 431 So. 2d 677, 680 (Fla. 1<sup>st</sup> DCA 1983); *City of St. Cloud v. FDEP*, 490 So. 2d 1356, 1358 (Fla. 1st DCA 1986). The courts have made clear that “[a]n agency seeking to establish waiver based on the passage of time following action claimed as final must show that the party affected by such action has received notice sufficient to commence the running of the time period within which review must be sought.” *Henry*, 431 So. 2d at 680. “The requirements for such notice are objective rather than subjective in nature, and apply regardless of actual or presumed notice of agency action.” *Id.* Furthermore, the courts have usually resolved any confusion in regards to notice in favor of the affected party, holding “[n]otice of final agency action is intended to create a clear point of entry, not a trap for the unwary.” *Florida League of Cities, Inc. v. Administration Comm’n*, 586 So. 2d 397, 414 (Fla. 1st DCA 1991).

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<sup>1</sup> To the best of our knowledge, the Department did not publish notice of the permit denial in a newspaper of general circulation in the counties in which the proposed activities are to take place. If the Department did, in fact, publish notice via a newspaper, Petitioner respectfully requests that the Department excuse any tardiness due to excusable neglect, as discussed in greater detail below.

Florida law establishes specific mandatory requirements for “notice of agency decision.” *See* Fla. Admin. Code r. 28-106.111(1) (explaining that the “notice of agency decision shall contain the information required by Section 120.569(1), F.S.”). Fla. Stat. § 120.569(1) provides that each notice “shall inform the recipient of any administrative hearing or judicial review that is available under this section, s. 120.57, or s. 120.68; shall indicate the procedure which must be followed to obtain the hearing or judicial review; and shall state the time limits which apply.”<sup>2</sup> Florida courts have stated that the basic requirements for the contents of the notice itself are well-established. The notice which is provided must: 1) inform the person receiving the notice of the right to request a hearing; 2) set forth the time period during which a hearing may be requested; and 3) make reference to the agency’s rules. *See Stermann v. Florida State Univ. Bd. of Regents*, 414 So. 2d 1102 (Fla. 1st DCA 1982); *City of St. Cloud v. DER*, 490 So. 2d 1356, 1358 (Fla. 1st DCA 1986).

Petitioner timely filed the petition for administrative hearing in this case. To the best of our knowledge, information and belief, neither Petitioner nor any member of Petitioner received legally sufficient written notice of the permit denial from the Department. *See* Moorer Affidavit, at ¶¶10, 15, 19, 21, pp. 9-10, ¶¶25-27. Mr. Thomas C. Moorer, the authorized spokesperson for Petitioner, did not learn of the permit denial until October 31, 2005. *See* Moorer Affidavit, at ¶9. Likewise, other members of Petitioner did not receive written notice of the permit denial until October 31, 2005 or later. *See* Moorer Affidavit, at ¶¶10, 15, 19, 21, pp. 9-10, ¶¶25-27; Boulden Affidavit, at ¶4.

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<sup>2</sup> Fla. Admin. Code r. 28- 106.111(1)(b) also provides: “Until notice is published, the point of entry to request a formal or informal administrative proceeding shall remain open unless actual notice is received.” Thus, the Department is precluded from arguing constructive notice in this case.

The Department states in its Order that notice was sent to Tri-Rivers Waterway Development Association (“Tri-Rivers”) on October 11, 2005. *See* Order at 15. Apparently, the Department is relying on a “courtesy copy” email sent to Ms. Rebecca Martin, the former Executive Director of Tri-Rivers, to argue that Petitioner received legally sufficient written notice on October 11, 2005. *See* Moorer Affidavit, at ¶¶25-26. This email included a “link” to the Department’s website where a copy of the permit denial could be accessed. This was not legally sufficient notice for several reasons: (1) the email did not constitute sufficient notice; (2) the email was sent to a former employee of Tri-Rivers; and (3) notice to Tri-Rivers does not constitute notice to Petitioners.

First, an email requesting an entity to “link” to the Department’s website is insufficient to meet the notice requirements of Fla. Stat. § 120.569(1) and Fla. Admin. Code r. 28-106.111, which require a notice of permit denial to inform the person receiving the notice of the right to request a hearing; set forth the time period during which a hearing may be requested; and make reference to the agency’s rules. The email did not comply with these requirements. In fact, the email from the Department noted that it takes the document “a few moments to open.”

Second, the email was not sufficient notice to Petitioner because it was sent to a former employee of Tri-Rivers. Ms. Martin has not served as the Executive Director for Tri-Rivers since approximately one year ago. *See* Moorer Affidavit, at ¶25. She serves in a consulting role for Tri-Rivers only. *Id.* Due to the association’s limited staff resources, Tri-Rivers relies on the United States mail and courier to receive important documentation, including official notices. *See id.* at ¶26. The Tri-Rivers employee responsible for checking Tri-Rivers’ mailbox has stated that she never received written notice of the permit denial via the mail. *See* Boulden Affidavit, at ¶4. Thus, any notice to Ms. Martin was ineffective to constitute notice to Tri-Rivers, let alone

notice to Petitioner. As a result, Tri-Rivers did not receive written notice of the permit denial prior to October 31, 2005, and has never received legally sufficient written notice from the Department. *See* Moorer Affidavit, at ¶¶25-26; Boulden Affidavit, at ¶¶2-4.

Third, even if the notice to Tri-Rivers was sufficient, such notice does not constitute legally sufficient notice to Petitioner. The Department erroneously contends that, since various members of Tri-Rivers are also members of Petitioner, notice to Tri-Rivers constituted legally sufficient notice to Petitioner. *See* Order at 15. Such an approach would not provide a petitioner-association with a “clear point of entry into administrative procedures,” especially where the petitioner has many members spread across two states. By simply providing an email with a “link” to a website where a copy of the permit denial can be accessed, and sending that email to a former employee of one of many members of the Petitioner’s association, the Department creates a “trap for the unwary” in contravention of Florida law. *See Florida League of Cities, Inc.*, 586 So. 2d at 414 (“Notice of final agency action is intended to create a clear point of entry, not a trap for the unwary.”). Moreover, in light of the requirement for associational standing that a substantial number of Petitioner’s members must be substantially affected, it would be illogical to impute notice to Petitioner due to only one member receiving notice.

Petitioner first received written notice of the permit denial on October 31, 2005, when the Mobile District Corps of Engineers provided a copy of the denial to Mr. Thomas C. Moorer by facsimile transmission. *See* Moorer Affidavit, at ¶10. Ms. Martin forwarded a copy of the Department’s email (discussed above) to Mr. Moorer on October 12, 2005, but Mr. Moorer did not read the forwarded email prior to October 31, 2005. As soon as Mr. Moorer learned of the permit denial on October 31, 2005, he rallied the Mid-Chattahoochee River Users to determine

the appropriate course of action. To the best of our knowledge, neither Petitioner nor any member of Petitioner received legally sufficient written notice of the permit denial prior to October 31, 2005. Therefore, pursuant to Fla. Admin. Code r. 62-110.106(3)(a)(1), the Petition for Administrative Hearing was timely filed on November 10, 2005.

Excusable Neglect: In the alternative, if the Department concludes that Petitioner received legally sufficient written notice prior to October 31, 2005, and that an email link to a former representative of a member of Petitioner's association was sufficient "entry to process," Petitioner respectfully requests the Department to excuse the failure to timely file due to excusable neglect. Florida law provides as follows:

For good cause shown, the Secretary of the Department (or the Secretary's designee) may grant an enlargement of time for the doing of any act required or allowed to be done under an order of the Department, the Uniform Rules of Procedure, or any rule of the Department or notice given under such a rule, if the request for such enlargement is made before the expiration of the period to be enlarged, or may allow the act to be done even if the period has expired, upon motion showing that the failure to act was the result of excusable neglect.

Fla. Admin. Code Rule 62-110.106(4). Florida courts have found excusable neglect in a wide variety of situations.<sup>3</sup> In order to file the petition, Mid-Chattahoochee River Users had to review

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<sup>3</sup> See *City of Pembroke Pines v. Zitnick*, 792 So. 2d 677, 678 (Fla. 4th DCA 2001) (reversing denial of motion to set aside order compelling arbitration where counsel's failure to attend hearing was result of secretarial scheduling error); *Shurgard Storage Ctrs., Inc. v. Parker*, 755 So. 2d 695, 696 (Fla. 4th DCA 1999) (finding that company's administrative mishandling and misrouting of complaint between offices was a "clear case" of excusable neglect); *Al Hendrickson Toyota v. Yampolsky*, 695 So. 2d 948 (Fla. 4th DCA 1997) ("[T]he established case law deems that calendaring errors are regarded as excusable neglect."); *Heller v. Geneco, Inc.*, 661 So. 2d 950, 951 (Fla. 4th DCA 1995) (commenting that a "secretarial error in failing to calendar a hearing for an attorney" warrants relief under Rule 1.540(b)); *Hall v. Byington*, 421 So. 2d 817, 818 (Fla. 4th DCA 1982) (noting that an attorney's failure to note the date properly on his calendar is recognized as excusable neglect); *Supro Corp. v. Bridwell*, 361 So. 2d 734, 735 (Fla. 4th DCA 1978) (concluding that counsel's failure to appear at trial because his file had been misplaced demonstrates excusable neglect); *Travelers Ins. Co. v. Bryson*, 341 So. 2d 1013, 1015 (Fla. 4th DCA 1977) (counsel who failed to properly note on calendar the date of a hearing demonstrated excusable neglect, as "[c]ounsel's absence from the hearing was a mistake, or inadvertent or excusable neglect"); *Crystal Lake Golf Course, Inc. v. Kalin*, 252 So. 2d 379, 380-81 (Fla. 4th DCA 1971) (concluding that attorney's failure to attend a pretrial conference which was caused by secretary's failure to diary the hearing is excusable neglect); *Wilson v. Woodward*, 602 So. 2d 547, 549 (Fla. 2d DCA 1992) (party demonstrated excusable neglect for failure to attend hearing, where attorney's secretary did not calendar the hearing pursuant to a notice of hearing).

the permit denial first obtained on October 31, 2005, confer with its members regarding the denial and filing a petition for administrative hearing, retain legal counsel and file its petition. *See Moorer Affidavit*, at ¶27. Completing these tasks required extensive efforts and were completed promptly upon actual notice to Petitioner, which justifies any tardiness being excused for excusable neglect. *Id.*

In summary, the Department would have to make the following conclusions in order to determine that Petitioner received legally sufficient written notice of the permit denial: 1) a former employee of Tri-Rivers receiving an email from the Department instructing her to follow a link to the Department's website in order to read a copy of the permit denial is sufficient notice; and 2) since Tri-Rivers and Petitioner have members in common to each association, notice to the former employee of Tri-Rivers is sufficient to place Petitioner and all members of Petitioner's association on notice of the permit denial. This cannot be true. Therefore, Petitioner respectfully requests that the Department find the Petition for Administrative Hearing to be timely filed, or in the alternative, to excuse any failure to timely file the Petition due to excusable neglect.<sup>4</sup>

(d) The following is a list of all disputed issues of material fact known by Petitioners at this time:

- Whether the permit applicant provided the Department reasonable assurance that the proposed activity would not violate state water quality standards.
- Whether the permit applicant provided reasonable assurance that the proposed activity will not cause elevation above ambient background levels of turbidity in Outstanding Florida Waters outside the federally authorized navigation project.

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<sup>4</sup> This Department's approach to notice in this matter would carry apparent ramifications. Suppose an environmental organization, with dozens of member entities and associations, filed a petition for administrative hearing to challenge a permit decision by the Department. Would notice by an email to a former employee of one of the petitioner's member's organizations bar the petitioner from obtaining an administrative hearing?

- Whether the proposed activity has the potential to cause degradation of the ambient water quality of Outstanding Florida Waters.
- Whether the proposed activity is necessary or desirable under federal standards and under circumstances which are clearly in the public interest.
- Whether the applicant has provided reasonable assurance that the proposed activity will not cause unacceptable reductions in the biological integrity of the river system.
- Whether the floodplain, river bed and within-bank disposal activity and the practice of snag removal will cause significant degradation of the ambient biological integrity of Outstanding Florida Waters outside the federally authorized navigation project.
- Whether the permit applicant provided the Department reasonable assurance that the proposed activity would not be “contrary to the public interest.”
- Whether the Department adequately considered the benefits to public health, safety and welfare resulting from navigation on the Apalachicola River system.
- Whether the proposed activity will adversely affect the property of others.
- Whether the Department adequately considered the benefits to the property of others generated by navigation on the river system.
- Whether the proposed activity will adversely affect the conservation of fish and wildlife.
- Whether the Department adequately considered the positive effects resulting from navigation on the river system.
- Whether the “project is not needed by the State of Florida to enhance navigation.”
- Whether the Department adequately considered the interests of other States, including Georgia and Alabama, which rely heavily on the maintenance of the Apalachicola, Chattahoochee, and Flint (ACF) Rivers navigation system for commerce and transportation.
- Whether the project is expected to adversely affect fishing or recreational values and productivity in the vicinity of the project.
- Whether the proposed activity will be of a temporary or permanent nature.
- Whether the activity has the potential to adversely affect significant historical and archeological resources.

- Whether the proposed disposal activities are expected to diminish the current condition and relative value of functions being performed by the river system.
- Whether the Department adequately considered the impact of the proposed dredging activities on current conditions in the Apalachicola River.
- Whether the Department adequately considered measures proposed by or acceptable to the permit applicant to mitigate adverse effects that may be caused by the proposed activity.
- Whether the Department reasonably concluded that the permit applicant was not expected to complete mitigation and restoration measures.
- Whether the continuation of this project, as currently designed, is expected to contribute to unacceptable cumulative impacts upon wetlands and other surface waters.
- Whether the applicant's request for authorization to use sovereign submerged lands for dredged material disposal sites should have been granted.
- Whether the disposal activities meet the criteria for issuance of a Wetland Resource Permit.
- Whether the disposal activities meet the "intent" of Fla. Admin. Code rr. 18-20.001 and 18-21.001.
- Whether the proposed disposal activities are consistent with the 1981 Conceptual State Lands Management Plan.
- Whether the Department adequately considered whether there are other reasonable alternatives to the use of the dredged material disposal sites.
- Whether the disposal activities are inconsistent with Fla. Admin. Code r. 18-21.004(2)(i).
- Whether the proposed disposal activities will result in unacceptable cumulative impacts.
- Whether the proposed activity is inconsistent with Florida's Coastal Management Program.
- Whether the permit denial violates the federal mandate that the Apalachicola River be maintained with a 9-foot-deep and 100-foot-wide channel for navigation so that the ACF River navigation project remains "available for normal operation and maintenance."

- Such other disputed issues of material fact as may become apparent in the course of this administrative process.

(e) The following is a concise statement of the ultimate facts alleged, including the specific facts Petitioner contends warrant reversal or modification of the permit denial:

- Navigation on the Apalachicola River has played an important role in interstate commerce since before the Civil War.
- Historically, the navigation channel of the Apalachicola River was filled with sand bars and snags which limited the river's use to those periods of high water when these obstructions did not menace interstate transport along the river.
- Recognizing the vital importance of this waterway, the United States Congress created the Apalachicola, Chattahoochee, and Flint (ACF) Rivers navigation project in 1945, authorizing maintenance dredging along this river system to maintain a 9-foot-deep and 100-foot-wide navigation channel. Congress has continued to fund the ACF Rivers navigation project.
- The ACF Rivers navigation project links Columbus and Bainbridge, Georgia, with the Gulf Intracoastal Waterway.
- Major commodities shipped along the Apalachicola River have included (among other things) sand, gravel, petroleum, coal, asphalt, chemicals, fertilizer, agricultural products, steel products, electrical machinery and other pieces of large industrial equipment.
- Over the course of several decades, the State of Florida has continually approved the maintenance activities requested in the permit application. In fact, the State of Florida has explained previously that maintenance dredging and snagging is acceptable and necessary to the maintenance of the Apalachicola River as a navigation project. The permit applicant and the States of Alabama, Florida and Georgia have entered various agreements to ensure the availability of the Apalachicola River navigation channel.
- The permit application requests the continuation of operation and maintenance activities associated with the Florida portions of the ACF Rivers navigation project, including (among other things) the removal and relocation of snags hazardous to navigation on the river, maintenance dredging, maintenance and repair of existing training works on the river, and mitigation measures such as the opening or maintenance of sloughs, springs and tributaries connecting to the Apalachicola River for environmental restoration purposes. All work associated with the continuation of operation and maintenance activities would essentially be conducted in accordance with the terms and conditions of the recently-expired FDEP Permit No. 0129424-001-DF, and subsequent modifications to that permit.

- The Department's decision to deny the permit application constitutes a reversal of the long-standing position of the State of Florida to allow navigation maintenance activities on the Apalachicola River, albeit subject to various terms and conditions.
- The applicant provided the Department reasonable assurance that the proposed activity would not violate state water quality standards, including standards for turbidity and biological integrity.
- The proposed activity will not cause degradation of the ambient water quality of the Apalachicola River.
- The proposed activity is necessary or desirable under federal standards and under circumstances which are clearly in the public interest.
- The proposed activity will not cause significant degradation of the ambient biological integrity of Outstanding Florida Waters outside the federally authorized navigation project.
- The proposed activity will not be contrary to the public interest.
- The Department failed to adequately consider measures proposed by or acceptable to the applicant to mitigate adverse effects that may be caused by the proposed activity.
- The Department erroneously concluded that the permit applicant was not expected to complete mitigation and restoration measures required under previous permits.
- The continuation of this project, as currently designed, is not expected to contribute to unacceptable cumulative impacts upon wetlands and other surface waters.
- The applicant's request for authorization to use sovereign submerged lands for dredged material disposal sites should have been granted.
- The disposal activities meet the criteria for issuance of a Wetland Resource Permit.
- The disposal activities meet the "intent" of Fla. Admin. Code rr. 18-20.001 and 18-21.001.
- The proposed disposal activities are consistent with the 1981 Conceptual State Lands Management Plan.
- The Department failed to adequately consider whether there are other reasonable alternatives to the use of the dredged material disposal sites.

- The disposal activities are consistent with Fla. Admin. Code r. 18-21.004(2)(i).
- The proposed disposal activities will not result in unacceptable cumulative impacts.
- The proposed activity is consistent with Florida's Coastal Management Program.
- The permit denial violates the federal mandate that the Apalachicola River be maintained with a 9-foot-deep and 100-foot-wide channel for navigation so that the ACF River navigation project remains "available for normal operation and maintenance."
- The permit denial violates various agreements entered between the Corps and the States of Alabama, Florida and Georgia, including but not limited to, a Memorandum of Agreement dated June 29, 1983, and an agreement entered in July of 1998.

(f) For decades, the State of Florida, including the Department and its predecessor agencies, has permitted maintenance dredging along the Apalachicola River. However, on October 11, 2005, in less than six pages of text, the Department provided its conclusory and unsubstantiated "reasons for denial" of the permit application, thereby threatening to end over a half-century of reliable navigation on the Apalachicola River. The Department failed to adequately explain this drastic change in course. The following rules or statutes require reversal or modification of the Department's permit denial.

1. Wetlands Resource Permit: By denying the applicant's request for a Wetlands Resource Permit, the Department violated various provisions of Florida law, including but not limited to Fla. Stat. ch. 373 and Fla. Admin. Code ch. 62. In accordance with Fla. Stat. § 373.414, the permit applicant provided the Department "reasonable assurance" that the proposed activity would not violate state water quality standards and that the proposed activity would not be "contrary to the public interest."

First, the Department's determination that the applicant has not provided reasonable assurances that the immediate and long-term impacts of the activity will not cause violations of

the state water quality standards was neither supported by competent, substantial evidence in the record nor was that determination a lawful exercise of agency discretion. In accordance with Fla. Admin. Code rr. 62-302.300, 62-302.530, 62-312.080, 62-4.242 and various other regulations, the applicant has provided reasonable assurance that the activity will not cause elevation above ambient background levels of turbidity in Outstanding Florida Waters outside the federally authorized navigation project. The Department's conclusion that the activity has the potential to cause degradation of the ambient water quality of Outstanding Florida Waters was neither supported by competent, substantial evidence in the record nor a lawful exercise of agency discretion.

Likewise, in accordance with Fla. Admin. Code rr. 62-302.530(11), 62-312.300, 62-4.242 and various other regulations, the applicant has provided reasonable assurance that the activity will not cause unacceptable reductions in the biological integrity of the river system. The Department's cursory statement that "the floodplain, river bed and within-bank disposal activity and the practice of snag removal will cause significant degradation of the ambient biological integrity of Outstanding Florida Waters outside the federally authorized navigation project" is neither supported by competent, substantial evidence in the record nor was that determination a lawful exercise of agency discretion. Even if the proposed activity was appropriately determined to cause degradation of water quality standards for turbidity and/or biological integrity, the Department failed to consider in its permit denial whether the proposed activity is "necessary or desirable under federal standards and under circumstances which are clearly in the public interest," in violation of Fla. Admin. Code r. 62.4.242(1)(b).

Second, the Department's determination that the applicant failed to provide reasonable assurances that the proposed activity would not be contrary to the public interest, including the

Department's consideration and balancing of the factors and criteria set forth in Fla. Stat. § 373.414(1)(a) and Fla. Admin. Code r. 62-312.080(3), was neither supported by competent, substantial evidence in the record nor was the determination a lawful exercise of agency discretion. In accordance with Fla. Admin. Code r. 62-312.080(2), the proposed activity is not contrary to the public interest.

- The Department completely ignores the benefits to public health, safety and welfare resulting from navigation on the Apalachicola River system.
- The Department summarily asserts that the disposal activities adversely affect the property of others, without discussing even one instance where that has been the case and without noting the benefits to the property of others generated by navigation on the river system.
- In determining that the project will adversely affect the conservation of fish and wildlife, the Department fails to consider the positive effects resulting from navigation on the river system, including a greater volume of water flowing through the system that would benefit aquatic species inhabiting the Apalachicola River and Apalachicola Bay. Fla. Stat. § 373.414(1)(a)3 expressly requires the Department to consider “whether the activity will adversely affect navigation or the flow of water...” The proposed activity will greatly assist navigation on the river system and will lead to increases in the flow of water.
- Instead of considering all positive effects on navigation, including interstate effects, the Department arbitrarily concludes that the “project is not needed by the State of Florida to enhance navigation.” The Department simply ignores the interests of other States, including Georgia and Alabama, which rely heavily on the maintenance of the ACF Rivers navigation system for commerce and transportation.
- The Department's determination that the project is expected to adversely affect fishing or recreational values and productivity in the vicinity of the project was not supported by competent, substantial evidence in the record.
- In its determination that the “adverse impacts of the disposal activities may be of a permanent nature,” the Department failed to properly consider – as set forth in Fla. Stat. § 373.414 – “whether the activity will be of a temporary or permanent nature.”
- The Department's decision that the “activity has the potential to adversely affect significant historical and archeological resources” is not supported by competent, substantial evidence in the record.

- The Department’s conclusion that the “proposed disposal activities are expected to diminish the current condition and relative value of functions being performed by the river system” is not supported by competent, substantial evidence in the record. By focusing solely on disposal activities, the Department failed to adequately consider the impact on current conditions in the Apalachicola River, including the flow of water, which would result from dredging activities.

Third, in determining that the permit applicant did not provide the reasonable assurances discussed above, the Department violated Fla. Stat. § 373.414(1)(b) by failing to reasonably and adequately “consider measures proposed by or acceptable to the applicant to mitigate adverse effects that may be caused by the regulated activity,” including “onsite mitigation, offsite mitigation, offsite regional mitigation, and the purchase of mitigation credits from mitigation banks.” Likewise, the Department’s conclusion that “it is not reasonable to expect that the necessary mitigation and restoration would be completed under a new permit” simply because “the applicant’s inability to conduct the restoration required under the previous permit” is neither supported by competent, substantial evidence in the record nor was that determination a lawful exercise of agency discretion.

Finally, the Department’s determination under Fla. Stat. § 373.414(8) that the “continuation of this project, as currently designed, is expected to contribute to unacceptable cumulative impacts upon wetlands and other surface waters” is neither supported by competent, substantial evidence in the record nor is that determination a lawful exercise of agency discretion.

2. Sovereign Submerged Lands: By denying the applicant’s request for authorization to use sovereign submerged lands for dredged material disposal sites, the Department violated Florida Constitution, art. X, § 11; Fla. Stat. ch. 253 and 258; and Fla. Admin. Code chs. 18-20 and 18-21. First, the Department’s conclusion that the “disposal activities do not meet the criteria for issuance of a Wetland Resource Permit” was, as explained

above, neither supported by competent, substantial evidence in the record nor was the determination a lawful exercise of agency discretion. Likewise, the Department provided absolutely no explanation as to why the disposal activities allegedly fail to meet the “intent” of Fla. Admin. Code rr. 18-20.001 and 18-21.001. Similarly, the Department failed to explain why the proposed disposal activities are “inconsistent” with the 1981 Conceptual State Lands Management Plan, even though the Department has previously considered similar disposal activities to be consistent with that Plan. Also, the Department failed to consider whether there are “other reasonable alternatives” to the use of the dredged material disposal sites, as required by Fla. Admin. Code r. 18-20.004(3)(d). The Department’s conclusory statements that “disposal activities are inconsistent with Subsection 18-21.004(2)(i)” and “will result in unacceptable cumulative impacts” are not supported by competent, substantial evidence in the record.

3. Coastal Zone Management: The Department’s conclusion that the proposed activity is inconsistent with Florida’s Coastal Management Program, which relied entirely on the Department’s decision to reject the Wetlands Resource Permit and Authorization to Use Sovereign Submerged Lands, is (as discussed above) neither supported by competent, substantial evidence in the record nor is that determination a lawful exercise of agency discretion. This also violates Fla. Stat. ch. 380 and the related federal and state statutes and regulations. The permit denial may also violate the terms and conditions of the sanctuary designation for the Apalachicola River/Bay National Estuarine Sanctuary.

4. Federal Law: Federal law is controlling, even in a Florida administrative proceeding. *See McCulloch v. Maryland*, 4 Wheat. 316, 426, 4 L.Ed. 579, 606 (1819) (stating the seminal constitutional principle that “the constitution and the laws made in pursuance thereof are supreme; that they control the constitution and laws of the respective States and cannot be

controlled by them”). In this permit denial, the Department has violated the “Supreme law of the Land” – namely, the United States Constitution art. VI, cl. 2, the supremacy clause; the United States Constitution art. I, § 8, cl. 3, the interstate commerce clause, which grants exclusive authority to regulate interstate commerce to Congress and, by extension, prohibits states from unduly regulating or burdening interstate and out-of-state commerce; Section 2 of the River and Harbor Act of March 2, 1945 (Public Law 79-14, 59 Stat. 10, 17) and Section 1 of the River and Harbor Act of 1946 (Public Law 79-520, 60 Stat. 634, 635), which mandate that the Apalachicola River be maintained with a 9-foot-deep and 100-foot-wide channel for navigation so that the ACF Rivers navigation project remains “available for normal operation and maintenance,” *see* Public Law 107-66, at 491-92 (2001); and the federal Submerged Lands Act, 43 U.S.C. §§ 1301-1356 (1994). In addition, the permit denial exceeds authority granted to the States by Section 401(a) of the Clean Water Act, 33 U.S.C. § 1341(a), and the Coastal Zone Management Act, 16 U.S.C. §§ 1451-1465, and/or violates those statutes.

5. Agreements between the Corps and the States of Alabama, Florida and Georgia:

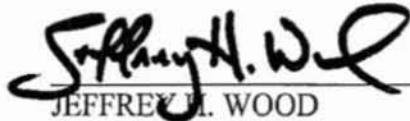
The permit denial violates various agreements entered between the Corps and the States of Alabama, Florida and Georgia, including but not limited to, a Memorandum of Agreement dated June 29, 1983, and an agreement entered in July of 1998.

(g) In addition to granting the Petition for Administrative Hearing, Petitioner respectfully requests the Department to withdraw the permit denial and issue the requested permit to the permit applicant in accordance with the terms and conditions of the recently-expired FDEP Permit No. 0129424-001-DF (and subsequent modifications to that permit) or in accordance with other acceptable terms and conditions.

**Conclusion**

For the foregoing reasons, Petitioner hereby requests that the Department grant the relief requested herein.

Sincerely,

A handwritten signature in black ink, appearing to read "Jeffrey H. Wood", is written over a horizontal line.

JEFFREY H. WOOD  
Attorney for Petitioner  
BALCH & BINGHAM LLP  
1901 Sixth Avenue North, Suite 2600  
Birmingham, Alabama 35203  
(205) 226-3405  
Florida Bar No. 0713333

Of Counsel  
C. Grady Moore, III  
Spencer M. Taylor  
Steven A. Burns  
BALCH & BINGHAM LLP

**December 8, 2005**

### CERTIFICATE OF SERVICE

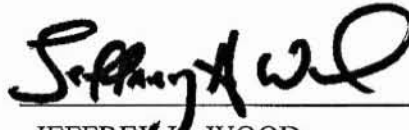
I hereby certify that I have served a copy of the above and foregoing upon the following addressees by placing a copy of same in the United States mail, first-class postage prepaid, this 8th day of December, 2005:

Office of Counsel  
U.S. Army Corps of Engineers  
109 St. Joseph Street  
Mobile, Alabama 36601

Curtis M. Flakes  
Chief, Planning and Environmental Division  
U.S. Army Corps of Engineers,  
Mobile District  
P.O. Box 2288  
Mobile, Alabama 36628-0001

Martin Seeling  
Program Administrator  
Bureau of Beaches & Coastal Systems  
Department of Environmental Protection  
3900 Commonwealth Boulevard, M.S. 300  
Tallahassee, Florida 32399-3000

Charles T. "Chip" Collette  
Senior Assistant General Counsel  
State of Florida  
3900 Commonwealth Boulevard, M.S. 35  
Tallahassee, Florida 32399-3000  
(850) 245-2242 / Fax 245-2297



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JEFFREY H. WOOD  
Attorney for Petitioner

**STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION**

<b>MID-CHATTAHOOCHEE RIVER USERS,</b>	)	
	)	
	)	
Petitioner,	)	
	)	<b>DEP OGC Case No. 05-2591</b>
v.	)	
	)	DEP File No. 0129424-005-DF
<b>STATE OF FLORIDA, DEPARTMENT OF ENVIRONMENTAL PROTECTION,</b>	)	
	)	
	)	
Respondent.	)	
	)	

**AFFIDAVIT OF THOMAS C. MOORER**

STATE OF ALABAMA     )  
  
JEFFERSON COUNTY     )

Before me, the undersigned notary public in and for the State of Alabama, Jefferson County, personally appeared Thomas C. Moorner, who being by me first duly sworn, deposes and says as follows:

1. My name is Thomas C. Moorner. I am Project Manager in the Environmental Affairs department of Southern Nuclear Operating Company ("Southern Nuclear"), a subsidiary of Southern Company and a member of the Mid-Chattahoochee River Users. I serve as Southern Nuclear's authorized representative for the Mid-Chattahoochee River Users. I am the authorized spokesperson on behalf of the Mid-Chattahoochee River Users. I am over twenty-one years of age, and have personal knowledge of the facts set forth in this affidavit.

2. The Mid-Chattahoochee River Users is an unincorporated multi-state association whose members are public and private corporations and associations in Alabama and Georgia. The Mid-Chattahoochee River Users' charge is to champion equitable, optimal use and good stewardship of the water resources in the Apalachicola-Chattahoochee-Flint (ACF) River Basin. Our mission is to enhance the quality of life in its members' communities through watershed planning in the ACF River Basin, including, specifically, enhancing economic opportunity and development, improving water quality and preservation of ecosystems, meeting multi-purpose environmental, public and industrial needs, protecting recreational resources, and providing input to state and regional planning processes. Preservation and promotion of navigation on the Apalachicola River in a manner that appropriately manages and stewards natural and environmental resources is central to the broad mission and more specific goals of the Mid-Chattahoochee River Users.

3. The Mid-Chattahoochee River Users has 13 voting members responsible for the formation of the group and conducting its general business. The voting members of the Mid-Chattahoochee River Users are the Bainbridge Development Authority; the City of Eufaula, Alabama; West Point Lake Coalition; the City of La Grange, Georgia; Troup County, Georgia; the City of Columbus, Georgia; Chattahoochee Riverkeeper, Inc.; Georgia-Pacific Corporation; Tri-Rivers Waterway Development Association; Mead-Westvaco Corporation; the Oxbow Meadows Environmental Learning Center of Columbus State University; the Southern Company; and the City of Columbus Water Works.

4. As the authorized spokesperson for the Mid-Chattahoochee River Users, I have personal knowledge of the business of its members including how they are substantially affected by the State of Florida Department of Environmental Protection's (FDEP) Consolidated Notice

of Denial Wetland Resource Permit and Authorization to Use Sovereign Submerged Lands filed on October 11, 2005. A substantial number of the members of Mid-Chattahoochee River Users are affected by the permit denial, including Southern Nuclear, a wholly owned subsidiary of the Southern Company, Mead-Westvaco Corporation (Mead-Westvaco), Georgia Pacific Corporation (Georgia Pacific), the City of Eufaula, Alabama (Eufaula), the City of Columbus, Georgia (Columbus) and the Oxbow Meadows Environmental Learning Center (Oxbow Meadows). These members' substantial interests in navigation in the Apalachicola and the dredging operations that form the basis of the subject permit are described as follows.

***Southern Nuclear Operating Company***

5. Southern Nuclear, a wholly owned subsidiary of Southern Company, operates three nuclear power plants in Alabama and Georgia. The Farley Nuclear Plant is owned by Alabama Power Company and provides 1,776 megawatts of baseload generation to Southern Company customers. The Farley Plant is located near Columbia, Alabama on the West bank of the Chattahoochee River.

6. Plant Farley regularly depends on the availability of the federally authorized navigation channel in the ACF River Basin, including critical reaches of the Apalachicola River directly related to FDEP's denial of the Corps permit, for delivery and shipment offsite of large pieces of equipment vital to the operation of the facility. Most of the large equipment for the original plant construction was delivered by barge in the ACF River Basin. In 2000, Plant Farley received replacement steam generators by barge in the ACF River Basin to complete a 360 million dollar replacement project to ensure the availability of Plant Farley long into the future. A shipment is planned in early 2006 to remove the Unit 1 and Unit 2 reactor vessel heads from the site for disposal. This shipment must again traverse the Apalachicola River, including the

portions in which dredging was proposed by the Corps and refused by FDEP in its permit denial. The reactor vessel heads were replaced as part of a long-term plan to upgrade the plant.

7. Plant Farley's operating licenses were recently extended for an additional twenty years. The Farley site has been identified by Southern Company as a potential site for new baseload generation, including new nuclear facilities. The presence of the ACF navigation channel greatly enhances the Farley site relative to potential for new generation.

8. Plant Farley is substantially and adversely affected by the recent denial of the Corps Maintenance Dredging Permit. The Corps' ability to provide the required 9 by 100 foot navigation channel requires maintenance of several small, but critical reaches of the Apalachicola River to ensure adequate channel depths. If the Corps does not conduct this maintenance, including dredging and removal of obstacles (snags) from the navigation channel, the ability to provide navigation on the ACF River Basin is severely impeded. When the need to transport equipment occurs, as demonstrated in the two above examples, other feasible alternatives do not exist and the shipments have multi-million dollar values.

9. Plant Farley regularly depends on the availability of the federally authorized navigation channel in the ACF River Basin, including critical reaches of the Apalachicola River directly related to FDEP's denial of the Corps permit, for delivery.

10. Southern Nuclear first learned of the permit denial on October 31, 2005, when the Mobile District Corps of Engineers provided a copy of the denial to Southern Nuclear by facsimile transmission.

***Mead-Westvaco Corporation***

11. Mead-Westvaco is one of the major producers of Liner Board in the world. It operates the Mahrt Mill located south of Phenix City, Alabama on the West bank of the

Chattahoochee River. The Mahrt Mill is located within the Lake Eufaula (Walter F. George) reservoir. Flow past the mill is controlled primarily by releases from the Walter F. George Dam. In the past, the Mahrt Mill has depended heavily on the ACF channel for delivery of fuel oil for the plant.

12. Mead-Westvaco was forced to seek alternate means for delivery following the droughts of the mid-1980s as the dependability of the ACF channel became unreliable. This lack of reliability has a direct relationship to problems between the Corps and Florida over channel maintenance in the critical reaches of the Apalachicola discussed previously, including most recently the subject permit denial. Mead-Westvaco fully believes that resolution of these issues can return the ACF to levels of reliability that will support continued use by the Mahrt facility.

13. The ability to utilize the ACF navigation channel provides potential savings to Mead-Westvaco's facilities in lower cost for material delivery and shipments. In addition, the viability of navigation and transporting these materials on the Apalachicola provides beneficial pressure on other modes of transport to ensure performance and keep rates low. The ability to move large pieces of equipment to and from the mill is also important and the ACF channel provides the only feasible option for certain types of equipment.

14. Mead-Westvaco is substantially and adversely affected by the permit denial. The inability to properly maintain the navigation channel exerts additional pressure on current shipping rates and therefore, costs. In addition, future options for use of navigation, including the possible need for delivery of large equipment, is compromised by the inability for the Corps to properly maintain the navigation channel.

15. Mead-Westvaco was notified of the permit denial by discussion with Southern Nuclear, who first learned of the permit denial from the Corps of Engineers on October 31, 2005. Mead-Westvaco's notice of the permit denial was received subsequent to that date.

***Georgia Pacific Corporation***

16. Georgia Pacific operates a liner board/corrugating medium mill located in Early County Georgia in Cedar Springs on the east bank of the Chattahoochee River. The mill began operation in 1963 as Great Southern Paper and was acquired by Georgia Pacific in 1991. The mill has approximately 750 employees, occupies over 1400 acres and produces over 1 million tons per year of product. The mill exports product to box plants in the United States and throughout the world. The mill utilizes over 1.4 million cords of wood per year and provides over \$100,000,000 dollars in goods and services to the local economy.

17. As with Mead Westvaco, in the past Georgia Pacific's Cedar Springs Mill depended on the navigation channel for delivery of fuel, raw materials, and for shipment of product. As the reliability of the navigation channel decreased, Georgia Pacific was forced to use alternate means of transport. However, Georgia Pacific believes that the reliability problems are directly related to problems between the Corps of Engineers and Florida over channel maintenance, including, most recently, the subject permit denial, and that these problems can be solved.

18. Georgia Pacific is substantially and adversely affected by the subject permit denial. The viability of navigation and transporting these materials on the Apalachicola River provides potential cost savings to the plant and provides beneficial pressure on other modes of transportation. The inability of the Corps of Engineers to maintain the system as a result of the permit denial has immediate impact on Georgia Pacific in that it precludes use of navigation and

thus decreases competition for other transport modes. This increases cost and schedule for delivery for key items needed by the mill. It also compromises the ability to deliver large equipment to the mill, if needed.

19. Georgia Pacific did not become aware of the permit denial until after October 31, 2005 at a Mid-Chattahoochee River Users meeting.

*City of Columbus, Georgia*

20. Columbus is located in Muscogee County Georgia on the East bank of the Chattahoochee River. The Chattahoochee River was a key element in all commerce associated with Columbus. Columbus strongly supports maintaining the ACF navigation channel. Recently, a project was begun to construct a marina in Columbus that would provide facilities for berthing of large craft. The success of this marina project is largely dependent on the ability for these vessels to navigate to and from the Gulf of Mexico via the ACF navigation channel and, specifically, the Apalachicola River. FDEP's denial of the Corps' maintenance dredging permit will preclude the necessary channel maintenance required to ensure access of the new marina to the Gulf of Mexico, affecting substantial economic, recreational and educational interests. There are also a number of businesses in the Columbus area that in the past have relied on the navigation channel and still desire to use navigation. Columbus has a port facility under the direction of the Georgia Ports Authority that has been considered for upgrade a number of times, but the upgrades have not gone forward due to concerns over system reliability. In the 1980s, the Port of Columbus provided significant receipt and storage of fuel going to Fort Benning, and other products for local industry and agriculture use. The lack of proper maintenance drives system reliability. New efforts to revive the port are ongoing. Water transportation has significant fuel efficiency and environmental benefits over rail and highway transportation.

Denial of the maintenance permit will substantially and adversely affect navigation as an option to these business interests.

21. Columbus did not become aware of the permit denial until after October 31, 2005 at a Mid-Chattahoochee River Users meeting.

***City of Eufaula, Alabama***

22. Very much like Columbus, Eufaula is also an original rivertown. In 1963, the Corps of Engineers constructed Lake Eufaula (Walter F. George) and restored the inland port at Eufaula that had been so important during the 19th until the mid-20th century.

23. Eufaula has preserved and restored many of the beautiful antebellum homes and historic structures in the city and has developed a significant tourism industry. The river is an important part of Eufaula's historic past and supports key programs such as Voyage of Discovery and Riverway South. Access to the navigation channels remains critical to these historical, environmental and educational programs, as well as aspects of Eufaula's economic base.

24. Eufaula, like Columbus, is substantially harmed by the denial of the Corps' navigation maintenance permit. Eufaula has a number of interests in maintaining the navigation channel including LakePoint Marina, a state facility that provides a number of large berths for vessels that routinely travel to the Gulf and back. The Historical and Eco-tourism industries are of interest to Eufaula, growing, and they both depend, in large part, on the ability to navigate the entire ACF system, including the Apalachicola River. The inability to maintain the small, but critical reaches in the Apalachicola will potentially result in loss of the federally authorized navigation channel on the ACF.

25. Eufaula did not become aware of the permit denial until after October 31, 2005 at a Mid-Chattahoochee River Users meeting.

### *Oxbow Meadows Environmental Learning Center*

Oxbow Meadows is an outreach program of Columbus State University. Since 1997, Oxbow Meadows has been working to develop a nature/cultural tourism program within the Apalachicola-Chattahoochee-Flint (ACF) watershed. To this end, Oxbow Meadows has initiated the development of two specific organizations that work to promote the tourism resources associated with the river system (Voyage of Discovery, Inc. and RiverWay South). In 1998, Oxbow Meadows spearheaded the formation of Voyage of Discovery, Inc. (VOD), a 501(c)3 organization whose purpose is to foster river-centered connections and partnerships within and among communities and organizations in the Apalachicola-Chattahoochee-Flint (ACF) watershed. Since that time, Oxbow and VOD have provided citizens in the ACF watershed opportunities to travel that watershed from Columbus to Apalachicola by boat and have sponsored educational and informational programs highlighting the potential for cultural/historic/nature-based tourism, navigation, and recreation on and along the ACF river system. In order to effectively promote and coordinate such river-related activities, VOD has also encouraged linkage and communication among riverside communities, governments, organizations, and businesses within the system.

In addition to helping protect the natural, cultural and historic resources associated with these rivers, VOD seeks to use the tourism products to spur sustainable economic development, particularly in the counties of southwestern Georgia and southeastern Alabama south of Columbus, and the Florida panhandle. According to Congressional reports initiated by former Senator Zell Miller (GA), these counties are the 9<sup>th</sup> poorest in the nation. This three-state tourism effort has served as a springboard for discussion and activity particularly related to

recreation and navigation on the ACF system and the maintenance of dredging on the river system. These efforts focus on developing a sustainable tourism business that will not “kill the goose that laid the golden egg.” The goal is to develop a program of sustainable economic development that will spur an economic revolution in the tri-state region within the ACF watershed.

To accomplish this challenging economic development goal VOD hired Randall Travel Marketing, Inc. (RTM), one of the most respected travel development firms in the country, to conduct a study of the ACF river system and its adjacent communities to determine whether a river-centered, ecologically sustainable nature/heritage tourism effort could be successful in our region. After collecting extensive data on resources of the watershed, touring the ACF system by boat and car, conducting interviews with 36 civic, political and business leaders, and hosting two focus forums with 56 respondents in Atlanta, RTM reported a resounding YES answer to the question.

In 2003 and 2005, VOD applied for and received \$200,000+ in funding through the US Department of Agriculture’s Rural Business Opportunity Grant Program. An Executive Director was hired and these federal funds are now being used to help spur nature/cultural tourism in these depressed counties in the ACF watershed in Georgia, Alabama, and Florida.

*Insufficient Notice to Tri-Rivers Waterway Development Association*

25. In FDEP's Order Dismissing Mid-Chattahoochee River Users' Petition With Leave to Amend, FDEP states that notice of the denial was directly supplied by FDEP to Tri-Rivers Waterway Development Association (Tri-Rivers), citing to page 15 of the Denial reflecting that a Ms. Rebecca Martin was provided a copy. Upon information and belief, the Corps is referring to an e-mail sent to Ms. Martin containing a webpage link for accessing an email copy of the Denial. Ms. Martin no longer serves as Executive Director of Tri-Rivers and did not serve in this capacity at the time the notice was provided. Ms. Martin serves in a consulting role for Tri-Rivers only.

26. Further, Tri-Rivers depends on receiving pertinent information by United States mail and delivery-confirmed courier in conducting its business. Tri-Rivers has confirmed that it was not mailed a copy of the denial at any time and never received notice of the Denial from FDEP. Tri-Rivers did not learn of the permit denial until October 31, 2005, when I was forwarded a copy of the Denial by facsimile from the Corps of Engineers. In addition, as previously stated in this affidavit, those members whose substantial interests are adversely impacted by the permit denial did not receive from FDEP a copy of the denial or learn about the denial until October 31, 2005 and after.

27. Mid-Chattahoochee River Users filed this appeal within fourteen days of its first obtaining a copy of the Denial as forwarded by the Corps on October 31, 2005. In the event it is determined that Mid-Chattahoochee River Users' petition is untimely, any failure to file a Petition within fourteen days of the denial on October 11, 2005 is the result of excusable neglect. In order to file the petition, Mid-Chattahoochee River Users had to review the permit denial first

obtained on October 31, 2005, confer with its members regarding the denial and filing a petition for administrative hearing, retain legal counsel and file its petition. Mid-Chattahoochee River Users filed its petition promptly and within fourteen days after learning of the denial.

The foregoing is true and correct to the best of my personal knowledge.

Date: 12-8-05

Thomas C. Moorer  
THOMAS C. MOORER

Sworn to (or affirmed) and subscribed before me this 8th day of December, 2005.

(SEAL)

Personally Known ☒ OR

Produced Identification \_\_\_\_\_

Type of Identification Produced \_\_\_\_\_

John J. Garrett  
**MY COMMISSION EXPIRES**  
9-14-06

**STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**MID-CHATTAHOOCHEE RIVER  
USERS,**

Petitioner,

v.

**STATE OF FLORIDA, DEPARTMENT  
OF ENVIRONMENTAL PROTECTION  
and U.S. ARMY CORPS OF ENGINEERS,**

Respondents.

**DEP OGC Case No. 05-2591**

DEP File No. 0129424-005-DF

**AFFIDAVIT OF KIM BOULDEN**

STATE OF Alabama )  
COUNTY OF Houston )

Before me, a Notary Public for the above-noted state and county, personally appeared Kim Boulden, who being duly sworn, deposes and says as follows:

1. My name is Kim Boulden. I am over the age of twenty-one, and I have personal knowledge of the matters contained in this affidavit. I reside at 43 Fieldcrest Lane #2316, Dothan, Alabama 36371. I am currently employed as the administrative assistant for the Tri-Rivers Waterway Development Association ("TRWDA"), a nonprofit tri-state organization incorporated in 1960 to encourage the development, operation, and maintenance of the Apalachicola-Chattahoochee-Flint Inland Waterway and River System.

2. In my capacity as the administrative assistant, I am the sole TRWDA employee responsible for, among other things, checking TRWDA's mail, which is delivered to the following address: Tri-Rivers Waterway Development Association, P.O. Box 2232, Dothan, Alabama 36302.

3. At all times relevant to these proceedings, including October 11, 2005 through today, I have fulfilled my responsibility of checking TRWDA's mail at the above address.

4. To the best of my personal knowledge, TRWDA did not receive written notice via mail to the above address of the Consolidated Notice of Denial, Wetland Resource Permit and Authorization To Use Sovereign Submerged Lands ("permit denial"), signed on October 11, 2005, by Colleen M. Castille, Secretary of the Florida Department of Environmental Protection.

5. The foregoing is true and correct to the best of my personal knowledge.

Date:

12/07/05

Kim Boulden

KIM BOULDEN

Sworn to (or affirmed) and subscribed before me this 7th day of December, 2005.

(SEAL)

Personally Known OR

Produced Identification \_\_\_\_\_

Type of Identification Produced

Not a Notary

My Commission  
Expires September 16, 2006



Chattahoochee River (Lake Seminole) navigation channel and place the dredged material in disposal sites located within the floodplain or banks of the Apalachicola River. The denial specifically provided that any petitions for administrative hearing had to “be filed within 14 days of publication of the notice [of the denial] or within 14 days of [its] receipt ..., whichever occurs first.” Among other individuals and organizations directly supplied that denial was Tri-Rivers Waterway Development Association, of whom many of the members of the Petitioner association herein are also members.<sup>1</sup>

The Amended Petition was filed in response to an Order of Dismissal with leave to amend entered on November 23, 2005. As discussed below, the Department lost jurisdiction over the notice of denial when the time period for challenge by the Corps expired without a challenge by the Corps. The Department may address a jurisdictional defect at any time. *See Rappa v. Island Club West Dev., Inc.*, 890 So. 2d 477 (Fla. 5<sup>th</sup> DCA 2004). In addition, Petitioner has demonstrated neither associational standing nor standing of its members.

*The Amended Petition cannot be granted as a matter of law.*

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<sup>1</sup> The private entities who were directly notified of the denial were Apalachicola Riverkeepers, Nature Conservancy, Florida Wildlife Federation, Apalachicola Estuary National Research Reserve, Tri-Rivers Waterway Development Association, and Help Save the Apalachicola River Group. *See* Exhibit 1, at p. 15.

The Amended Petition must be dismissed with prejudice because, as explained below, the Department is unable, as a matter of law, to redress any alleged injury of the Petitioner's members through an administrative hearing under Chapter 120, Florida Statutes. The applicant for the permit, the Corps, did not challenge the denial and is now foreclosed from challenging it. *See* Rule 62-110.106(3)(b), Fla. Admin. Code. The Corps neither filed a petition for administrative hearing under Section 120.569, Florida Statutes, nor appealed the Department's decision under Section 120.68, Florida Statutes. The denial is final agency action and the Department lost jurisdiction over it when the time period for challenge by the Corps expired without a challenge by the Corps. *See generally Saddlebrook Resorts v. Wiregrass Ranch, Inc.*, 630 So. 2d 1123, at 1128 (Fla. 2d DCA 1993)(discussing agency jurisdiction to conduct a formal proceeding to address a permit application, unless the applicant itself timely withdraws the application), *approved*, 645 So. 2d 374 (Fla. 1994); *cf. also City of North Port v. Consolidated Minerals, Inc.*, 645 So. 2d 485, at 486 (Fla. 2d DCA 1994)(discussing the requirement that a permit applicant file a motion for leave to withdraw its permit application where, in formal administrative proceedings initiated by the applicant, the evidence has already been submitted to the fact finder for a determination).

The Corps failure to file a petition for hearing within the applicable time period constitutes a waiver of the right to obtain an administrative hearing under Chapter 120, Florida Statutes. *See* Rule 62-110.106(3)(b), Fla. Admin. Code. Therefore, the Corps waived its right to an administrative hearing under Chapter 120, Florida Statutes, by failing to file a petition within 14 days of receiving the notice of denial. *See Florida Dep't of Env'tl. Regulation v. Puckett Oil Co.*, 577 So. 2d 988 (Fla. 1<sup>st</sup> DCA 1991); *Dickerson, Inc. v. Rose*, 398 So. 2d 922 (Fla. 1<sup>st</sup> DCA 1981). The Corps is, therefore, foreclosed from participating in an administrative hearing on the permit denial and without the participation of the permit applicant, the *de novo* hearing designed to formulate agency action cannot occur. *See Florida Dep't of Transp. v. J.W.C. Co.*, 396 So. 2d 778, at 785 (Fla. 1<sup>st</sup> DCA 1981)(observing that section 120.57 proceedings “are intended to formulate final agency action, not to review action taken earlier and preliminarily”)(quoting *McDonald v. Dep't of Banking and Finance*, 346 So. 2d 569, at 584 (Fla. 1<sup>st</sup> DCA 1977)).

It is a fundamental precept of Florida administrative law that, in a *de novo* hearing on an environmental permit, the applicant has the burden of proving entitlement to the requested permit. *Id.* at 787-788. The applicant has the burden of going forward with *prima facie* evidence of reasonable assurances for permit

issuance and has the ultimate burden of persuasion regarding its entitlement to a permit. *Id.* at 787-788. Waiver of the right to the Chapter 120 hearing by the Corps results in the administrative remedy of a *de novo* hearing being foreclosed to any third parties such as the Petitioner in this case. Therefore, under the provisions of Section 120.569(2)(c), Florida Statutes, the amended petition must be dismissed with prejudice.

*The Amended Petition is insufficient.*

If the Department could consider this Amended Petition, it is deficient in at least two respects and questionable in a third respect. First, it fails to establish associational standing. Second, it fails to demonstrate standing for any of the Petitioner's members. Third, the Amended Petition fails to prove that it was timely filed (especially with many of the Petitioner's members also being members of the Tri-Rivers Waterway Development Association which did receive direct notice of the agency action herein).

As for associational standing, the Amended Petition alleges that six of the thirteen members of the Petitioner are substantially affected by the permit denial. *See* Affidavit of Thomas C. Moorer, p. 3, attached to Exhibit 1. The Petitioner alleges that it will suffer injury in fact which is of sufficient immediacy to entitle Petitioner to a hearing, and the injury is of a type or nature which the proceeding is

designed to protect. *See id.* Under Florida law the allegations are insufficient to establish the associational standing of an organization such as the Petitioner. In 2002 the Florida Legislature amended Section 403.412(5), Florida Statutes, codifying the well-established standing test of *Agrico Chemical Co. v. Dep't of Envtl. Regulation*, 406 So. 2d 478 (Fla. 2d DCA 1981), for initiating a proceeding under Sections 120.569 or 120.57, Florida Statutes, by a party whose substantial interests will be determined or affected.<sup>2</sup> Section 403.412(5), Florida Statutes, provides:

Nothing herein limits or prohibits a citizen whose substantial interests will be determined or affected by a proposed agency action from initiating a formal administrative proceeding under s. 120.569 or s. 120.57. A citizen's substantial interests will be considered to be determined or affected if the party demonstrates it may suffer an injury in fact which is of sufficient immediacy and is of the type and nature intended to be protected by this chapter. No demonstration of special injury different in kind from the general public at large is required. A sufficient demonstration of a substantial interest may be made by a petitioner who establishes that the proposed activity, conduct, or product to be licensed or permitted affects the petitioner's use or enjoyment of air, water, or natural resources protected by this chapter. (Emphasis added).

§ 403.412(5), Fla. Stat. (2005).

The Petitioner admits that it is “an unincorporated multi-state association whose members are public and private corporations and associations in Alabama

<sup>2</sup> Section 403.412(5), Florida Statutes, was amended by chapter 2002-261, Laws of Florida, effective July 2002.

and Georgia,” that “does not currently have a physical address.” See Exhibit 1, p. 2. In other words, the Petitioner admits it is not a citizen of the state of Florida. As such, it cannot demonstrate associational “substantial interest” standing for a Chapter 120, Florida Statutes, administrative proceeding, under current Florida law. See § 403.412(5), Fla. Stat. (2005); *Envtl. Confederation of Southwest Florida, Inc. v. Dep’t of Env’tl. Protection*, 886 So. 2d 1013, 1016 (Fla. 1<sup>st</sup> DCA 2004)(reflecting that revisions to section 403.412(5) substantially limited participation in the permitting process including the provision that a party may only initiate a proceeding upon the showing of a “substantial interest.”); see also *Legal Env’tl. Assistance Found. v. Dep’t of Env’tl. Protection*, 702 So. 2d 1352, 1353 (Fla. 1<sup>st</sup> DCA 1997)(holding that a foreign corporation was not a citizen with standing to intervene under section 403.412(5), Florida Statutes).

Even if the Petitioner could establish associational standing as a citizen, Petitioner has not demonstrated that it otherwise meets the requirements for demonstrating standing. Although the specific allegations of injury to Petitioner’s members attempt to meet the test established by *Florida Home Builders Ass’n v. Dep’t of Labor & Employment Security*, 412 So. 2d 351 (Fla. 1982), and its progeny, the Petitioner’s allegations repeatedly relate back to economic injury. See e.g., Exhibit 1, p. 8, items 7 and 8; p. 9, item 13; p. 10, item 18. Under the

standing test of *Agrico* mere economic injury is not within the zone of interest to be protected under the Department's regulatory scheme. 406 So. 2d at 481-83; see also *Miller v. Dep't of Envtl. Regulation*, 504 So. 2d 1325 (Fla. 1<sup>st</sup> DCA 1987)(reflecting that review of the public interest criteria is limited to environmental impacts). Contrary to the Petitioner's assertion in the Amended Petition "collateral financial impact" on its members is not cognizable in a proceeding on an environmental permit action. See Exhibit 1, p. 4. The case cited by the Petitioner, *Florida Bd. of Medicine v. Florida Academy of Cosmetic Surgery, Inc.*, 808 So. 2d 243 (Fla. 1<sup>st</sup> DCA 2002), concerns associational standing to challenge a rule issued by the state board of medicine. Florida case law has consistently confirmed that standing in a licensing proceeding is predicated on a somewhat different basis than standing in a rule challenge proceeding. See generally *Dep't of Prof'l Regulation v. Florida Dental Hygienist Ass'n*, 612 So. 2d 646, 651 (Fla. 1<sup>st</sup> DCA 1993)(standing in a licensing proceeding under section 120.57 is predicated on a somewhat different basis than standing in a rule challenge under section 120.56); cf. also *Florida Soc'y of Ophthalmology v. State Bd. of Optometry*, 532 So. 2d 1279 (Fla. 1<sup>st</sup> DCA 1988).

Perhaps recognizing this infirmity, Petitioner alleges that it desires to "champion equitable, optimal use and good stewardship of the water resources."

*See* Exhibit 1, p. 6. The Petitioner further alleges that “[p]reservation and promotion of navigation on the Apalachicola River in a manner that appropriately manages and stewards natural and environmental resources is central to the broad mission and more specific goals of the Mid-Chattahoochee River Users.” *See* Exhibit 1, p. 6. These statements and similar statements in the Amended Petition, however, lack sufficiently specific supporting facts and therefore, do not provide standing. *Cf.* § 120.54(5)(b)4., Fla. Stat. (2005) and Rule 28-106.201(2), Fla. Admin. Code (providing that the uniform rules of procedure shall require a petition for a section 120.569 or 120.57 hearing to “include a statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency’s proposed action”).

As for timeliness, Rule 62-110.106(3)(b), F.A.C., provides that failure to file a petition for hearing or request an extension of time within the applicable time period constitutes a waiver of any right to obtain an administrative hearing under Chapter 120, Florida Statutes. Thus, the Petitioner’s failure to file its original petition for hearing within the requisite 14-day time period could constitute a waiver of its right to request an administrative hearing under Chapter 120. Nevertheless, principles of administrative due process and equity, as well as the Florida Administrative Procedure Act (APA), require that an agency provide an

opportunity to explain the reasons why a request for administrative hearing should be considered timely, or its untimeliness excused, before the agency can consider denying such request and dismissing the case. *See, e.g., Phillip v. Univ. of Florida*, 680 So.2d 508, 509 (Fla. 1<sup>st</sup> DCA 1996); *Castillo v. Dep't of Admin., Div. of Retirement*, 593 So. 2d 1116, 1117 (Fla. 2<sup>nd</sup> DCA 1992); *Carter v. Vickers*, 22 F.A.L.R. 2814 (Fla. DEP 2000) (the Department's "timeliness" decision controlling in this matter). Accordingly, the Petitioner was given an opportunity to file an amended petition showing why its Petition should be considered timely or its untimeliness excused. The Amended Petition's allegations constitute disputed issues of material fact regarding the timeliness issue. Therefore, under the Fourth District's decision in *Accardi v. Dep't of Env'tl. Protection*, 824 So. 2d 992 (Fla. 4<sup>th</sup> DCA 2002), if the Petitioner could be granted an administrative hearing, the timeliness of the original petition would be a matter for adjudication by the administrative law judge.

*Alleged violations of federal law cannot be considered.*

In addition to the deficiencies discussed above, the amended petition attempts to raise issues that cannot be addressed in this administrative forum. The Amended Petition also alleges that the permit denial is in violation of federal law. *See Exhibit 1, p. 28.* However, federal law is not considered in a Florida

administrative proceeding. *See Curtis v. Taylor*, 648 F. 2d 946, 948 (5<sup>th</sup> Cir. 1980)(concluding that, in a state administrative hearing under Section 120.57, F.S., an administrative hearing officer was not empowered to consider claims that state actions were invalid based on alleged violations of federal law). The *Curtis* rationale has been followed in a series of Florida administrative decisions. *See, e.g., Putnam County Env'tl. Council v. Dep't of Env'tl. Protection*, 24 F.A.L.R. 4674 (Fla. DEP 2002); *Rowe v. Oleander Power Project*, 22 F.A.L.R. 1173, 1177 (Fla. DEP 1999); *Miccosukee Tribe v. South Florida Water Mgmt. District*, 20 F.A.L.R. 4482, 4486-4487 (Fla. DEP 1998).

IT IS THEREFORE ORDERED:

- A. The Petition is DISMISSED, with prejudice.
- B. This Order constitutes final agency action of the Department.

Any party to this Order has the right to seek its judicial review under Section 120.68, Florida Statutes, by the filing of a notice of appeal pursuant to Rules 9.110 and 9.190, Florida Rules of Appellate Procedure, with the Clerk of the Department in the Office of General Counsel, 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000, and by filing a copy of the notice of appeal

accompanied by the applicable filing fees with the appropriate district court of appeal. The notice of appeal must be filed (received) within thirty days after the date this Order is filed with the Clerk of the Department.

DONE AND ORDERED this 12<sup>th</sup> day of January, 2006, in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT  
OF ENVIRONMENTAL PROTECTION



GREGORY M. MUNSON

General Counsel

3900 Commonwealth Boulevard  
Tallahassee, Florida 32399-3000

FILED ON THIS DATE  
PURSUANT TO § 120.52,  
FLORIDA STATUTES, WITH  
THE DESIGNATED  
DEPARTMENT CLERK,  
RECEIPT OF WHICH IS  
HEREBY ACKNOWLEDGED.

  
CLERK

11/12/06  
DATE

**CERTIFICATE OF SERVICE**

I hereby certify this 12<sup>th</sup> day of January, 2006, that a true copy of the foregoing has been mailed to:

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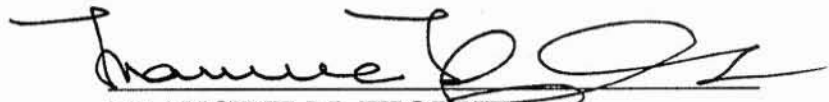
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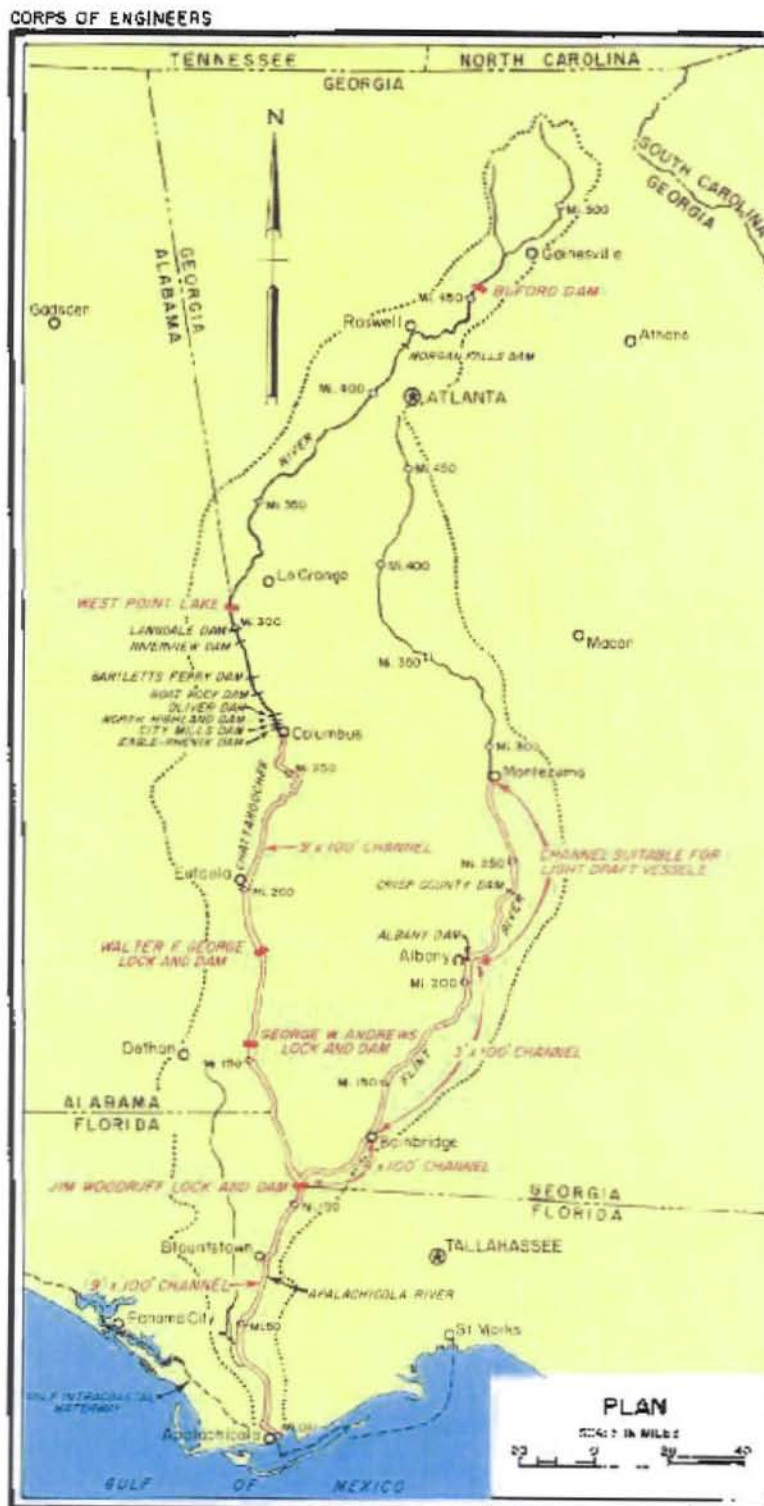
**Economic Impact of Operations and Maintenance Dredging  
on the  
Apalachicola-Chattahoochee-Flint Waterway**

**INTRODUCTION**

The purpose of this report is to depict the benefits of continued Operations and Maintenance (O&M) dredging on the Apalachicola, Chattahoochee, and Flint (ACF) Rivers. The current project is authorized by the Rivers and Harbors Act of 1945, and modified by the Water Resources Development Act of 1986. The entire ACF Waterway project includes navigation, flood control, hydropower, and recreational features.

This report is concerned with the navigation portion of the project, a 9-foot deep by 100-foot wide channel in the Apalachicola River from the intersection of the Gulf Intracoastal Waterway to the confluence of the Chattahoochee and Flint Rivers, 104 miles in length, thence to Columbus Georgia, on the Chattahoochee River, 164 miles in length, and to Bainbridge, Georgia on the Flint River, 29 miles in length. Figure 1 shows the navigation limits of the authorized federal project.

**Figure 1**  
**Project Map**



## HISTORIC AND EXISTING CONDITIONS

Table 1 shows the historic trends of barge traffic and tonnage by commodity on the ACF Waterway between 1990 and 2005. Through most of the 1990's, traffic on the ACF was consistently high. This was due to reliability of the ACF channels. During that time, annual tonnage ranged from 550,000 to 640,000<sup>1</sup>, and annual traffic ranged from 900 to 1,200 trips.

Dredging was conducted throughout the 1990s, although the channel was only partially dredged in 1999 due to a shortage of dredged material disposal capacity. No dredging was conducted in 2000 and only minimal dredging was conducted in 2001 due to extreme drought and low water conditions. The navigation project was not dredged in 2002-2005.

The significant drops in both traffic and tonnage, especially between 2001 and 2005, reflect the unreliability of the river system due to a lack of dredging. During that time, many companies went to truck and rail, which is a more expensive means of transportation. These numbers show that there has been adequate historic demand for shipping on the ACF, and defend the findings of this report.

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<sup>1</sup> These numbers include Sand and Gravel to show historic conditions. However, the majority of previous sand and gravel shipments were associated with a sand and gravel operation on the Chattahoochee River with shipments made through the Jim Woodruff Lock to an unloading facility at NM 105 on the Apalachicola River. These shipments did not require dredging since they required channel depths of only 7-feet rather than the authorized project depth of 9-feet; hence they have no impact on the benefits identified in this report. The Chattahoochee River sand and gravel dredging operation was closed down in 2002, as reflected in the commodities shipment shown in Table 1.

**Table 1**  
**Historic Trends of Barge Traffic and Tonnage by Commodity on the ACF Waterway**  
**(1,000 tons)**

<b>Commodity</b>	<b>1990</b>	<b>1991</b>	<b>1992</b>	<b>1993</b>	<b>1994</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>
Petroleum Products	171	174	128	81	64	108	54	130	65	34	35			6		
Fertilizers	135	135	162	164	135	166	181	138	91	60	22			2		
Chemicals	24	52	48	42	26	28	25	14	10	13	3					
Forest Products	5			4	4	2	4	2	2	1						
Sand and Gravel	260	251	266	246	395	261	294	249	263	245	216	220	18	28		
Farm Products	15	4	7	15	10	21	9	7		3						
Non-Metallic	20	14	9	6	2											
All Others	6	2		1		2		1		2		1			3.1*	
<b>Totals</b>	<b>636</b>	<b>632</b>	<b>620</b>	<b>559</b>	<b>636</b>	<b>588</b>	<b>567</b>	<b>541</b>	<b>431</b>	<b>358</b>	<b>276</b>	<b>221</b>	<b>18</b>	<b>36</b>	<b>3.1*</b>	<b>0*</b>
<b>Source: Waterborne Statistics Center, U.S. Army Corps of Engineers, New Orleans, LA</b>																
<b>* Source: Lock Performance Monitoring System-Tonnage seen at Jim Woodruff Lock and Dam ONLY.</b>																

Existing waterway users are Steward Machine, Farley Nuclear and, Southeastern Materials. Other users are willing and able to use the waterway if dredging would resume. They include the port of Columbia, Georgia Ports, Chattahoochee River Terminal and Ergon. Steward Machine and Farley Nuclear are not scheduled users of the project but they must have waterborne transport for their large and usually oversized shipments, which cannot use other modes of transportation. The next table shows the frequency and average value of these shipments.

**Table 2**  
**Table of Annual Shipments**

<b>Company</b>	<b>Commodity</b>	<b>Tonnage</b>	<b>Origin</b>	<b>Destination</b>	<b>Value</b>
Steward Machine <sup>2</sup>	Fabricated Steel	2 barges (Round trip)	Bainbridge	New Orleans, Ohio River	\$5,000,000
Farley Nuclear <sup>3</sup>	Oversized reactor equipment	1 Barge (Round trip)	Eastern U.S. Coast	Farley Nuclear Plant	\$100,000,000
S.E. Minerals <sup>4</sup>	Micronutrients	20,000	Foreign Ports	Florida	\$9,340,000
Port of Columbia	Seeking container-on-barge traffic from the new Choctaw Point Container Port				
Georgia Ports	Currently uses truck/rail, but would use ACF if made reliable.				
Chattahoochee River Terminal	Currently uses truck/rail, but would use ACF if made reliable.				
Ergon	Currently uses truck/rail, but would use ACF if made reliable.				

<sup>2</sup> Steward Machine will ship two Lock gates to the Corps of Engineers, New Orleans District by the end of the year. It is also in bid for the Olmstead Lock and Dam project for the Corps of Engineers, Louisville District, which would continue the 2 barges per year through 2010. These lock gates can not be shipped by rail or truck.

<sup>3</sup> Farley Nuclear plans to make one shipment in January 2006. The shipment will be reactor vessels that weigh approximately 200 tons and are valued at \$100M. The reactor vessels are radioactive and require encasement in oversized lead containers, extra safety precautions, and heightened security. The only alternative method of transportation would be rail, which would require millions of dollars in infrastructure upgrades to accommodate the size of the shipments.

<sup>4</sup> S.E. Mineral ships approximately 20,000 tons of feed grade micronutrients (zinc, manganese, etc.) per year. The products come in from all over the world. Due to lack of data, cargo value and shipping costs were not able to be obtained.

## BENEFITS

Benefits will arise from the Corps of Engineers maintaining the ACF channels in FY 2006. The benefits fall into three categories: 1) loss of jobs, 2) transportation cost savings, and 3) reduced supply costs due to economies of scale. These benefits convey the importance of performing maintenance dredging in FY 2006. They are all a direct result from making the ACF a reliable waterway, and maintaining the authorized depth.

## LOSS OF JOBS

Steward Machine Co., Inc. is a steel fabrication company, which is currently manufacturing lock gates for the Corps of Engineers. Each gate weighs between 200 and 300 tons, which makes it impossible to transport them by any other means than by barge. See Figures 2, 3, and 4.

Steward Machine estimates that it has 50 employees in a typical year. If they were unable to ship by barge, their manufacturing operation would be relocated to another location with access to waterborne transportation. According to the 2002 U.S. Economic Census, the average salary for a manufacturing worker in Decatur County, Georgia is \$27,915<sup>5</sup>. This results in a \$1,395,750 direct impact from loss of wages for the economy.

**Figure 2**  
**Steward Machine Co., Inc.**  
**Plant No. 3**  
**Bainbridge, Georgia**



<sup>5</sup> Based on 2002 U.S. Census Economic Survey: County Business Patterns for Decatur, Georgia.

**Figure 3**  
**Lock Gate Moving to Barge**



**Figure 4**  
**Lock Gate Waiting for Barge**



## **TRANSPORTATION COST SAVINGS**

For purposes of this report, transportation cost savings are defined as the savings that arise from using the ACF Waterway over other means of transportation. These cost savings come from either current users experiencing an increase in transportation costs because they could no longer use the channels, or from potential users experiencing transportation cost savings because the channel would once again be reliable for barge transportation.

## **INCREASES TO EXISTING ACF USERS**

Existing users of the ACF Waterway currently enjoy cost savings from being able to ship by barge. If the ACF Waterway were no longer dredged, these users would be forced to find alternate means of transportation such as truck or rail. This change would increase the cost of transportation for those users. Due to the size of the lock gates produced at Steward Machine Co., Inc., alternate means of transportation are not feasible. Therefore, Steward Machine would not receive any transportation savings.

The Joseph M. Farley Nuclear Plant is located near Dothan in southeastern Alabama. The plant has a 1,776 megawatt capacity and is a major production facility for Southern Company, the parent of Alabama Power Company. The plant employs approximately 900 full-time employees and up to 1,100 more temporary employees during power outages.

The plant utilizes the ACF Waterway for transportation of oversized nuclear related equipment. Between 2003 and 2005, Farley Nuclear shipped two reactors valued at \$380 million. In January 2006, the plant plans to move \$100 million worth of reactor vessels that weigh approximately 200 tons. Since these reactor vessels are radioactive, they must be shipped in oversized lead containers for increased safety, along with heightened security for their protection.

By 2015, Farley Nuclear is projected to become the flagship of Southern Company's nuclear capability. This would require significant expansion to the current facilities. Large portions of the plant would be built off-site, and then shipped to the plant using the waterway.

If the plant could no longer use the waterway, Alabama Power Company would be forced to use rail for its transportation needs. The current span and state of the rail system would not support the plants needs, thus requiring \$3 million to \$5 million dollars (estimated) in infrastructure investment. Furthermore, the plant would not become Southern Company's flagship, costing the area hundreds of additional jobs and additional annual revenue.

## SAVINGS FOR POTENTIAL USERS

As mentioned above, potential users would experience transportation savings from being able to use a reliable channel. These potential users include: 1) Chattahoochee River Terminal, 2) Ergon, 3) Southeastern Materials and 4) Georgia Ports. Each of these companies was contacted about using the ACF if it were made reliable.

Southeastern Minerals, Inc. is located in Bainbridge, GA, and typically employs 30 full-time employees. According to its website, the company was started in 1962, and has served the southeastern United States feed industry ever since. The current plant was built in 1985, and has four production lines for the handling and mixing of micronutrients (manganese, zinc, selenium) to make feed.

Southeastern Minerals moves approximately 20,000 tons of cargo annually. Currently, the company uses truck and rail, but would rather use barge transportation if the ACF Waterway was made reliable. Shipments come and go from all over the country, but Panama City, Florida is a typical destination. For the most part, demand is evenly distributed throughout the year, but slightly higher in winter months.

If the ACF Waterway were made more reliable, Southeastern Minerals, Inc. would utilize it for its transportation needs. The company estimates that it would need 15 round trip barge shipments to accommodate its transportation needs. The barges would bring the micronutrients to the plant and ship the finished feed from the plant to Panama City, Florida. The barges would not draft near the authorized depth of the channel, but the Tug Boats that push the barges would require a 9-foot draft depth. The transportation cost savings from the ability to use barges would be \$ 23.61 per ton, or \$ 472,200 per year.

The Georgia Port Authority, Port of Bainbridge, projects potential waterborne traffic if the waterway were made more dependable. The next table presents these potential movements and the waterborne transportation cost savings that would be generated for the Port of Bainbridge given a reliable waterway. The transportation cost savings from the ability to use barges would be \$1,431,755 per year.

**Table 3**  
**Georgia Port Authority – Bainbridge, Georgia**  
**Potential Traffic**

Commodity	Tons	Origin	Destination	Barge	Rail	Savings
Bulk Gypsum	15,000	Geismar, La.	Bainbridge	\$6.41	\$13.61	\$108,000
Cottonseed	2,300	Bainbridge, Ga.	New Orleans, La.	\$5.82	\$20.17	\$33,005
Bulk Fertilizer	20,000	New Orleans	Bainbridge, Ga.	\$3.22	\$12.60	\$187,600
Liquid Fertilizers	25,000	Texas	Bainbridge, Ga.	\$8.56	\$28.76	\$505,000
Coal	200,000	Tuscaloosa, Al.	Bainbridge, Ga.	\$5.39	\$6.53	\$228,000
Chemicals	20,000	Arkansas	Bainbridge, Ga.	\$14.90	\$20.47	\$111,400
Ferrous Scrap	15,000	Bainbridge, Ga.	New Orleans, La.	\$4.43	\$21.68	\$258,750
Total	297,300					\$1,431,755

### **ECONOMIES OF SCALE**

Economies of scale arise when per unit costs go down as increased volumes are purchased. This happens because fixed costs can be spread over more units, thus reducing the cost of each unit. This savings is associated with the cost of purchasing the product, not from transportation savings.

Due to the nature of the liquid asphalt business, Ergon would experience significant economies of scale by being able to use barge transportation instead of rail. The savings due to the effects of these economies of scale have been estimated to be some \$35 per ton. This equates to an annual savings of \$4,725,000 (\$35 x 135,000 tons).

Total transportation savings, the difference between the cost of the next least costly alternative mode of transportation (truck and/or rail) and barge transportation to potential waterway users amounted to a total savings of \$2,729,200 as shown in Table 4 below.

**Table 4**  
**Summary Transportation Savings for Potential ACF Users**

<b>Company</b>	<b>Annual Tonnage</b>	<b>Cost of Current Transportation</b>	<b>Cost of Barge Transportation</b>	<b>Transportation Cost Savings</b>
Chattahoochee River Terminal	25,000	\$650,000	\$500,000	\$150,000
Ergon <sup>6</sup>	135,000	\$4,185,000	\$3,510,000	\$675,000
Southeastern Minerals	20,000	\$528,600	\$56,400	\$472,200
Georgia Ports	297,300	\$3,262,000	\$1,830,000	\$1,432,000
<b>Total</b>				<b>\$2,729,200</b>

## **FUTURE GROWTH**

The Eufaula Economic Development Office, along with the Alabama State Port Authority, is in process of conducting a study for the Port of Eufaula. The purpose of the study is to determine industry demand for intermodal (containerization) capability at the port. The Port, currently under-utilized, would be a strategic location for containerized traffic going up the east coast because of its distance from the Port of Mobile. The study is scheduled to be completed by the end of 2005.

Intermodal transportation is characterized by high value-added (manufactured) products that come from all over the world. The containers, known as twenty-foot equivalent units (TEUs), would be loaded on barges at their origin port, brought to the Port of Eufaula, and then unloaded directly to rail or truck. This method of shipping is highly cost effective, and could represent a high dollar flow of goods on the ACF Waterway.

<sup>6</sup> Ergon ships 1,500,000 barrels of asphalt per year, using a conversion factor of 11.11 barrels per ton (1,500,000/11.11=135,000).

## TOTAL BENEFITS

The total benefits for dredging the ACF channels are between \$9.9 million and \$11.9 million for 2006. Should the ACF be maintained and made reliable, these annual benefits, less the \$3 million to \$5 million from Farley Nuclear, would remain constant through at least 2008. Beyond 2008, the benefits could easily increase if the authorized channel depths were maintained annually. These findings are consistent with the historical data from the 1990's. See Table 5 for a benefit summary.

**Table 5**  
**Total Benefits Summary**

<b>Benefit Category</b>	<b>Benefits (\$ Millions)</b>
Loss of Jobs	\$1,395,750
Increase in Transportation Costs	\$3,000,000 to \$5,000,000 (estimated)
Reduction in Transportation Costs	\$2,729,200
Economies of Scale	\$4,725,000
<b>Total</b>	<b>\$11,849,950</b> <b>To</b> <b>\$13,849,950</b>

## Impacts to States

In an effort to assess the impacts to the individual States an apportionment was considered. The loss of jobs at Steward Machinery would principally affect the State of Georgia, although due to its proximity to the State of Alabama some employees are certainly residents of that State. Likewise Farley Nuclear is located near the town of Dothan, Alabama, some employees are residents of the State of Georgia and even Florida but its power is sold to Alabama customers, so they will carry the burden of higher power bills. Certainly the majority of the impacts would occur in Alabama.

The remaining benefits, reductions in transportation and economies of scale, are all National Economic Development Benefits. That is they are benefits that the nation as a whole participates in. These lower transportation costs are usually passed along to all consumers in the form of lower purchase price.

Overall the impacts of no dredging on the ACF are and would continue to be passed along to the American consumer in the form of higher prices. The impacts by location are presented below.

**Table 6**  
**Location and Size of Impacts**

<b>Location</b>	<b>Benefit Category</b>	<b>Impact</b>
Alabama	Increase in Transportation	\$3,000,000 to \$5,000,000
<b>TOTAL - ALABAMA</b>		<b>\$3,000,000 to \$5,000,000</b>
Georgia	Loss of Jobs	\$1,395,750
<b>TOTAL - GEORGIA</b>		<b>\$1,395,750</b>
National	Increase in Transportation	\$2,729,200
National	Economies of Scale	\$4,725,000
<b>TOTAL NATIONAL</b>		<b>\$7,454,200</b>

### **Navigation with Dredging**

The Mobile District prepared a 'Draft Environmental Impact Statement (EIS) – Water Allocation for the Apalachicola-Chattahoochee-Flint (ACF) River Basin' in September 1998. In that report the percent of time depth available statistics were calculated based on daily flows over a 55-year period of record ending in 1993. The analysis found that 19.6 percent of the time there was 7.5 feet or less of navigable depth available. If the assumption is made that the 55-year period of record represented a reasonable approximation of the true average flows expected on the ACF, then on average, allowing for a 1-foot under keel clearance, about 20 percent of the time navigation would not be possible. Table 6 is extracted from the Draft EIS.

**Table 7**  
**Depth Percent Availability**  
**Period of Record Averaged – Blountstown Gage**

9 feet or more	8.5 feet or more	8 feet or more	7.5 feet or more	7.5 feet or less	
56.07%	64.80%	70.21%	74.01%	25.99%	Oct
24.89%	33.70%	42.35%	55.26%	44.74%	Nov
44.09%	48.55%	52.89%	58.10%	41.90%	Dec
76.83%	81.64%	86.30%	90.11%	9.89%	Jan
86.65%	89.68%	93.39%	95.87%	4.13%	Feb
92.05%	92.95%	93.39%	94.66%	5.34%	Mar
82.66%	85.95%	88.19%	90.41%	9.59%	Apr
67.42%	73.18%	78.31%	83.12%	16.88%	May
59.87%	69.50%	79.19%	84.11%	15.89%	Jun
62.49%	69.68%	77.86%	80.09%	19.91%	Jul
52.85%	63.52%	75.95%	79.61%	20.39%	Aug
60.89%	68.96%	73.65%	79.01%	20.99%	Sep
63.90%	70.18%	75.97%	80.36%	19.64%	Average

### Navigation with Available Seasonal Flows

Without dredging Steward Machine Company and Farley Nuclear power may use the waterway when available seasonal flows permit. With historical dredging expected channel depths greater than 7.5 feet would occur about 80 percent of the time. Without dredging this availability would be much less and during drought periods would cease altogether for as many as 3 or 4 years, as has been experienced in the past. Other potential users would not be able to use the waterway at all, as can be seen by the level of waterway usage during 2004 and 2005 where dredging has not been utilized.

Transportation contracts must be completed ahead of the desire to ship movements. Most contracts are for a definite period of time, usually the shortest of which is about a year. When only available seasonal flows are providing channel depths for towboats that require 7.5 foot depths, fixed contracts are out of the question. Ten years ago there were at least ten barge and towing companies that worked the ACF system on a regular basis. Today there are none. Only one operator said that he would even consider using the waterway while it is in seasonal high flows and that he would only try one barge, subsequently increasing the cost of using the waterway.

Lock gates, nuclear vessels and similar manufactured monoliths would incur long delays awaiting sufficient depths for barge transportation causing protracted delays to both the manufacturer and the buyers. Others who depend on timely arrival of equipment and inventory would have to continue to use more expensive modes of transportation or lose the opportunity altogether. All of which increases the cost of goods and services provided to the consumer.

Farley Nuclear has a scheduled shipment in 2006 of radioactive reactor parts for disposal.

### **Other Effects**

A navigable channel is required for the Corps to float equipment and materials to the federal projects for lock and dam repair and maintenance activities. Usually these repairs are conducted during the low water season. It has been approximately 20 years since Walter F. George lock was repaired. George W. Andrews lock repair and maintenance has been scheduled but delayed for the past 3 years.

Channel depths required are a minimum of seven feet. In order to perform this work a dredge that can be disassembled, trucked onsite, and reassembled could be mobilized to dredge its way to the project if access via the Apalachicola River was not possible due to inadequate project depth. Inland Dredging Company, LLC of Dyersburg, Tennessee has a 24-inch dredge that meets this description - the Integrity. All other things being the same, mobilizing and demobilizing a dredge in this manner would surely be at an increased cost over bringing a dredge up the river. Inland Dredging Company estimates these mobilization/demobilization costs to be about \$2,000,000. Current mobilization/demobilization costs for bringing a barge up the river are approximately \$500,000.



Waterway Development Association  
P.O. Box 2232, Dothan, AL 36302  
334/792-8611/8612

January 24, 2006

VIA OVERNIGHT DELIVERY

Col. Peter F. Taylor, Jr., Commander  
Mobile District, Corps of Engineers  
Attention: CESAM-DE  
109 St. Joseph Street  
Mobile, Alabama 36602

Re: Use of Federal Funds Appropriated for Dredging on the Apalachicola River

Dear Col. Taylor:

For many years, Tri Rivers Waterway Development Association (Tri Rivers) has worked with the U.S. Army Corps of Engineers and the United States Congress to promote the operation, maintenance, and improvement of navigation on the Apalachicola-Chattahoochee-Flint river system (ACF Project). The ACF Project provides tremendous value for business development, economic growth, recreational opportunities, low cost hydroelectric power, flood control protection, and fish and wildlife habitat. Communities along the river system, including vast portions of eastern Alabama and western Georgia, are counting on the continued viability of the ACF Project as the engine driving their future growth and prosperity.

Year after year, Tri Rivers and its members have traveled to Washington and met with Congress, in particular the members of the House and Senate Appropriations Committees, to support adequate funding for dredging and other activities necessary to operate and maintain the ACF Project for navigation. Thanks in large part to Tri Rivers' efforts, Congress has fully funded the ACF Project in recent years. In fact, since 1998, each year's appropriations have substantially exceeded the Administration's budget requests. Those annual appropriations, based on the line items designated for operation and maintenance of the ACF Project in each year's conference reports, are as follows:

Col. Peter F. Taylor, Jr.  
January 24, 2006  
Page 2

Fiscal Year	Budget Request	Appropriation	Increase
1998	\$4,741,000	\$6,500,000	\$1,759,000
1999	4,700,000	5,200,000	500,000
2000	5,830,000	6,500,000	670,000
2001	5,055,000	6,755,000	1,700,000
2002	1,237,000	12,900,000	11,663,000
2003	1,444,000	4,709,000	3,265,000
2004	1,500,000	5,000,000	3,500,000
2005	117,000	5,231,000	5,114,000
2006	1,050,000	2,500,000	1,450,000
<b>TOTALS:</b>	<b>\$25,674,000</b>	<b>\$55,295,000</b>	<b>\$29,621,000</b>

As you know, dredging is a significant component of the operation and maintenance activities funded in these annual appropriations bills. Consequently, Congressional report language in a number of years directed the Corps to devote substantial portions of these annual funds specifically for dredging activities on the ACF Project. For example, the conference report for fiscal year 2001 included \$1,200,000 for "increased environmental dredging." The conference report and statutory language for fiscal year 2002 included \$4,900,000 for a dredged material management plan, in addition to a very large appropriation for other operation and maintenance activities. The conference reports for fiscal years 2003, 2004, and 2005 specifically referenced dredging as among the activities funded by Congress in each of those years.

Unfortunately, however, the Corps has not dredged critical areas on the Apalachicola River since 2001. This lack of maintenance dredging seriously jeopardizes the future of the ACF Project. Due to concerns about the reliability of the navigation channel, shippers and other users of the river system have declined precipitously in recent years. Opponents of these beneficial uses of the ACF Project are now using present low shipment volumes to argue that further ACF maintenance is not cost-effective. Clearly, if the Corps continues in its failure to maintain the ACF Project, there is a serious risk that Congress will cut future appropriations for that purpose. If that happens, the ACF Project will die.

In fact, the fiscal year 2006 conference report provides an ominous indication that this worst-case scenario may already be underway. The report at page 108 states: "The conferees understand that the State of Florida has denied the Corps a State Water Quality Certification; therefore, no funds are provided for dredging this waterway in Florida." To our knowledge, the Corps has taken no action to appeal or to override the state's water quality certification denial. Nor are we aware of any other action by the Corps directed toward accomplishing the dredging activities which Congress has generously funded and explicitly directed the Corps to accomplish each year for the past decade.

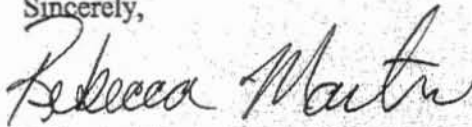
In light of the failure of the Corps to properly maintain the ACF Project for navigation, Tri Rivers believes now is an appropriate time for the Corps to explain what it has done with the funds which Congress has provided for dredging and other operation and maintenance activities for the ACF Project. Therefore, Tri Rivers requests you provide to us as soon as possible, but no

Col. Peter F. Taylor, Jr.  
January 24, 2006  
Page 3

later than March 1, 2006, a complete and thorough accounting of the use of all ACF Project annual appropriations from fiscal year 1998 through fiscal year 2006.

Please feel free to contact me if you need further clarification or if you have any questions or comments.

Sincerely,

A handwritten signature in cursive script that reads "Rebecca Martin". The signature is written in dark ink and is positioned above the printed name and contact information.

Rebecca Martin, Executive Director  
800-243-4774  
334-790-4183

Please accept the following comments from Troup County Engineer, James R. Emery, Jr., P.E.:

West Point Lake's elevation is intentionally managed at a level that is too low during the winter. The current rule curves provide disproportionately large amounts of flood storage during the winter as compared to all other Federal projects on the basin. The 628' MSL zone 1 winter pool elevation does not allow adequate utilization of the lake for other congressionally authorized purposes such as "recreation" and "sport fishing and wildlife development". The low elevation also has tremendous negative economic impacts on our region. The low lake levels also cause over 500 miles of shoreline to become exposed causing erosion and extremely high turbidity during rain events. During this time of re-assessment of the Corps of Engineers' operations manuals, this error can (and should) be corrected.

There are two primary reasons for West Point Lake's lower-than-necessary elevations:

- 1) The "Flood Control" authorized use of West Point Lake has been over-emphasized in the current operations manuals as compared to the other authorized uses, and the necessary winter flood storage capacity has been over-estimated. Proof of this can be found in the (newly available) fact that the September 2009 "Flood of record" for this basin was routed through West Point Lake with no significant flooding downstream of the dam even though management of the event began with West Point Lake above full pool (Elevation 635.3 Monday morning September 21, 2009). The rain event was unprecedented. The USGS has put the event in a category of floods that can only be compared with a handful of rain events that have ever occurred in the history of this country. The center of the rain event was in the center of the West Point Lake sub-basin. The Chattahoochee River gage at West Point measured its record flow during the December 1919 Flood; a record that still stands today thanks to West Point Lake. The 1919 flood also produced record flows at the Franklin gage, the Whitesburg gage, the Fairburn gage and the Atlanta gage. The September 2009 flood caused river flows in excess of the 1919 flood at the Franklin gage, the Whitesburg gage, and other gages upstream of West Point Lake, but the flows below the dam were managed at rates that cause no significant flooding at all. The flood only resulted in a rise in lake elevation from 635.3 to 639.26 (leaving nearly two additional feet of storage). 2009 has also been the wettest year on record for many parts of the ACF basin (including the rain gages at Columbus). The gages in Atlanta have measured the second wettest year ever; the gages in Macon have measured the third wettest year on record. In all likelihood, we will never again have to deal with a flood of this magnitude, and yet it was

successfully managed with a starting lake elevation above 635 – not 628. This is proof that the required winter flood storage has been grossly over-estimated.

- 2) Water is being supplied to downstream interests at a flow rate that is higher than what would occur naturally, and is higher than these downstream interests have any “right” to. The flow through West Point Dam should be based upon meeting the congressionally “Authorized Purposes” of the project ...and not based upon “wants” and “desires” of downstream water users that do not have congressional authorizations for flows higher than what would occur naturally. The base flow at West Point Dam is 675 CFS. This is TRIPLE the unregulated (natural) low flow of September 12, 1925 (224 CFS); and it is DOUBLE the monthly average low flow of September 1925 (333 CFS). Even though all downstream river users are now guaranteed this much greater amount of flow, they continue to demand more. All users of the resource should have drought contingency plans to provide for their sustainability during dry times when the proper management of West Point Dam only provides the established base flow of 675 CFS.

Study should be directed at the effects on water quality of emptying West Point Lake down to elevations below the levels established as the “recreational impact” of 632.5’ MSL. After a full season of summer pool management, the lake bottom is covered with silt and clay particles that have settled out of runoff water. As long as the lake remains full, the particles remain stationary and cause no ill-effects. However, when the lake level is intentionally drawn down for an incorrect flood storage requirement, or to satisfy downstream desires, the lake bottom becomes exposed. When this un-stabilized mud is exposed to even small rain events the result is an extremely turbid lake. If even one acre of exposed un-stabilized mud such as this were left on a construction site, the owner would be expected (required) to spend hundreds or thousands of dollars on BMPs to prevent the erosion and sediment from leaving the site. If the site did erode and cause sediment to run off into “state waters” the property owner would face sever fines and would be required to provide restitution. Yet, every fall, the USACOE exposes over 12,000 acres of un-stabilized mud and allows it to erode directly into “state waters”.

There is no question that the Corps has done a tremendous job of providing “flood control” and “hydropower”, as authorized by Congress, but there needs to be a better balance of other authorized uses such as “recreation” and “Sport Fishing and wildlife development”. The management of the lake seems severely weighted toward some uses with little regard for the others.

My request is that the revised or new ACF Water Control Manuals must provide consistently higher water levels in the West Point Lake at or above 633 msl.

Thank you for the opportunity to comment on the proposed operation of a resource that means EVERYTHING to Troup County. Although Kia Motors' construction of their billion-dollar manufacturing plant has brought a lot of attention to Troup County, the economic benefit of West Point Lake has been estimated at approximately five times the economic benefit of Kia. This is a VERY important issue to us.



3 Puritan Mill 916 Joseph Lowery Blvd. Atlanta, GA 30318 404-352-9828 Fax 404-352-8676 www.chattahoochee.org

**December 23, 2009**

**Tetra Tech, Inc.  
107 Saint Francis Street, Suite 1403  
Mobile, AL 36602-9986**

**Colonel Byron Jorns  
US Army Corps of Engineers - Mobile District  
PO Box 2288  
Mobile AL 36628-0001**

**RE: Notice of Intent to Revise Scope of Draft Environmental Impact Statement (EIS) for  
Updating the Water Control Manual for the Apalachicola–Chattahoochee–Flint (ACF)  
River Basin to Account for Federal District Court Ruling**

Dear Colonel Jorns:

I am writing on behalf of the Upper Chattahoochee Riverkeeper in response to the November 19, 2009 Public Notice published in the Federal Register (FR Doc. E9-27787) concerning the Water Control Manual Update for the Apalachicola-Chattahoochee-Flint (“ACF”) River Basin. These comments are supplemental to those we submitted on November 21, 2008 in response to the September 19, 2008 Public Notice (FR Doc. E8-21912).

Upper Chattahoochee Riverkeeper (“UCR”) is a non-profit environmental advocacy organization dedicated to the protection and restoration of the Chattahoochee River, its tributaries, and watershed. UCR represents more than 5,000 members who use and enjoy the river and its resources and depend on the Chattahoochee River and its lakes as a source of drinking water and for recreation.

In our November 2008 letter, our comments focused primarily on the operation of Buford Dam and its impacts on water quality, recreation, fishing, and water supply downstream from the Lake Lanier project on the Chattahoochee River. In light of the July 17, 2009 federal judicial ruling significantly curtailing metro Atlanta’s access to Lake Lanier for water supply, we make the following additional comments.

While the ruling clarifies the limited degree to which Lanier can be operated for water supply, the response of the three states, Georgia in particular, will have a significant impact on the ACF Basin. For instance, we note the array of water supply options recently proposed by Georgia’s Water Contingency Task Force, which include

- **Pump-Storage Reservoirs along Tributaries to the Chattahoochee River**—We have serious concerns with at least two of these—Glades Farm, South Fulton Bear Creek. I have attached comment letters UCR has submitted to the Corps’ Savannah District that highlight both our site-specific as well as our ACF River Basin-wide concerns.
- **Deviation from Georgia’s Interim Instream Flow Policy and Peachtree Creek Flow Target**—We further note that the Task Force has proposed significant deviations from the state’s Interim Instream Flow Policy as well as the 750 cfs flow target Peachtree Creek presumably to increase yield within these water supply reservoirs. These proposals will have devastating impacts on water quality, recreation, habitat, and other key instream needs throughout the ACF Basin. I have attached a comment letter UCR submitted to the Task Force which also raises these concerns.
- **Inter-Basin, Intra-Basin, and Interstate Water Transfers**—The Task force has proposed everything from inter-basin transfers (moving water from Lake Burton and Lake Hartwell/Savannah River Basin to Gwinnett County’s water treatment plant on Lake Lanier) to intra-basin transfers (moving water from West Point Lake up into Metro Atlanta) to even interstate transfers (from Alabama’s Tennessee River to “somewhere” in the Metro District). Of course, because of widespread use of septic systems, any transfer of treated water into Gwinnett County may ultimately end up in the Ocmulgee Basin, not the Chattahoochee. As for West Point Lake, there are serious concerns over inadequate flows to maintain current water quality conditions let alone restore water quality to meet designated uses.
- **Aquifer Storage and Recovery (ASR)**—Finally, the Task Force has proposed at least one ASR site in northwest Georgia that, if implemented, may adversely impact the surface hydrology and water quality of the ACF River Basin.

Although still in the planning stages, each of these options is undergoing serious scrutiny by the state of Georgia and a decision on implementation is imminent. If any or all of these above options are implemented, they will significantly impact the Corps ACF operations, which must accommodate authorized uses of navigation, hydropower, and flood control. With respect to the latter, the recent historic 500-year flood is a good indicator of the management challenges the Corps will continue to face as metro Atlanta’s rapid, unchecked development leads to more and more impervious surfaces throughout the ACF Basin.

Along with highly engineered, unsustainable options that will adversely impact the ACF River Basin if pursued, the Task Force has proposed a handful of relatively modest conservation measures to help address the 2012 water “gap” left by the federal judicial ruling. In conjunction with the Georgia Water Coalition (GWC), UCR submitted extensive comments (attached) detailing the true potential of water conservation to meet water supply needs. The region’s ongoing reluctance to readily embrace water conservation means that more demands will be placed on the ACF system. These foreseeable future demands will cumulative and adversely impact Corps ACF operations.

Finally, we also want to emphasize the need for the Corps to consider the ongoing Federal Energy Regulatory Commission (FERC) relicensing of the Bartlett’s Ferry facility and the operations of other non-Corps facilities during the Water Control Manual update. Notably, some 60,000 acre-feet of storage is available in Lake Harding, which could provide roughly 1,000 cfs

of water for 40 or more days. One alternative that the Corps ought to consider is the integration of non-Corps, federally-licensed reservoirs into a meaningful drought contingency plan.

Thank you very much for this opportunity to comment again on the update to the ACF Water Control Manual.

Sincerely,

A handwritten signature in black ink that reads "Laura Hartt". The signature is fluid and cursive, with the first name "Laura" and last name "Hartt" clearly distinguishable.

Laura Hartt  
Water Policy Director  
Upper Chattahoochee Riverkeeper  
916 Joseph Lowery Blvd.  
3 Puritan Mill  
Atlanta, GA 30318

Ph: 404-352-9828, x 15  
lhartt@ucriverkeeper.org



*Keeping Watch Over Our Waters*

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UCR02-comments on Glades Reservoir

September 4, 2009

Colonel Edward J. Kertis  
District Engineer  
U.S. Army Corps of Engineers  
100 W. Oglethorpe Avenue  
Savannah, GA 31402

Carol Couch, Ph.D.  
Director, Environmental Protection Division, DNR  
2 Martin Luther King Jr. Drive, SE  
Suite 1152, East Floyd Tower  
Atlanta, GA 30334-9000

**Re: JPN for Glades Reservoir; Application number 200700388**

Dear Colonel Kertis and Dr. Couch:

I am writing on behalf of Upper Chattahoochee Riverkeeper ("UCR") regarding the above-referenced application from Hall County ("County" or "applicant") to construct and operate an 850-acre reservoir within the Chattahoochee River Basin on Flat Creek, a tributary in Hall County, Georgia, that flows into Lake Lanier.

As you know, UCR is a non-profit environmental advocacy organization dedicated to the protection and restoration of the Chattahoochee River, its tributaries, and watershed. UCR represents more than 4,500 members who use and enjoy the river and its resources and depend on the Chattahoochee River and its lakes as a source of drinking water and for recreation.

The County has applied to the United States Department of Army Corps of Engineers ("Corps") for a permit to construct and operate Glades Reservoir, pursuant to Section 404 of the Clean Water Act ("Act") (33 U.S.C. § 1344), and Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. § 403). Because the applicant seeks a federal permit to conduct activity in, on, or adjacent to the waters of the State of Georgia, a water quality certification is required under Section 401 of the Clean Water Act from the Georgia Department of Natural Resources, Environmental Protection Division ("EPD").

**For the following reasons, UCR is opposed to the approval, construction, and operation of Glades Reservoir, and we respectfully request that the Corps and EPD deny the application at this time.**

**A. Judge Magnuson's order prohibits permitting Glades Reservoir at this time.**

The most recent decision in the so-called Tri-State Water Wars renders the Glades Reservoir proposal invalid at this time, because the reservoir proposal entails taking more water out of Lake Sidney Lanier ("Lake Lanier") for water supply. On July 17, 2009, Paul A. Magnuson, United States District Court Judge, issued a long-awaited decision on the question of whether the Corps' operations in the ACF Basin -- including the execution of water-supply contracts and installation of water intake structures in Lake Lanier, the alleged preference of water supply over other purposes, and the denial of Georgia's water-supply request -- violated, among other federal laws, the Water Supply Act of 1958 ("WSA").<sup>1</sup> In the judge's memorandum and order, he presented a lengthy review of the Buford Dam project's legislative history, including its authorization, planning, funding, and construction. Ultimately, the record supported the judge's conclusion that "water supply, in the form of withdrawals from Lake Lanier and large-scale withdrawals from the Chattahoochee River, was not an authorized purpose of the Buford project."<sup>2</sup> Specifically, the court found that since the 1970's, the Corps had allowed the Buford project to be used for the unauthorized purposes of municipal and industrial water supply at ever-increasing rates such that the Corps had effectively reallocated storage for water supply without the necessary Congressional approval as required by the WSA.

In relevant part, the Water Supply Act provides that:

[m]odifications of a reservoir project heretofore authorized, surveyed, planned, or constructed to include storage [for water supply] which would seriously affect the purposes for which the project was authorized, surveyed, planned, or constructed, or which would involve major structural or operational changes shall be made only upon the approval of Congress . . .<sup>3</sup>

In order to resolve the WSA violations and address the "de facto" reallocations for municipal and industrial water supply uses, the court has stayed the litigation for three years.<sup>4</sup> In that time, the parties are "to secure the required Congressional authorization for the changes to the operation of the Buford project."<sup>5</sup> The judge further ordered that, "[a]t the end of three years, absent Congressional authorization or some other resolution of this dispute, the terms of this Order will take effect."<sup>6</sup> In the event that the parties are not able to resolve the outstanding authorizations and reallocations as required by the order, operation of Buford Dam will return to the "baseline" operation of the mid-1970's.<sup>7</sup> An exception to the judge's findings, which is relevant here, is that the city of Gainesville has

<sup>1</sup> Water Supply Act of 1958 ("WSA"), 43 U.S.C. § 390 *et. seq.*

<sup>2</sup> *In re Tri-State Water Rights Litigation*, No. 3:07-md-01 at 92, (M.D.Fla. July 17, 2009).

<sup>3</sup> 43 U.S.C. § 390b(d).

<sup>4</sup> *In re Tri-State Water Rights Litigation*, No. 3:07-md-01 at 93.

<sup>5</sup> *Id.*

<sup>6</sup> *Id.*

<sup>7</sup> *Id.*

the right to withdraw up to 8 million gallons per day (“MGD”) directly from Lake Lanier.<sup>8</sup> In the meantime, the court ordered that “the parties may continue to operate at current water-supply withdrawal levels but **should not increase those withdrawals absent the agreement of all other parties to this matter.**”<sup>9</sup>

Several months before the Tri-State Water Wars ruling was issued, the Corps’ Headquarters considered a related question, namely, “[w]hether the use of Lake Lanier as a “flow-through conveyance” mechanism would require a reallocation of storage space and water supply pursuant to the [WSA].”<sup>10</sup> Though Hall County asserted that the WSA was not applicable in this case because water from its planned reservoir would temporarily flow through Lake Lanier, the Corps disagreed. In an internal memorandum answering the question above, the Corps stated, “[t]he fact that this water may be stored in Lake Lanier for a brief period or the fact that the same amount of water would be withdrawn from Lake Lanier does not in our judgment preclude the applicability of the Water Supply Act of 1958 or the requirement for a storage contract.”<sup>11</sup>

Thus, according to Judge Magnuson’s Order and the Corps Headquarters’ memorandum, the Glades Reservoir project cannot be permitted at this time. First, as mentioned above, while the Tri-State litigation has been stayed for three years, the court has ordered that Lake Lanier and Buford Dam be operated at current water supply withdrawal levels, but that no increase of those withdrawals shall be allowed, unless all the parties to the litigation approve. Approval, construction, and operation of Glades Reservoir would not maintain the current water supply withdrawal levels of Lake Lanier. Hall County admits that in order to operate Glades Reservoir as currently proposed, up to 6.4 MGD would be released from the dam, flow through Lake Lanier, and be withdrawn from the city of Gainesville intake. Therefore, in addition to the 10 to 12 MGD that Gainesville is already withdrawing above its judicially authorized allocation of 8 MGD, the city would need to withdraw an additional 6.4 MGD from Lake Lanier to operate Glades Reservoir. Additionally, the Corps would have to grant the County permission to construct the dam within the flowage easement on the federal property. These activities are not within the scope of maintaining current operations at Lake Lanier, and thus, are prohibited by the judge’s order.

Second, as stated in the Corps Headquarters’ March 2009 memorandum, the period of time that water released from the Glades Reservoir would be stored in Lake Lanier has no bearing on the requirements of the WSA. Thus, according to the WSA, construction and operation of Glades Reservoir alone would require the Corps to enter into a storage contract with Hall County to reallocate Lake Lanier storage, and Judge Magnuson has explicitly prohibited such activity without the agreement of all of the parties including Florida and Alabama.

Third, the Tri-State Water Wars litigation is not yet complete since the Phase II claims, which address Florida’s allegations arising under the Endangered Species Act, have not been ruled upon by

<sup>8</sup> *Id.* at 14, 20, 25, 53, 79, 82, 93.

<sup>9</sup> *Id.* at 93 (emphasis added).

<sup>10</sup> Memorandum for Commander, South Atlantic Division, “Resolution of policy issues associated with the proposed Glades Reservoir, Hall County, Georgia—(Apalachicola-Chattahoochee-Flint (ACF) River Basin,” Mar. 9, 2009.

<sup>11</sup> *Id.*

the court.<sup>12</sup> The outcome of Florida's environmental claims—that the Corps has unlawfully retained water in its upstream reservoirs, has interrupted flows needed to support riverine-spawning activities, and has refused to provide minimum flows needed to sustain species in the Apalachicola River—will likely have an equally significant effect on Lake Lanier's operations.<sup>13</sup>

Fourth, as noted by Judge Magnuson in his July 2009 order, the Water Control Manual for the ACF Basin, including Lake Lanier, is over 50 years old and is currently undergoing a long awaited update.<sup>14</sup> An updated ACF Basin Water Control Manual for Lake Lanier will include, among other things, specifications for storage and guidelines for making water management decisions. A comprehensive analysis of the proposed reservoir cannot be made without consideration of the guidelines for water management of Lake Lanier. Thus, the Corps should not consider the application in question until the Water Control Manual specific to Lake Lanier and its watershed is completed.

For all of the reasons stated above, the Corps should stay review of the Glades Reservoir permit application until all matters related to the Tri-state Water Wars litigation are resolved. Moreover, as described in more detail below, proper consideration of a CWA Section 404 permit application requires the Corps to evaluate the project according to EPA's 404(b)(1) guidelines—the substantive environmental criteria used in evaluating a section 404 permit application to the Corps.<sup>15</sup> In addition, the National Environmental Policy Act requires that the Corps determine whether the project will have a significant affect on the quality of the human environment, which at a minimum requires the preparation of an Environmental Assessment.<sup>16</sup> It is our opinion that for this project to comply with NEPA, an EIS should be prepared for both the construction of the dam in the flowage easement, as well as for the impacts as a result of the preferred alternative. Proper consideration of the 404(b)(1) guidelines and NEPA compliance cannot be done until all of the outstanding issues detailed above have been resolved.

## **B. Water Supply Need**

The applicant premises its water supply needs assessment on the Metropolitan North Georgia Water Planning District ("Metro District") Water Supply and Water Conservation Management Plan. In this plan, the Metro District derives its future water demand projections from three primary factors: (1) baseline/current water use; (2) population and employment growth; and (3) water conservation.

Baseline/current water use set the initial conditions (i.e., starting value) for generating the future water demand projections. If that baseline value is inflated, then the future demand (i.e., end value) also will be inflated. We note that the Metro District chose 2006 as their baseline year

<sup>12</sup> Endangered Species Act ("ESA"), 16 U.S.C. § 1531 *et seq.*

<sup>13</sup> See Florida Department of Environmental Protection letter to federal agencies, Re: 60-Day Notice of Intent to Sue Pursuant to the Endangered Species Act, dated June 19, 2008 (identifying threatened Gulf sturgeon, endangered fat threeridge, and purple bankclimber collectively as 'Apalachicola River Species').

<sup>14</sup> *In re Tri-State Water Rights Litigation*, No. 3:07-md-01 at 21, 94.

<sup>15</sup> 40 C.F.R. § 230.10.

<sup>16</sup> National Environmental Policy Act ("NEPA"), 42 U.S.C. § 4332.

for projecting future water demand. According to the Corps, 2006 was, in fact, the second highest year in terms of water use over the past 17 years.<sup>17</sup>

Compounding this analytical error is an improper upward “adjustment” made to the 2006 baseline use, further inflating the starting value used to generate the projections. The Metro District erroneously presumed that water use was somehow depressed in 2006 because of drought conditions, when in fact the Corps’ analysis shows just the opposite.

Further driving the future water demand projections is the rate of change in demand over time, or the slope of the projection. Impacting this slope are two primary factors—(1) population and employment growth, which will increase demand over time; and (2) water conservation, which will decrease demand over time. Therefore, assumptions of rapid population and/or growth will tend toward overstating future water demand; similarly, assumptions of weak conservation measures also will overstate future water demand. We address these two factors in more detail below, but suffice it to say that these glaring deficiencies leave us with little confidence in the accuracy of the future water demand projections for Hall County or any other county in the Metro District.

The Metro District water plans are based upon high population and employment growth scenarios, which remain unsubstantiated, particularly in light of the historically profound economic recession we now face. In fact, a recent Atlanta Regional Commission report substantiates this, noting that Metro Atlanta population growth from 2008-09 was the lowest it has been in the past 20 years.<sup>18</sup>

In order to properly and objectively address the factors described above, the Corps should contract with a third party to provide an independent evaluation of the applicant’s water supply needs assessment, including the baseline/current water use, population and employment growth, and water conservation projections.

We acknowledge the city of Gainesville’s progress with respect to implementation of the water conservation measures required by the Metro District. Nonetheless, we note that the Metro District’s requirements are insufficient, aiming to reduce water use by a mere 13% by 2035. In fact, temporary, outdoor watering restrictions imposed during the recent drought have yielded more savings over the past year than the Metro District plan proposes over the next 26 years. In order to meet future water demands while minimizing costs and environmental degradation, all local governments within North Georgia will have to become more aggressive about water conservation and efficiency. See the “Alternatives” discussion below for further discussion on the need to go above and beyond the Metro District’s meager requirements by assessing meaningful water conservation measures as a reasonable alternative to the Glades Reservoir.

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<sup>17</sup> Buford Dam Water Supply Analysis prepared at the request of Office of Council, November 23, 2008, available at [http://water.sam.usace.army.mil/Buford\\_Dam\\_Water\\_Supply\\_Analysis\\_23\\_Nov\\_08.pdf](http://water.sam.usace.army.mil/Buford_Dam_Water_Supply_Analysis_23_Nov_08.pdf)

<sup>18</sup> See [http://www.atlantaregional.com/html/81\\_5433.aspx](http://www.atlantaregional.com/html/81_5433.aspx)

### C. Section 404 permit and 404(b)(1) guidelines

The goal of the Clean Water Act is to “restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.”<sup>19</sup> To achieve this goal, the Act generally prohibits the discharge of dredged or fill materials into waters of the United States unless authorized by a permit.<sup>20</sup> Section 404 of the Act authorizes the Corps to issue permits for the discharge of dredged or fill material into waters of the United States when certain conditions are met.<sup>21</sup>

Federal guidelines prohibit the permitting of projects in two instances relevant here. First, a permit may not be issued where there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem.<sup>22</sup> Second, a permit may not be issued where it will cause or contribute to significant degradation of the waters of the United States, which includes significantly adverse effects on the life stages of aquatic life and other wildlife dependent on aquatic ecosystems and loss of fish and wildlife habitat.<sup>23</sup>

The EPA’s 404(b)(1) guidelines are the substantive environmental criteria used in evaluating a section 404 permit application to the Corps.<sup>24</sup> The following is our analysis of the County’s application in light of the factors set forth in the 404(b)(1) guidelines, and the reasons why we believe that the project does not comply with these guidelines.

#### 1. Purpose and Need

Federal guidelines require that the applicant clearly state a project’s basic purpose that can be used for an alternatives analysis.<sup>25</sup> A correct statement of the project’s “basic purpose” affects whether the presumption of practicable alternatives applies, and thus the extent of the applicant’s burden to show whether other alternatives are practicable which would have less adverse impact on the aquatic ecosystem.<sup>26</sup> Importantly, an applicant cannot define a project in order to preclude the existence of any alternative sites, and thus, make what is actually practicable appear impracticable.<sup>27</sup>

A review of the regulatory record shows that the County has vacillated between two stated purposes and needs for the Glades Reservoir. In 2003, when the County submitted its first permit application to the Corps, the request stated that “[c]onstruction of a reservoir at the Glades property has a dual purpose.”<sup>28</sup> At that time, the County asserted that the reservoir would serve as both an amenity lake and a water supply reservoir.

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<sup>19</sup> 33 U.S.C. § 1251(a).

<sup>20</sup> *Id.* § 1311(a).

<sup>21</sup> *Id.* § 1344.

<sup>22</sup> 40 C.F.R. § 230.10(a).

<sup>23</sup> *Id.* § 230.10(c).

<sup>24</sup> 40 C.F.R. § 230.10.

<sup>25</sup> 40 C.F.R. § 230.10.

<sup>26</sup> *Id.*

<sup>27</sup> *Sierra Club v. Flowers*, 526 F.3d 1353, 1366 (11th Cir. 2008).

<sup>28</sup> 2003 application, 7b. Purpose and Need, at 8.

It will provide Hall County the capability to provide 5.5 MGD year-round supplemental supply (to meet future demand) and control interbasin transfers and it will also provide Glades Water and Utility Company an amenity for the Glades master-planned community for boating, swimming, and fishing.<sup>29</sup>

Following the withdrawal of the 2003 application, and later the resurrection of the project, state and federal agencies cautioned the County against presenting a dual purpose for the project. Thus, in its 2007 application, the County dropped the amenity lake aspect from its stated purpose and need.

To provide a reliable source of public water supply capable of satisfying the projected unmet water demand during drought conditions in the service area of Hall County for the projected population growth through the year 2060. The projected 2060 unmet water supply demand in the Service Area (with conservation measures) during drought conditions is 6.5 MGD annual average daily demand.<sup>30</sup>

While the applicant does not address the amenity lake function of Glades Reservoir in its current application, the County and its consultants continue to pursue this enterprise outside of the regulatory process.<sup>31</sup> In 2008, the Glades Farm landowners received approval to rezone two separate tracts of land—totaling more than 2,900 acres—surrounding the reservoir’s footprint for two massive, private developments, Cane Creek and Hagen Creek, for commercial and residential uses.<sup>32</sup>

As discussed below, the size of the planned reservoir is many times larger than is needed for the stated water supply yield. EPD has said as much in a letter to Hall County; “[t]his reservoir can provide a safe dependable yield of over 12.0 MGD utilizing 20% dead pool storage.”<sup>33</sup> Compare this so-called water supply reservoir—850-acres yielding 6.4 MGD, to the completed Cedar Creek Reservoir also located in Hall County that is 143 acres and will yield 9-12 MGD. In the record for Glades Reservoir, EPD noted that a typical water supply reservoir dedicates up to 75% of its volume for water supply. Additionally, the Georgia Comprehensive State-Wide Water Management Plan expressed a definite preference for use of full yield for water supply reservoirs.<sup>34</sup>

The JPN notes that the reservoir capacity is designed to yield 6.4 MGD as well as additional capacity for a contingency.<sup>35</sup>

<sup>29</sup> 2003 application, 7b. Purpose and Need, at 8 (emphasis added).

<sup>30</sup> Alternatives Analysis at 1.

<sup>31</sup> Gainesville Times, Public input sought on planned reservoir, by Melissa Weinman, dated July 15, 2009.

<sup>32</sup> The first tract of 1,477 acres was rezoned in January 2008, the second tract of 1,435 acres was rezoned in December 2008.

<sup>33</sup> Letter from EPD to Hall County Administrator, Re: Surface Water Withdrawal Permit Application, June 26, 2007.

<sup>34</sup> Georgia Comprehensive State-Wide Water Management Plan at p. 25.

<sup>35</sup> JPN at 3.

The rationale for the additional storage has been described by the applicant as a contingency to protect Hall County in times of severe drought and unpredictable weather patterns. The applicant has stated that a contingency is needed because modeling of the drought of record alone has not provided a consistent planning tool to appropriately size reservoirs in North Georgia. The applicant will supplement its application with a report further explaining the rationale and methodology behind the contingency storage prior to the expiration of the comment period.<sup>36</sup>

We have not received a notice that the supplemental report referenced above was made available during the comment period. In addition, the supplemental report was not made available to us through our FOIA request and records review. Furthermore, a review of the safe yield analysis shows that the applicant did not include data from the most recent drought of 2006-09. The Corps should require a revised yield analysis based on the latest and most severe drought data through 2008.

For years, the record shows that state and federal agencies expressed serious doubt that this reservoir is a water supply project, but rather an amenity lake for two massive, private developments. Apparently, despite the potential for greater water supply yield, the County has made a contractual arrangement with the Glades Farm landowners, who sold the land to the County for the reservoir and who own the property surrounding the proposed reservoir, that the reservoir would have strict drawdown limits to protect the property values of large scale homes surrounding the amenity lake.<sup>37</sup> The applicant's consultant has confirmed that aesthetics were considered when developing the reservoir's operations.<sup>38</sup> A true water supply reservoir, however, should not have such restrictive drawdown limitations to protect homeowners' recreational interests and property values, and the regulatory agencies have expressed concern about this aspect of the project.<sup>39</sup>

In this case, it is evident that the applicant has planned and designed the reservoir with the amenity aspect in mind first, and that water supply is only an incidental benefit; this "water supply reservoir" is rather a mask for what regulatory agencies would not otherwise permit. This fact is more evident after one considers the range of alternatives for meeting the stated unmet water supply need, a meager 6.4 MGD, which, as discussed in more detail below, can be secured by less environmentally damaging and less costly alternative measures.

## 2. Alternatives Analysis

Under the 404(b)(1) guidelines, the alternatives analysis is the primary screening mechanism to determine the necessity of permitting a discharge of dredge or fill material.<sup>40</sup> The guidelines prohibit all discharges of dredged or fill material into regulated waters, including

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<sup>36</sup> Id.

<sup>37</sup> GA DNR WRD Internal Memorandum from John Biagi to Kevin Farrell, Re: Glades Farm Water Supply Reservoir Flows, Sept. 20, 2006.

<sup>38</sup> Gainesville Times, "Public input needed on planned reservoir," by Melissa Weinman, July 11, 2009.

<sup>39</sup> See e.g., EPD Glades Reservoir file, hand written notes, dated November 7, 2006.

<sup>40</sup> 40 C.F.R. § 230.10(a).

wetlands, unless a discharge constitutes the least environmentally damaging practicable alternative that will achieve the basic purpose.<sup>41</sup> The guidelines recognize that certain areas regulated by the Act are deserving of special protection because of their ecological significance and positive contributions to the overall health or vitality of an ecosystem of a region.<sup>42</sup> Among other things, these certain areas include special aquatic sites such as wetlands.<sup>43</sup>

a) Preliminary Alternative Analysis

At the outset, the County refers to the Metro District's Water Supply and Conservation Plan's statement that any effort or project that increases water resources is critical to all of the jurisdictions of the Metro District.<sup>44</sup> Based on this principle, the County claims that Glades Reservoir is in line with the Metro District plan. Glades Reservoir will not increase water resources for the Metro District region, in fact, the reservoir is only harnessing water that would already be captured in Lake Lanier. Also, given the large surface area of Glades Reservoir, consumptive loss due to evaporation from the reservoir is of concern; this project may result in a net loss of water supply to Lake Lanier. It is a fallacy that the Glades Reservoir is a "new" water supply resource.

Throughout the preliminary alternatives analysis, the applicant attempts to make the practicable appear impracticable. The County repeatedly rejects alternatives to Glades Reservoir on the basis that the presence of a single alternative is not sufficient to avoid the construction of a new water supply source. Yet, the applicant does not meaningfully consider whether using a combination of multiple alternatives could together provide the water supply the County claims it so desperately needs; this is especially glaring because the County needs only a small amount of additional water over the course of 50 years.

Furthermore, as discussed above, the July 2009 Tri-State Water Wars order will have a significant impact on the preferred alternative and the overall alternatives analysis, as well as on the County and its water supply arrangements with the city of Gainesville. Therefore, the Corps should require the applicant to prepare a new alternatives analysis to reflect the new conditions imposed on Lake Lanier as a water supply source.

No Action - The No Action alternative should be reconsidered based on the following recent developments. First, as discussed in detail above, Gainesville's Lake Lanier intake may not be able to withdraw as much water as the County proposes at this time. Second, the Cedar Creek Reservoir may be able to supply significantly more water than the County expects at this time. Cedar Creek Reservoir could supply well over 7.5 MGD—some have projected a 12 MGD yield.<sup>45</sup> Third, with aggressive water conservation and efficiency incentives and mandates, the County should be able to harness significantly more water resources.

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<sup>41</sup> Id.

<sup>42</sup> 40 C.F.R. § 230.30.

<sup>43</sup> 40 C.F.R. § 230.40-45.

<sup>44</sup> Preliminary Alternatives Analysis at 1.

<sup>45</sup> Gainesville Times, "Gainesville council wants to double Cedar Creek reservoir's capacity," by Jeff Gill, dated August 13, 2009.

Water conservation - Drought management, growing populations, and water disputes are causing communities like Hall County to consider building reservoirs as a quick fix to provide large amounts of water storage. As detailed in this comment letter, reservoirs have significant negative environmental impacts on water quality and stream health. At the same time, however, reservoirs increase evaporative loss and can be very expensive in comparison to water efficiency/conservation measures. According to EPD, water efficiency measures cost a mere \$.50 to \$2.50 per 1,000 gallons of water saved while reservoirs cost \$4,000.00 per 1,000 gallons.<sup>46</sup>

The County asserts that even with very aggressive water conservation programs, the County will face a water supply need of 60 MGD in 2060 and a shortfall of 6.5 MGD. Aside from acknowledging the requirement to abide by the water conservation measures outlined in the Metro District water supply and water conservation plans, the County fails to identify a single additional conservation measure it may implement; a poor showing of stewardship of the water resource. Likewise, with respect to the minimization of harm analysis, the applicant failed to consider the impacts that the adoption of the higher conservation measures would have on the project's purpose.

Prior to proceeding with this application, the Corps should require the applicant to revise its alternatives analysis after considering adoption and implementation of additional water conservation measures including better management of water resources, water efficiency measures, full cost pricing, and a watershed approach to planning. These measures, which have been proposed by EPA, encompass tasks such as:

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<sup>46</sup> GA Water Use and Water Conservation Analysis, presented by Alice Miller Keyes, Planning and Policy Advisor, Director's Office, GA EPD, research conducted by CH2M Hill, updated October 2007, slide 22.

- Better management – increase public understanding, build smart for the future, system optimization, involve water users in decisions
- Water efficiency – stop leaks, meter all users, retrofit all buildings, landscape to minimize waste water
- Full cost pricing – price water right
- Watershed approach – return water to the river, wetland restoration

Recycle and Reuse of Wastewater - The applicant admits that “within the fifty-year planning horizon, reuse will contribute to reducing unmet demand.”<sup>47</sup> Prior to proceeding with this application, the County should prepare a report including a calculation of associated current and projected water savings and inform the Corps regarding its reuse water system.<sup>48</sup>

In addition, the applicant wrongly states that the city of Gainesville’s 7.3 MGD discharge into Lake Lanier is factored into the water supply yield calculation for Lake Lanier, and argues that, therefore, no reuse water is available. Yet Judge Magnuson explicitly rejects this assumption in his July 2009 order.<sup>49</sup> The court stated that the Corps cannot take into account return flows, which is water the municipal entities return to the lake and the river in the form of highly treated wastewater. The judge explained that withdrawal permits do not require municipalities to return any water to Lake Lanier or the Chattahoochee River.

Purchase of Water from Existing or Proposed Source – In its application, the County states that it expects to get 7.5 MGD from the Cedar Creek Reservoir. Yet recent reports from the city of Gainesville, which manages the water supply for the County, are that it may increase the water supply yield from the reservoir to 12 MGD.<sup>50</sup> Additionally, the Metro District Water Supply and Water Management Plans show that Cedar Creek Reservoir is expected to yield 9 MGD.<sup>51</sup> The County should review whether the Cedar Creek Reservoir has the capacity to provide additional water supply – potentially all of the supply that would be provided by the proposed Glades Reservoir. This review would be especially timely since, at the time of this application, the County had not yet submitted and EPD had not considered or granted a water withdrawal permit for any amount from Cedar Creek.

Minimization Alternatives – Combine Water Conservation with Applicant’s Proposal  
The applicant marginally considers whether additional water conservation measures would reduce the amount of stored water needed to meet its water supply needs in 2060. Furthermore, the County fails to identify the so-called “aggressive conservation” measures that it projects will supply 0.1 MGD. Instead, the County briefly states that, “[w]ith concerted extra efforts, Hall County may be able to conserve an additional 0.1 MGD.”<sup>52</sup> However, the County does not

<sup>47</sup> Preliminary Alternatives Analysis at p.6.

<sup>48</sup> See Gainesville Times, “Hall hails its reuse water system,” by Melissa Weinman, dated August 28, 2009.

<sup>49</sup> *In re Tri-State Water Rights Litigation*, No. 3:07-md-01 at 80, fn.22.

<sup>50</sup> Gainesville Times, “Gainesville council wants to double Cedar Creek reservoir’s capacity,” by Jeff Gill, dated August 13, 2009.

<sup>51</sup> Metropolitan North Georgia Water Planning District, Water Supply and Water Conservation Management Plan, Planned Water Facilities, Table 8-1.

<sup>52</sup> Preliminary Alternatives Analysis at 19.

identify a single extra conservation measure it considered to support the above statement, nor does it explain why it has not committed to these so-called “extra efforts” to secure as much water supply through conservation as possible.

Additionally, the applicant has not presented the alternative of raising the pool level at Lake Lanier to help supply Hall County and other areas. The County could apply to the Corps to study the feasibility of raising the pool level at the lake, which could provided millions more gallons of water supply than the miniscule amount expected from Glades Reservoir with less environmental damage. This study would be timely given the ongoing update of the Corps’ Water Control Manual described above.

b) Alternatives Analysis

Mud Creek and Hagen Creek – The applicant has not presented the details of any yield analysis for the alternative reservoir sites. For example, is the projected yield for the other sites based on a typical full drawdown of the reservoir, or is the yield based on only the top two feet like the Glades Reservoir alternative?

In the analysis for the Mud Creek alternative, the applicant states that the construction of a dam for the proposed reservoir would create a new barrier for those aquatic species that would typically move between the river and the stream. The applicant downplays this bifurcating effect for the Hagen Creek and Flat Creek alternatives, yet all three alternatives involve the construction of a dam on a stream that normally would flow unimpeded into the Chattahoochee River and Lake Lanier.

With respect to reservoir yield, the applicant does not address why the Mud Creek alternative, which is 55 acres and yields 11.9 MGD and Hagen Creek, which is 474 acres and yields 4.6 MGD; yet the largest of the three alternatives, Flat Creek, at 850 acres, yields only 6.4 MGD.

c) Preferred Alternative – Glades Reservoir

Safe Yield Analysis/Reservoir Operations—In addition to those concerns identified in the “Purpose and Needs” discussion above, UCR has several concerns regarding the alleged safe yield, size, location, and operation of the proposed reservoir.

First, the applicant asserts that the reservoir will safely yield an annual 6.4 MGD of water supply for Hall County. However, after taking the negative impacts of Glades Reservoir on Lake Lanier into account, the applicant’s operations of Glades Reservoir will net a significantly smaller safe yield of 1.3 MGD.<sup>53</sup>

Even more problematic are the proposed operations for the reservoir. According to the JPN:

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<sup>53</sup> See “Glades Farm Dam Issues,” Glades Reservoir File Review at USACE, dated Feb. 2, 2009.

The reservoir would be operated so as to limit the reservoir draw down to no more than two feet from the Conservation Pool elevation of 1,180' msl for no more than 90 percent of any calendar year and no more than 10 feet during any other time, with the exception of declared emergency drought conditions during which period no drawdown limitations would be applicable.<sup>54</sup>

The applicant fails to explain why the proposed operations include a limit on how far down the reservoir will be drawn to meet water supply needs (i.e., only 10 feet unless an emergency is declared). Although the applicant notes that an emergency “means a drought condition declared by the Governor, the GAEPD, or any other appropriate governmental entity,” the applicant does not identify what drought response level would constitute an emergency declaration that would trigger a change in reservoir operations.<sup>55</sup>

Indeed, the reservoir appears to be grossly oversized relative to its purported yield. According to EPD, Glades Reservoir could provide a safe yield of over 12 MGD and still leave 20% dead pool storage.<sup>56</sup> Moreover, the County should be required to provide the supplemental report regarding the need for an additional contingency storage. The Corps should also require that the yield analysis include the most recent drought data from the 2006-09 drought.

Moreover, the applicant’s “Alternatives Analysis” fails to provide any information on the actual operations for the other reservoir sites. In other words, are the alternative reservoirs on Hagen Creek and Mud Creek subject to the same two foot/ten foot drawdown constraints that the applicant has placed on Glades Reservoir? If not, then the alternative sites analysis is insufficient for determining the net safe yield of project alternatives relative to the impacts on the human environment. The Corps should require the applicant to provide a more exhaustive alternative analysis that includes discussion of different operational scenarios for the different sites examined.

Finally, the JPN states that, “if climate changes lead to more extreme drought events, this alternative would not be capable of meeting the project purpose.”<sup>57</sup> We are puzzled by this statement. Certainly, any alleged drought contingency plan would account for the likelihood of prolonged and more intense drought conditions resulting from ongoing climate change. Alternatively, climate change also may lead to larger storm surges and flooding. The applicant should be required to demonstrate not only that operations can address extreme drought conditions, but also that the project will be designed and operated to withstand extreme wet weather events, particularly given that the project would be sited within Lake Lanier’s floodplain.

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<sup>54</sup> JPN at 3.

<sup>55</sup> See EPD Reg. § 391-3-30.04.

<sup>56</sup> See Letter from A. Oke (EPD) to J. Shuler (Hall County), Re: Surface Water Withdrawal Permit Application, June 26, 2007.

<sup>57</sup> JPN at 4.

## Compensatory Mitigation Plan

The 2008 Corps and EPA compensatory mitigation guidance requires that projects adhere to the “mitigation sequence” of “avoid, minimize, and compensate.”<sup>58</sup> Compensatory mitigation measures should not be used to offset avoidable impacts, and compensatory mitigation should not be judged until the least environmentally damaging practicable alternative has first been identified. Even though the application does not comply with the 404(b)(1) guidelines, we have reviewed the compensatory mitigation plan and find that it is wholly inadequate. The applicant’s compensatory mitigation plan fails to show that the proposed jurisdictional losses would be adequately offset with restoration of similar jurisdictional water bodies.

Of the 92,264 linear feet of jurisdictional waterways to be impacted by the construction and impoundment of Glades Reservoir, only 4,981 linear feet of third-order stream will be restored using Priority 2 and 4 methods at the Hagen Creek Mitigation Site. The remainder of the mitigation offered proposes only riparian preservation and restoration. Thus, only 5% of the stream lengths to be impacted will be mitigated for as stream restoration. The 2004 Standard Operating Procedures for Calculating Compensatory Mitigation in Georgia (“SOP”), however, require that “riparian buffer preservation may account for no more than 50% of the credits required to mitigate for a single and complete project” such as the Glades Reservoir.

Mitigation in the form of stream buffer preservation offers very limited environmental benefits. These stream buffers are already protected by both state law and local ordinance; the preservation of these buffers, which is already required by law, therefore does nothing to mitigate for the proposed impacts. The EPA noted that the applicant’s mitigation plan attempted to “maximize the linear footage and not functional improvement” by proposing a narrow stream buffer preservation.<sup>59</sup> While this strategy may claim a large number of linear feet for mitigation, it fails to replace any lost functions that were not avoidable. The applicant’s mitigation plan is grossly inadequate and does not sufficiently offset project impacts.

Additionally, the applicant fails to address new guidance issued by the Corps and EPA regarding compensatory mitigation for losses of aquatic resources. The 2008 Rule on Compensatory Mitigation expresses a preference hierarchy for mitigation: (1) Mitigation bank credits; (2) In-Lieu Fee program credits; (3) Permittee-responsible mitigation under a watershed approach; (4) On-site and/or in-kind permittee-responsible mitigation; and (5) Off-site and/or out-of-kind permittee-responsible mitigation.<sup>60</sup> The applicant’s mitigation plan does not address this preference hierarchy or why the preferred mitigation bank credits or in-lieu fee credits were not considered. The Corps should require the applicant to address these issues.

Flowage easement –In order to permit Glades Reservoir, the Corps would have to grant the County an easement to build the dam in the Corps’ Lake Lanier property. As you know, the Corps either owns most of the lands surrounding Lake Lanier to a maximum flood elevation of 1,085 feet in fee title, or has a perpetual flowage easement on private property, allowing use without compensation for private benefit, in addition to public benefit. The presence of habitable

<sup>58</sup> 73 Fed. Reg. 19594 (April 10, 2008).

<sup>59</sup> Email communication by Rhonda Evans, EPA Region 4, dated July 30, 2009.

<sup>60</sup> 40 C.F.R. § 230.

structures such as an 850-foot dam in a flowage easement will reduce the overall flood storage capacity of the lake.<sup>61</sup> The applicant has not said how much of the overall storage capacity of Lake Lanier will be compromised or lost to the Glades Reservoir project. Moreover, as discussed above, the County will have to obtain a storage allocation contract from the Corps to be able to flow water through Lake Lanier, which is not possible while the District Court has stayed the litigation in the Tri-State Water Wars and prohibited any changes to the current lake operations.

Costs—The cost estimates for each of the alternatives and their corresponding mitigation plans is inadequate. Particularly, the Flat Creek alternative with a direct withdrawal does not show the cost of the accompanying water treatment plant, intake, and pipeline. A comprehensive analysis of all potential costs is needed for a comprehensive comparison.<sup>62</sup>

### 3. Water Quality Certification

States are responsible for enforcing water quality standards on intrastate waters.<sup>63</sup> In addition to these primary enforcement responsibilities, section 401 of the Clean Water Act requires states to provide a water quality certification before a federal permit can be issued for activities that may result in any discharge into intrastate navigable waters.<sup>64</sup> Section 401 further provides that “any certification . . . shall set forth any effluent limitations and other limitations, and monitoring requirements necessary to assure that any applicant . . . will comply with any applicable effluent limitations and other limitations . . . and with any other appropriate requirement of state law set forth in such certification.”<sup>65</sup> The limitations included in the certification become a condition on any federal permit. Moreover, federal law holds that a state “may include minimum stream flow requirements in a certification issued pursuant to § 401 of the Clean Water Act insofar as necessary to enforce a designated use contained in a state water quality standard.”<sup>66</sup>

Federal regulations require that a water quality certification issued by a state agency consist of: (1) the name and address of the applicant; (2) a statement that the certifying agency has either (i) examined the application made by the applicant to the licensing or permitting agency and bases its certification upon an evaluation of the information contained in such application which is relevant to water quality considerations, or (ii) examined other information furnished by the applicant sufficient to permit the certifying agency to make the statement; (3) a statement that there is a reasonable assurance that the activity will be conducted in a manner which will not violate applicable water quality standards; (4) a statement of any conditions which the certifying agency deems necessary or desirable with respect to the discharge of the activity; and (5) such other information as the certifying agency may determine to be appropriate.<sup>67</sup>

<sup>61</sup> Final EIS for Lanier Shore Management Plan published.

<sup>62</sup> Alternatives Analysis at p. 11.

<sup>63</sup> 33 U.S.C. § 1319(a).

<sup>64</sup> 33 U.S.C. § 1341.

<sup>65</sup> 33 U.S.C. § 1341(d).

<sup>66</sup> PUD NO. 1 of Jefferson County and City of Tacoma v. Washington Dept. of Ecology, 511 U.S. 700, 723 (1994).

<sup>67</sup> 40 C.F.R. § 121.2(a)(3-5).

Although federal regulations provide that a state certifying agency may modify the requirements of a water quality certification and promulgate relevant rules, Georgia has not done so. In this case, without specific regulatory requirements setting forth the necessary components for a complete section 401 application, it is questionable whether EPD is actually considering all of the appropriate criteria to analyze the direct, indirect, and cumulative impacts of the proposed activity on water quality standards.<sup>68</sup> Moreover, without a detailed regulatory structure for the 401 water quality certification process, it is nearly impossible for the applicant and the public to meaningfully prepare an application for 401 certification and evaluate such application.

Nevertheless, the County is required to provide EPD with information indicating that the proposed project would be operated in a manner such that state water quality standards would be maintained within the reservoir and within the reservoir release waters—that is, in both the proposed Glades Reservoir and in Lake Lanier. A review of the County's application fails to reveal whether or where the applicant has addressed these water quality concerns. Thus, what information may EPD rely on to give reasonable assurance that the proposed activity will be conducted in a manner which will not violate applicable water quality standards? The following is a list of specific concerns related to water quality impacts from the proposed activity:

a) Georgia's Interim Instream Flow Policy

Applicants have three options for complying with Georgia's Interim Instream Flow Policy. The applicant has chosen the site-specific instream flow study option and proposes to comply with the policy by releasing the lesser of the natural reservoir inflow or the annual 7Q10 from the reservoir.

In the JPN, the applicant cites a 1989 USGS report to support their choice and derivation of the annual 7Q10 for Flat Creek. However, in the August 8, 2006, "Proposed Alternate Minimum Instream Flow for Flat Creek Below Glades Reservoir, Hall County," the applicant relies on daily stream flow data from the nearby USGS Suwannee Creek gaging station, using one year's worth of data from a temporary private gaging station on Flat Creek to determine how Suwannee Creek flows correlate with Flat Creek flows.

Apparently, EPD had some issues with the amount of Suwannee Creek gaging data available. In a 2006 letter, the applicant's consultant outlines additional correlative studies, this time focusing on Big Creek near Alpharetta, correlating Big Creek to Suwannee Creek, and then using Suwannee Creek to represent Flat Creek.<sup>69</sup>

Rather than engaging in these statistical acrobatics that introduce uncertainty with each correlation used, we wonder why a permanent gage was not and has yet to be set up on Flat Creek during the many years that this proposal has been discussed. The applicant has missed an opportunity to collect nearly a decade's worth of daily flow data directly on Flat Creek. Additionally, that data would have been particularly useful in light of the recent, prolonged

<sup>68</sup> See e.g., 33 U.S.C. § 1313(a)-(c) (requiring states to set appropriate water quality standards).

<sup>69</sup> Letter from Harold Reheis of Joe Tanner & Associates to Clay Burdette of EPD, Re: Hydrology and 7Q10 Calculations; Proposed Glades Dam, Hall County, dated Aug. 30, 2006.

drought. The Corps ought to require the applicant to install at least one gage on Flat Creek and collect at least two years' worth of daily flow data prior to any further consideration of the Glades Reservoir Flat Creek alternative.

Lack of data aside, and assuming the applicant's statistics are sound, we have other serious concerns with the applicant's proposed "alternate minimum instream flow." First, we do not find it persuasive that just because the lower reach of Flat Creek and its stream-like character already has been adversely altered by Buford Dam, we should ignore the impacts of further alterations due to another impoundment. The construction of another reservoir will inundate approximately four of the 11 miles remaining (over one third) of Flat Creek's main stem. This is a significant, adverse cumulative impact on Flat Creek in that Flat Creek as a stream simply ceases to exist for an additional 4 miles above Glades Reservoir. This violates both the spirit and the intent of Georgia's Interim Instream Flow Policy, whose goal is to ensure adequate stream flows for aquatic habitat needs. Clearly, if the stream ceases to exist along a significant proportion of its length, it can no longer function in that capacity. Therefore, the applicant must examine the impacts to Flat Creek's flows both above and below the proposed Glades Reservoir.

Furthermore, we note that the annual 7Q10 of 4.6 cfs (or 3 MGD) is considerably lower than the estimated monthly 7Q10s for most of the year (i.e., November-May, with a range of 3.6-8.8 MGD). In other words, the site-specific study actually has revealed significant month-to-month variation, indicating that a monthly 7Q10 rather than an annual 7Q10 would be the more appropriate release. Thus, in this case, the use of the annual 7Q10 violates Georgia's Interim Instream Flow Policy.

Again, the so-called lake-like characteristics of the lower portion of Flat Creek due to the presence of Buford Dam should not be viewed as justification to further degrade Flat Creek. The applicant simply has failed to explain the impacts of Glades Reservoir on Flat Creek above the proposed reservoir and then to demonstrate that maintaining an annual 7Q10 as opposed to a monthly 7Q10 or other instream flow will not further impact Flat Creek above the proposed reservoir.

b) Compliance with Metro North Georgia Water Planning District plans

The applicant has not shown that it has adopted all measures required by the Metro District's Long-Term Water Management Plan, Water Supply and Water Conservation Plan, and the District-Wide Watershed Management Plan. In fact, the latest audit conducted by EPD in 2006 shows that a number of items required by those plans had yet to be adopted and implemented.<sup>70</sup> At that time, EPD certified that the County was making a "good faith" effort to comply with the District Plans. Yet, at the time of this application, the County had not demonstrated that it had continued with the schedule concerning the implementation of the outstanding items. Is the applicant in compliance with all of the Metro District's criteria? Before certifying that the project would not harm water quality, the EPD must update its 2006 audit.

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<sup>70</sup> Hall County Engineering Department, District Audit Checklist, December 14, 2006.

c) Affect on impaired waters in Lake Lanier

The applicant has not addressed whether the proposed reservoir, the planned development surrounding the reservoir, and the releases into Lake Lanier will have an effect on the presently impaired status of the lake. In 2006, EPD listed three segments of Lake Lanier on the state's section 303(d) list for not meeting the chlorophyll *a* water quality standard. These segments included Lanier Bridge, Browns Bridge, and Flowery Branch. As a result of the listing, the EPD must prepare a Total Maximum Daily Load (TMDL) for Lake Lanier. To this end, EPD initiated a major two-year study, including one year of intensive data gathering and one year of advanced water quality modeling, to develop the chlorophyll *a* TMDL for Lake Lanier, and to lay the foundation for future regulatory decisions to be made concerning the Lake Lanier watershed. The EPD and the Corps should require the County to analyze what effect the proposed action and the development around the proposed reservoir may have on water quality in Lake Lanier and the forthcoming TMDL implementation plan and present its findings to EPD and the Corps.

**D. National Environmental Policy Act**

The National Environmental Policy Act ("NEPA") (42 U.S.C. § 4332) requires that a detailed statement be prepared for major Federal actions significantly affecting the quality of the human environment.<sup>71</sup> To determine whether an action may have significant environmental impacts, and therefore, requires an environmental impact statement ("EIS"), federal agencies must first prepare an environmental assessment ("EA") that briefly provides sufficient evidence and analysis for determining whether to prepare an EIS or a finding of no significant impact ("FONSI"), which would require no more analysis.<sup>72</sup> The federal agencies must be objective and take a "hard look" at all environmental impacts in preparing the EA. In addition, prior to making any detailed statement, the responsible Federal official must consult with and obtain the comments of any federal agency -- including the U.S. Fish and Wildlife Service -- which has jurisdiction by law or special expertise with respect to any environmental impact involved.

In evaluating whether the effects on the quality of the human environment are significant, the federal agency must consider, among other things: (1) impacts that may be both beneficial and adverse, (2) unique characteristics of the geographic area such as proximity to wetlands, (3) the degree to which the effects on the quality of the human environment are likely to be highly controversial, and (4) the degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.<sup>73</sup> Moreover, a federal agency must analyze the direct, indirect, and cumulative impacts of a project.<sup>74</sup>

<sup>71</sup> 42 U.S.C. § 4332(C); see also 40 C.F.R. § 1508.18 (defining major federal action as that which has effects that may be major and which are potentially subject to Federal control and responsibility).

<sup>72</sup> 42 U.S.C. § 1508.9(a)(1).

<sup>73</sup> 40 C.F.R. § 1508.27(b).

<sup>74</sup> 40 C.F.R. § 1508.8.

# 1. Direct, Indirect, and Cumulative Impacts

Direct impacts are those impacts that immediately result from a given project. In this case, those impacts would include flooding 4 miles of Flat Creek, the physical construction of the dam, etc. Indirect effects are those effects caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems. Here, those effects would include the induced growth from the new reservoir, increased sediment running off impervious surfaces, increased vehicle traffic, etc.

Cumulative impacts are those impacts on the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. In this case, the Glades Reservoir's impacts on Flat Creek and the overall Chattahoochee River watershed should be considered in combination with all other projects occurring throughout the basin and in the vicinity of the proposed dam.

As discussed above, an EIS is required for major Federal actions significantly affecting the quality of the human environment. "Significantly" requires consideration of both context and intensity. With respect to intensity, we believe the following factors are particularly relevant for the reasons given:

- "The degree to which the effects on the quality of the human environment are likely to be highly controversial"—given the intense ongoing Tri-State Water Wars and recent District Court order, as well as, concerns raised by downstream communities here in Georgia, this application is clearly controversial;
- "The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks"—given the dearth of information with respect to the actual project specifications, a lack of any functional biological assessment, tremendous land use changes and parallel growth from the private developments, and limited discovery of impacts to aquatic resources, the magnitude of impacts on Lake Lanier and the Chattahoochee River may prove to be environmentally damaging;
- "The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration"—particularly relevant here is the potential for setting a precedent of allowing amenity lakes disguised as water supply reservoirs because here, under the guise of a public-private partnership, valuable aquatic resources will be sacrificed for less than a full yield for water supply project; failure to implement all of the Metro District's plans; granting this withdrawal would send a signal to municipalities that cost-effective and least environmentally destructive water conservation measures are not a preferred alternative to adding expensive, destructive, and unnecessary water supply sources;

- “Whether the action is related to other actions with individually insignificant but cumulatively significant impacts”—of particular concern is the cumulative effect of this reservoir and its planned developments along with other past, present, and future reservoirs surrounding Lake Lanier and affecting its water quantity and quality;
- “The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historic resources”—at least one resource may be eligible for the National Register of Historic Places;
- “Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment”—as we have outlined in this letter, the proposed action threatens to violate the federal Clean Water Act, National Environmental Policy Act, Endangered Species Act, Water Supply Act, as well as state laws including the GA Water Quality Act, and GA Safe Drinking Water Act.

Here, the Corps cannot rely on the application in question to provide sufficient evidence and analysis for a finding of no significant impact. As discussed above, a number of environmental concerns have not been addressed in the application. Furthermore, the Corps must make its own objective conclusion about a project’s impacts, as the applicant will clearly be biased towards its preferred alternative. Without examining all relevant data, the Corps will not be able to articulate an explanation for an action, including a rational connection between the facts found and the choice made to satisfy a project’s purpose and need.

In this case, the Corps and EPD must not issue the permit in question without preparing, at a minimum, an EA. We believe that any one of the factors noted above, standing alone, is enough to justify the preparation of an EIS. **Because the proposed action will result in significant environmental impacts, a comprehensive EIS is warranted.**

Furthermore, because the proposed action entails the impoundment of a tributary to Lake Lanier, it has the potential to both directly and cumulatively impact downstream flows within the ACF basin. Accordingly, the Corps will have to adjust its ACF basin operations in order to insure compliance with the Water Supply Act, which mandates that the Corps manage for downstream uses including recreation, navigation, and flood control. These impacts must be accounted for in the Corps’ NEPA analysis.

#### **E. Endangered Species Act**

The Endangered Species Act requires formal consultation for federal actions that “may affect” listed species or critical habitat.<sup>75</sup> There are at least four federally-listed mussels (shiny-rayed pocketbook, Gulf moccasinshell, oval pigtoe, purple bankclimber) found within the Chattahoochee main stem that may be affected by the proposed action. Therefore, the Corps must initiate formal consultation with the U.S. Fish and Wildlife Service. Moreover, because downstream impacts may in fact impact ACF operations extending as far as Apalachicola Bay,

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<sup>75</sup> Endangered Species Act (ESA), 16 U.S.C. § 1531 et seq.

the Corps also must formally consult with the NOAA Fisheries Service as to impacts the proposed project may have on the federally-listed Gulf sturgeon.

#### **F. Public interest determination and public hearing request**

As noted in the Joint Public Notice, any person may request, in writing, within the comment period specified in the notice, that a public hearing be held, and shall state, with particularity, the reasons for requesting such public hearing.<sup>76</sup> We respectfully request that two public hearings be held (Atlanta and Gainesville) to receive comment on the material matters at issue in the permit application, and generally whether the proposed activity is in the public interest.

As discussed above, the proposed activity will have significant impacts on the human and natural environment, including changes in ecosystem functions, recreational uses, drinking water supply sources, and transportation infrastructure and routes, among others. Additionally, the public interest review may include concerns related to conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shore erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership and, in general, the needs and welfare of the people. Moreover, because the proposed activity is large in size and its construction and operation will affect numerous communities, the Corps should offer an alternative method of sharing information about the project in addition to receiving public comment, and facilitate an opportunity for the public to engage decision-makers and each other regarding the project.

For the sake of convenience of the affected communities, we have identified Atlanta and Gainesville as two preferred locations for public hearings. First, as discussed above, the proposed project will likely affect the water quantity and quality flowing from the proposed site to Lake Lanier; therefore, a public hearing would be appropriate in the area of the city of Gainesville. Second, the largest immediate community downstream from Lake Lanier, which also depends on the lake as its primary source of drinking water and is embroiled in the Tri-State Water Wars litigation, is the metropolitan area of Atlanta; therefore, a hearing in the area of the city of Atlanta would be appropriate. For the sake of convenience, the Corps should host two public hearings to receive comment on the probable impacts, including cumulative impacts of the proposed activity, and its overall effect on the public interest.

#### **G. Conclusion**

We are concerned that Glades Reservoir is an amenity lake for two massive, private developments masquerading as a water supply reservoir, and that the County and its consultants are proposing the reservoir primarily, if not solely, for the sake of economic development.

Based on all the reasons given above, we urge the Corps and EPD to deny the County any permits at this time. In addition, we urge the Corps and EPD to require the County to: 1) address

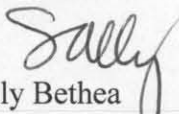
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<sup>76</sup> 33 C.F.R. § 327.1-11.

and analyze the numerous environmental concerns that have been raised above, which have not been fully disclosed by the applicant; and 2) implement more aggressive conservation measures before proceeding with the permitting process. Finally, if the permitting process for this project is allowed to proceed, we urge the Corps to prepare a comprehensive EIS.

Thank you for your consideration of these comments. We look forward to receiving a response from the Corps and EPD. Please contact me or Juliet Cohen, UCR General Counsel, to discuss this letter or any related questions; we may be reached at (404) 352-9828.

Sincerely,

  
Sally Bethea  
Executive Director and Riverkeeper

cc:

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UCR03-comments on BCRReservoir 051809(b)

May 18, 2009

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Re: Application number 200900225; South Fulton Municipal Regional Water & Sewer Authority

Dear Mr. Craig and Mr. Burdette:

I am writing on behalf of Upper Chattahoochee Riverkeeper regarding the above-referenced application from the South Fulton Municipal Regional Water and Sewer Authority ("Authority" or "applicant") to construct and operate a 440-acre Pump-Storage Reservoir on Bear Creek in Fulton County, Georgia.

UCR is a non-profit environmental advocacy organization dedicated to the protection and restoration of the Chattahoochee River, its tributaries, and watershed. UCR represents more than 5,000 members who use and enjoy the river and its resources and depend on the Chattahoochee River and its lakes as a source of drinking water and for recreation.

The Authority, made up of three cities (Fairburn, Palmetto, and Union City), has applied to the United States Department of Army Corps of Engineers ("Corps") for a permit to construct and operate Bear Creek Reservoir, pursuant to Section 404 of the Clean Water Act ("Act") (33 U.S.C. § 1344), and Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. § 403).<sup>1</sup> Because the applicant seeks a federal permit to conduct activity in, on, or adjacent to the waters of the State of Georgia, a water

<sup>1</sup> See also Friends of the Everglades, Inc. v. S. Fla. Water Mgmt. Dist., 2006 WL 3635465 (S.D. Fla. Dec. 11, 2006), No. 07-13829 (appeal docketed Aug. 13, 2007) (pending judgment on whether section 402 of the Clean Water Act requires public water management district to obtain a national pollutant discharge elimination system ("NPDES") permit to transfer water by pump from canals to lake without subjecting it to any intervening use. The outcome of this case may cause the SFMRWSA to obtain a section 402 permit to operate the Bear Creek Reservoir by pump-storage methodology.).

certification permit is required under Section 401 of the Clean Water Act from the Georgia Department of Natural Resources, Environmental Protection Division (“EPD”).

For the following reasons, Upper Chattahoochee Riverkeeper (UCR) is opposed to the construction and operation of the proposed Bear Creek Reservoir, and we respectfully request that the Corps and EPD deny the application for permits.

## **1. Water Supply Need**

### **a. Certification of need for the proposed Bear Creek Reservoir**

To construct and operate the proposed Bear Creek Reservoir, the Authority must obtain a number of permits from the State of Georgia including a surface water withdrawal permit and a permit to operate a public water system. In addition, the state must issue a water quality certification under section 401 of the Act, upon which the Corps’ section 404 permit is dependent. Prior to the issuance of the foregoing permits, the state must issue a certification of need for water supply to the Authority. At this time, however, the Authority has not obtained a complete certification of need from EPD, and therefore, the state cannot issue any of the above permits including the section 401 water quality certification. Moreover, because EPD has not issued a complete certification of need, any attempt by the Corps to issue a section 404 permit is premature and contrary to state law.

The state Service Delivery Act provides that no state permit shall be issued to any local government or authority which is not included in a department verified strategy or for any project which is inconsistent with such strategy.<sup>2</sup> The requirement for a department verified strategy was established to minimize inefficiencies resulting from duplication of services and competition between local governments. To facilitate this coordination, the Georgia General Assembly required that local governments enter into local governmental service delivery strategies, in writing, to provide public services, including drinking water supply, to specified areas within a county, and to show how and when those services will be provided and funded.<sup>3</sup> These written strategies are filed with the Georgia Department of Community Affairs (“DCA”).

In a 2007 legal memorandum prepared by the Georgia Department of Law for EPD, the assistant attorney general answered the question of whether a local Water & Sewer authority submission of plan and specifications of a proposed expansion to existing water and/or sewer delivery or collection systems to EPD for approval constitutes the issuance of a state administered “permit” under the Service Delivery Act.<sup>4</sup> The legal opinion was answered in the affirmative, and stated that plans and specifications not in compliance with an approved service delivery strategy would be subject to the sanctions of the Service Delivery Act.

<sup>2</sup> O.G.C.A. § 36-20-27(a) (service delivery strategies were required beginning July 1, 1999).

<sup>3</sup> Id.

<sup>4</sup> Department of Law, State of Georgia, Memorandum from John Hennelly, Senior Assistant Attorney General, to Bob Scott, Manager, GA EPD, dated July 31, 2007.

As mentioned above, construction and operation of Bear Creek Reservoir requires numerous state permits issued by EPD including for a surface water withdrawal,<sup>5</sup> operation of a public water system,<sup>6</sup> and a section 401 water quality certification. When read together, the state laws regulating water quality, water supply, wastewater management, and governmental delivery of public services have the effect of prohibiting the issuance of a state permit for the construction and operation of a public water system where the proposed service is inconsistent with the service delivery strategy for that area. This is precisely the case here.

According to the DCA and the existing intergovernmental service delivery strategy, Union City and Fairburn are within the City of Atlanta's water supply service delivery area.<sup>7</sup> Therefore, the Authority may not receive a certification of need from EPD for public water supply for their intended service area because this area is already under the service delivery strategy of Atlanta. Consequently, EPD may not issue any of the state permits mentioned above, and the Corps may not issue a section 404 permit. EPD has made similar conclusions.<sup>8</sup>

EPD will not issue any water withdrawal permit for the Bear Creek Reservoir without an approved amended service agreement that sets forth provisions for service between the City of Atlanta and the Authority. This service delivery issue must be resolved along with other technical and permitting issues.<sup>9</sup>

For these reasons, the Authority may not proceed with the application in question, and any attempt by the Corps is premature and contrary to state law.

#### **b. Projection of Water Supply Needs**

The Authority has not demonstrated a need for the proposed reservoir. The applicant's projection of water supply needs states that the "Atlanta Regional Commission has not developed population projections for the municipalities in its area." However, as the applicant acknowledges, the DCA does have such projections available, at least through 2030. For two of the three jurisdictions, the DCA projections differ significantly from those provided in the applicant's "Projection of Water Supply Needs" document.

The following chart shows a comparison of the population projections for the City of Fairburn.

<b>Year</b>	<b>DCA projection</b>	<b>SFMRWA projection</b>
2000	5464	5464
2010	6463	9143
2020	7462	14347

<sup>5</sup> GA Comp. R. & Regs. 391-3-6-.07(3)(a).

<sup>6</sup> GA Comp. R. & Regs. 391-3-5-.04(1).

<sup>7</sup> 2005 Service Delivery Strategy for Fulton County.

<sup>8</sup> Letter from Linda MacGregor, P.E., Chief, Watershed Protection Branch, to David Word, Joe Tanner & Associates, Bear Creek Reservoir, South Fulton Municipal Regional Water and Sewer Authority, dated Sept. 9, 2008.

<sup>9</sup> Id.

2030	8461	17272
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Similarly, here is a comparison for the City of Palmetto:

<b>Year</b>	<b>DCA projection</b>	<b>SFMRWA projection</b>
2000	3400	3400
2010	4057	4815
2020	4714	9033
2030	5371	11261

We note that applicant's population projections for Union City appear to be comparable to those generated by DCA. The applicant's large population projections are based on the following.

By the year 2050, the areas within the 2000 boundaries should be approaching build-out densities. Therefore, the population growth should follow the classic 'S' curve as the slope of the population curve is increasing in the early years and then begins decreasing as density begins approaching build-out.<sup>10</sup>

There are several problems with this reasoning. First, how can the applicant know that the three areas will all reach build-out simultaneously in the year 2050? While 2050 makes sense as a planning horizon, it is doubtful that the year 2050 means anything more than that. In other words, it is hard to believe that all three municipalities will coincidentally reach build-out in that precise year. The applicant needs to explain the reasoning behind their supposition that the year 2050 is the year that all three municipalities will reach build-out.

Second, why would population growth necessarily follow an s-shape trajectory? A build-out scenario can take all kinds of functional forms—linear and non-linear. The DCA uses linear projections. The applicant needs to justify its reasoning for selecting the s-shape projections.

Third, even assuming that an s-shape trajectory is appropriate, the arbitrary means by which the applicant arrives at the inflection points for each curve are problematic. By the applicant's own admission, "adjustment factors" were developed by "trial and error." Different factors were applied at different time steps for each of the three municipalities. There appears to be no scientific basis to the derivation of those factors. The applicant needs to explain in more detail its methods for developing these "adjustment factors."

The applicant also attempts to project populations for the annexed areas.

[T]here is no good methodology for projecting the future growth of these annexed areas. Because of the trend for more open space and conservation subdivisions, it is doubtful that these areas will achieve the same densities as the year 2000 boundaries. It seems reasonable to assume that these new annexed areas, under

<sup>10</sup> Projection of Water Supply Needs, prepared by Infratec Consultants, Inc., dated Feb. 18, 2008, at 3.

moderate growth scenarios, will achieve densities of about one-half of the older urban areas.<sup>11</sup>

There are a couple of problems with this reasoning as well. First, why doesn't the assumption regarding trends for more open space and conservation subdivisions also apply to the more urban areas within the three municipalities? Second, the applicant provides no rationale for its assumption that these trends will result in development at one-half density of the older urban areas.

A review of the EPD audits for the three municipalities reveals that many water conservation measures required by the Metropolitan North Georgia Water Planning District's (Metro District) Water Supply and Water Conservation Management Plan (WSWCM) have yet to be formally adopted. With respect to Union City, we note the following:

- Establish conservation pricing—rate study not yet conducted; multi-tiered pricing not yet implemented;
- Replace older, inefficient plumbing fixtures—no toilet rebate or other replacement program in place;
- Enact legislation to require rain sensor shut-off switches on new irrigation systems—ordinance not yet considered by the Union City Council;
- Require sub-unit meters in new multi-family buildings—ordinance not yet considered by the Union City Council;
- Assess and reduce water system leakage—system audit not to be completed until December 2009, with no timeline given for commencing repairs if needed.
- Conduct residential water audits—web link or other information for performing self-audit not yet provided;
- Distribute low-flow retrofit kits to residential users—merely plans to educate public on how to obtain such kits by December 2009, with no timeline given for actual distribution; and
- Conduct commercial water audits—merely plans to identify large users by September 2009, with no timeline given for performance of Union City audits.

Given that eight out of the ten original (i.e., 2003) water conservation measures required by the Metro District have yet to be implemented (see Metro District, WSWCM plan, 4-1, 2008), it appears that Union City is largely out of compliance with the Metro District WSWCM plan. Prior to seeking additional water supply sources, Union City needs to demonstrate full compliance with the water conservation measures in the WSWCM plan.

With respect to the City of Palmetto, we note the following deficiencies with respect to Metro District water conservation requirements:

- Replace older, inefficient plumbing fixtures—no toilet rebate or other replacement program in place;
- Enact legislation to require rain sensor shut-off switches on new irrigation systems—draft ordinance developed, but no final adoption yet;

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<sup>11</sup> Id. at 8.

- Require sub-unit meters in new multi-family buildings—draft ordinance developed, but no final adoption yet;
- Require pre-rinse spray valve retrofit education program—education materials not yet distributed;
- Assess and reduce water system leakage—system audit not to be completed until December 2010, with no timeline given for commencing repairs if needed;
- Distribute low-flow retrofit kits to residential users—merely plans to educate public on how to obtain such kits by December 2009, with no timeline given for actual distribution; and
- Conduct commercial water audits—merely plans to provide self-audit information by July 2010, with no timeline given for performance of City of Palmetto audits.

Thus, as with Union City, the City of Palmetto remains largely out of compliance with the Metro District's water conservation measures having implemented only three of the ten mandatory measures. Prior to seeking additional water supply sources, the City of Palmetto needs to demonstrate full compliance with the water conservation measures in the WSWCM plan.

We also note that the City of Fairburn is noncompliant with respect to:

- Replace older, inefficient plumbing fixtures—no toilet rebate or other replacement program in place, although the timeline for implementation of a replacement program is December 2009;
- Require pre-rinse spray valve retrofit education program—timeline for implementation is December 2009;
- Assess and reduce water system leakage—system audit not to be completed until December 2009; and
- Conduct commercial water audits—to be outsourced by December 2009.

As with Union City and the City of Palmetto, the City of Fairburn ought to demonstrate full compliance with respect to the water conservation measures in the WSWCM plan prior to seeking additional water supply sources.

Finally, as noted by US Environmental Protection Agency ("EPA") in its December 30, 2003, review of an earlier version of this project:

Currently Fairburn and Union City purchase water from the City of Atlanta, and Palmetto has its own water supply and treatment system. The City of Atlanta has a partnership with Fulton County for water withdrawal from the Chattahoochee River to provide this water. Data supplied by the applicant indicate that Fulton County may have a significant shortage (based on current allotments) by 2030. Thus, the applicant considers the City of Atlanta an unreliable source for future increased water supply and thus dismisses this as an alternative. The applicant

should provide information directly from Atlanta-Fulton County regarding the availability of water to meet future needs before eliminating this alternative.<sup>12</sup>

To our knowledge, the applicant has yet to provide such information. In fact, all indications are that the opposite is true—the City of Atlanta appears to have the capacity to provide water to the City of Palmetto should it opt for service.<sup>13</sup> Moreover, the City’s water treatment facility is only operating at 60% of its capacity, suggesting it also has the capacity to meet future water demand.<sup>14</sup> The applicant must provide this information to the Corps prior to the proceeding with the permitting process.

## 2. Section 404

The goal of the Clean Water Act is to “restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.”<sup>15</sup> To achieve this goal, the Act generally prohibits the discharge of dredged or fill materials into waters of the United States unless authorized by a permit.<sup>16</sup> Section 404 of the Act authorizes the Corps to issue permits for the discharge of dredged or fill material into waters of the United States when certain conditions are met.<sup>17</sup>

Federal guidelines prohibit the permitting of projects in two instances relevant here. First, a permit may not be issued where there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem.<sup>18</sup> Second, a permit may not be issued where it will cause or contribute to significant degradation of the waters of the United States, which includes significantly adverse effects on the life stages of aquatic life and other wildlife dependent on aquatic ecosystems and loss of fish and wildlife habitat.<sup>19</sup>

The EPA’s 404(b)(1) guidelines are the substantive environmental criteria used in evaluating a section 404 permit application to the Corps.<sup>20</sup> The following is an analysis of the Authority’s application in light of the factors set forth in the 404(b)(1) guidelines.

At the outset, the applicant has not provided an adequate rationale for its claim that 2050 water demand will reach 16.44 million gallons daily (“mgd”) for the three municipalities, nor has it provided a rationale for requesting a permit which would authorize a withdrawal roughly double the volume demanded—32 mgd. In fact, a review of the full application shows that this projected demand is very much a moving target.

<sup>12</sup> Letter from Ronald J. Mikulak, Chief, Wetlands Regulatory Chief, US EPA, to Colonel Roger A. Gerber, District Engineer, US Army Corps of Engineers, subj: 200212580 – SFMRWSA Bear Creek Reservoir, dated Dec. 30, 2003.

<sup>13</sup> Letter from Rob Hunter, Commissioner, Department of Watershed Management, City of Atlanta, to Kevin Farrell, GA EPD, dated Apr. 3, 2006, at 3.

<sup>14</sup> *Id.* at 3-4.

<sup>15</sup> 33 U.S.C. § 1251(a).

<sup>16</sup> *Id.* § 1311(a).

<sup>17</sup> *Id.* § 1344.

<sup>18</sup> 40 C.F.R. § 230.10(a).

<sup>19</sup> *Id.* § 230.10(c).

<sup>20</sup> 40 C.F.R. § 230.10.

Apparently, the January 2003 JPN for an earlier version of this project specified a 310-acre reservoir with a projected yield of 11.2 mgd, impacting 25,508 linear feet of Bear Creek and tributaries and 21.7 acres of wetlands.<sup>21</sup> By comparison, the current JPN specifies a 440-acre reservoir with a projected yield of 16.44 mgd, impacting 40,413 linear feet of Bear Creek and tributaries and 30.56 acres of wetlands. The Authority needs to provide the rationale for this revision in the current JPN to give the public a meaningful opportunity to comment on a project which will impact substantially more stream linear feet and wetland acres.

#### **a) Purpose and Need**

Federal guidelines require that the applicant clearly state a project's basic purpose that can be used for an alternatives analysis.<sup>22</sup> A correct statement of the project's "basic purpose" affects whether the presumption of practicable alternatives applies, and thus the extent of the applicant's burden to show whether other alternatives are practicable which would have less adverse impact on the aquatic ecosystem.<sup>23</sup> Importantly, an applicant cannot define a project in order to preclude the existence of any alternative sites, and thus, make what is practicable appear impracticable.<sup>24</sup> The Authority's stated purpose is as follows.

The proposed purpose is to provide an ownership interest in a reliable source of public water supply capable of satisfying unmet demand within the Authority's Service Area during drought conditions for projected growth through the year 2050.<sup>25</sup>

Here, the applicant has construed the project's purpose in an artificially narrow fashion to avoid the presumption of practicable alternatives. The applicant includes unessential components in its project purpose, the result of which is the presentation of a stated purpose outside the guidelines, which call for a "basic purpose." In this case, the true basic purpose is public water supply. Instead, the applicant adds that the project should provide "an ownership interest." The effect of the artificially narrow project purpose on the alternatives analysis is evident in that only alternatives that include reservoirs have been carried forward from the preliminary alternatives analysis to the final alternatives analysis.

Furthermore, the applicant attempts to bolster its artificially narrow project purpose by means of unsupported statements. In its application, the Authority wrote, "Fairburn and Union City are susceptible to gross price increases or the inability to provide an adequate source of water to their residents should Atlanta decide to stop service or have a supply shortfall."<sup>26</sup> Yet, without more explanation, this is a purely speculative statement and should not serve as the rationale for the ill-stated project purpose. Rather, the Authority should be required to provide information directly from the City of Atlanta and/or Fulton County regarding the availability of water to meet future needs of its service delivery area.

<sup>21</sup> See Letter from Ronald J. Mikulak, US EPA, to Colonel Roger A. Gerber, Corps, dated Dec. 30, 2003.

<sup>22</sup> 40 C.F.R. § 230.10.

<sup>23</sup> *Id.*

<sup>24</sup> *Sierra Club v. Flowers*, 526 F.3d 1353, 1366 (11th Cir. 2008).

<sup>25</sup> Alternatives Analysis (AA) at 2.

<sup>26</sup> AA at 1-2.

Moreover, the applicant implies that the City of Atlanta is unwilling to contract with Union City and Fairburn to assure the continued wholesale purchase of water.<sup>27</sup> The record shows the opposite, however, as the City of Atlanta has made numerous attempts to engage the cities in contract negotiations and has made public statements of the same.<sup>28</sup>

The applicant's stated project purpose is in effect a self-fulfilling prophecy. The applicant insists that it needs an ownership interest in its future water supply. Needless to say, water is a public resource and many major metropolitan municipal water and sewer authorities draw water directly from public water ways. Instead, the basic purpose should rely solely on factors such as a needs analysis, population projections, conservation, reuse, service area, water budget, gallons per capita per day, average and peak demand projects, not whether an applicant should be able to have total ownership of a public resource.

In addition, the agencies should carefully analyze the data provided by the applicant to support the stated project purpose. For instance, the agencies are currently considering a number of applications for reservoir construction and among them exists a disparity between the various project's reliance on the gallons per capita per day, which is a critical component of the projection for water supply needs. An explanation of such disparity should be provided to determine if, in fact, such disparity is warranted.

Additionally, the agencies should carefully analyze the data provided related to water conservation measures. Despite the Authority's statement of its capability to implement higher conservation measures to achieve a reduction of 20% by the year 2050, the applicant has failed to commit to such measures. Even under a high growth scenario, with the adoption of high conservation measures, the applicant's projection for water demand would be less than that which is presently stated. Clearly, there is more the applicant can do to reduce its demand for water, which may translate into an alternative that would have less adverse impact on the aquatic ecosystem.

#### **b) Alternatives Analysis**

Under the 404(b)(1) guidelines, the alternatives analysis is the primary screening mechanism to determine the necessity of permitting a discharge of dredge or fill material.<sup>29</sup> The guidelines prohibit all discharges of dredged or fill material into regulated waters, including wetlands, unless a discharge constitutes the least environmentally damaging practicable alternative that will achieve the basic purpose.<sup>30</sup>

The guidelines recognize that certain areas regulated by the Act are deserving of special protection because of their ecological significance and positive contributions to the overall health or vitality of an ecosystem of a region.<sup>31</sup> Among other things, these certain areas include special aquatic sites such as wetlands.<sup>32</sup> In addition, the guidelines recognize that if a project is not water dependent (such as a marina, or port facility), and the project proposes to discharge dredged or

<sup>27</sup> Id.

<sup>28</sup> Letters from City of Atlanta to Kevin Farrell, GA EPD, dated Apr. 3 and Nov. 2, 2006.

<sup>29</sup> 40 C.F.R. § 230.10(a).

<sup>30</sup> Id.

<sup>31</sup> 40 C.F.R. § 230.30.

<sup>32</sup> 40 C.F.R. § 230.40-.45.

fill material into a special aquatic site, the guidelines establish a regulatory presumption that a less environmentally damaging practicable alternative exists, unless the permit applicant can clearly demonstrate otherwise. If this presumption is not clearly rebutted, no permit may be issued for the proposed project.

**c) No action alternative**

The applicant states that “the only reliable guaranteed water supply is 0.6 MGD provided by Palmetto’s two reservoirs.”<sup>33</sup> Yet, the City of Atlanta has a longstanding track record for providing water to Union City and Fairburn, and it has stated numerous times that it is capable and committed to providing enough water to the three cities through 2030 and beyond.<sup>34</sup> Thus, the applicant’s statement is incorrect. Moreover, Union City and Fairburn are among many other cities in Georgia that purchase water wholesale from a municipal water authority, such that the receiving cities do not own a storage reservoir of their own, yet they are assured sufficient water supply during drought conditions.

In addition, the applicant’s argument that because Palmetto’s withdrawal permit expires in 2012, the Authority will be without the 0.60 mgd after 2012 is baseless. The applicant does not provide a single example where EPD refused to reissue a water withdrawal permit. Moreover, the Authority’s statement that a new reservoir and water treatment facility is needed because Palmetto’s existing system will soon require renovation and sediment dredging is absurd as these maintenance measures are required of all such facilities and would be required of a new reservoir as well.

The applicant’s statement that under a no action alternative the unmet water demand will be 18.52 mgd is also incorrect. First, the NGMWPD requires that all counties in its jurisdiction, including Fulton, reduce water demand by 10% by 2030.<sup>35</sup> Third, the Authority’s stated “unaccounted for water” is expected to be reduced to 10%. Thus, the projection for unmet water demand with no action is improperly stated and should be revised.

The applicant’s statement that “[t]he ‘no-action’ alternative would result in the Authority having to continue to use existing water sources to meet growing water needs, thereby not satisfying the project purpose” is a consequence of its narrow project purpose, which conditions a water supply source on ownership. In this case, the “no-action” alternative may be considered as a practicable means of achieving the basic project purpose because the applicant already has the capability of achieving its stated purpose and it is a less damaging practicable alternative to achieve the basic purpose of supplying drinking water.

<sup>33</sup> AA at 3.

<sup>34</sup> Letters from City of Atlanta to Kevin Farrell, GA EPD, dated Apr. 3 and Nov. 2, 2006.

<sup>35</sup> AA at 5; Governor Sonny Perdue, Georgia, Press Release: Governor Perdue Announces Water Conservation Goals Met and Exceeded, dated Dec. 18, 2007.

#### d) Water Conservation

Drought management, growing populations, and water disputes are causing communities like south Fulton County to consider building reservoirs as a quick fix to provide large amounts of water storage. As detailed in this comment letter, reservoirs have significant negative environmental impacts on water quality and stream health. At the same time, however, reservoirs actually increase evaporation and can be very expensive in comparison to water efficiency/conservation measures. According EPD, water efficiency measures cost a mere \$.50 to \$1.40 per 1,000 gallons of water saved while reservoirs cost \$4,000.00 per 1,000 gallons.<sup>36</sup>

In this case, the applicant's analysis of possible water conservation measures and the reduction of the amount of future water demand are grossly inadequate. Aside from listing the plethora of water conservation measures outlined in the Metro District water supply and water conservation plans, the Authority fails to provide detail as to whether any of these measures have been adopted and implemented.<sup>37</sup> See discussion in section 1.b.

Moreover, the Authority states that it will achieve only the minimum reduction in water demand required—10% by 2030. Moreover, the Authority admits that it will forgo any additional water conservation efforts and will maintain only the 10% conservation through 2050.

The 10% reduction in water demand is meager and even the applicant admits that it can achieve a 20% reduction in demand through higher conservation measures.<sup>38</sup> Likewise, with respect to the minimization alternative analysis, the applicant failed to consider the impacts that the adoption of the higher conservation measures would have on the project's purpose.<sup>39</sup>

Prior to proceeding with this application, the Corps should require the applicant to revise its alternatives analysis including the water conservation alternative after considering adoption and implementation of water conservation measures including better management of water resources, water efficiency measures, full cost pricing, and a watershed approach.<sup>40</sup> These measures encompass tasks such as:

- Better management – increase public understanding, build smart for the future, system optimization, involve water users in decisions
- Water efficiency – stop leaks, meter all users, retrofit all buildings, landscape to minimize waste water
- Full cost pricing – price water right
- Watershed approach – return water to the river, wetland restoration, aquifer recharge and storage

<sup>36</sup> GA Water Use and Water Conservation Analysis, presented by Alice Miller Keyes, Planning and Policy Advisor, Director's Office, GA EPD, research conducted by CH2M Hill, updated October 2007, slide 22.

<sup>37</sup> Id.

<sup>38</sup> South Fulton Municipal Regional Water and Sewer Authority, Projection of Water Supply Needs, dated Mar. 2006, Revised Feb. 18, 2008, at 12.

<sup>39</sup> AA at 19.

<sup>40</sup> See American Rivers water efficiency policies, at [www.americanrivers.org/waterefficiencyreport](http://www.americanrivers.org/waterefficiencyreport).

### **e) Recycle and Reuse of Wastewater**

The applicant admits that recycling and reuse of wastewater reduces “the future demand to avoid the need for an additional water supply resource,” yet, it fails to commit to the implementation of this strategy. Prior to proceeding with this application, the Authority should commit and adhere to a schedule for the implementation of reuse water for irrigation, cooling water, and in building, non-potable uses such as (toilet and urinal flushing).<sup>41</sup>

The applicant dismisses the reuse of wastewater based on various factors including the need to construct a wastewater treatment plant. Yet, the applicant has not proposed where and how the wastewater for the 16.44 MGD would be provided. The entire system to support the projected increase in demand should be considered as part of the application review process.

The applicant also claims that the construction of a wastewater treatment facility is impracticable given the “somewhat rural character of the Service area,” in the same breadth that it describes “the magnitude of the projected future unmet water supply demand in the Service area.” While not identical, these concepts are in conflict with one another and should be more fully explained.<sup>42</sup> Curiously, the Authority is projecting a substantial increase in the region’s population, but downplaying the opportunities for water conservation measures. The Corps should assure that every effort to use water resources responsibly should be made prior to construction of any reservoir, and that these measures should not wait until after 2050.

### **f) Purchase of Water from Existing Source.**

The purchase of water from an existing source is the least environmentally damaging practicable alternative. As discussed above, the applicant’s statement that an ownership interest in the water supply is a “vital component” of the project purpose does not qualify as a basic project purpose under the 404(b)(1) guidelines. Nonetheless, the applicant uses negative language to characterize this alternative and downplays its practicability, i.e., “if the Authority merely enters into another long-term contract,” and “the Authority will be captive.”

Whether an alternative is practicable also includes consideration of the costs associated with the activity.<sup>43</sup> Here, the applicant repeatedly refers to the savings it will gain due to securing an ownership interest in a water supply source. The applicant only states that “cost control realized by ownership of its water supply source is also important to the Authority.”<sup>44</sup> The Authority, however, fails to provide a cost comparison to support this claim. The Corps should require the applicant to show, in fact, that the construction and operation of a pump-storage reservoir is more cost efficient and profitable than the other alternatives. This sort of cost analysis should include a comparison of purchasing water wholesale from an existing water supplier to those costs associated with constructing a reservoir, providing adequate mitigation for the impacts, constructing a water treatment facility, laying the transmission lines and pipes,

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<sup>41</sup> AA at 6.

<sup>42</sup> Id.

<sup>43</sup> 40 C.F.R. § 230.10(a)(2).

<sup>44</sup> AA at 13.

maintaining the reservoir, monitoring water quality within the reservoir, and all other relevant expenses of constructing and operating a water and sewer authority.

In response to the Authority's prior application to construct and operate Bear Creek Reservoir, the City of Atlanta prepared a cost comparison based on its wholesale rate and the Authority's 2003 Engineer's Feasibility report.<sup>45</sup> Atlanta determined that the Authority's projected 2008 water bills would be over 20% higher than the city's if the Authority supplied water from the Bear Creek Reservoir rather than purchasing water from the city.<sup>46</sup> Thus, an updated cost analysis is necessary to determine whether this and other alternatives are practicable.

With respect to the alternative of purchasing water wholesale from the City of Atlanta, the applicant makes one general statement that the City has delayed notifying the service area customers regarding safety issues relative to pipe breaks and service interruptions, but provides no data to show whether these issues are frequent or uncommon. Likewise, the applicant repeatedly states that Atlanta refuses to negotiate new service contracts with the cities, but the record shows that Atlanta has made overtures to enter into contract negotiations and it has committed to the cities and the State that it can provide enough water to the three cities through 2030 and beyond.<sup>47</sup>

The City has the water treatment capacity and the distribution system necessary to serve the City of Atlanta, all of South Fulton County and all of the City's wholesale customers. The City also has the ability to serve the City of Palmetto, should Palmetto opt for service.<sup>48</sup>

Thus, the applicant's statement that "no documentation has been submitted to Georgia EPD to document [its] claim" that "it would be able to provide additional water necessary to serve the Authority" is false.<sup>49</sup> Without more, such generalizations hardly support the applicant's rejection of this alternative.

The applicant's further disparagement of the City of Atlanta alternative is quite curious. The applicant quotes from a CRS Report to Congress concerning the Apalachicola-Chattahoochee-Flint (ACF) Drought: Federal Reservoir and Species Management dated November 14, 2007, and notes the United States Supreme Court decision in January 2009 refusing to review the lower court's decision to invalidate the agreement between Georgia, metro Atlanta governments, federal hydropower customers, and the Corps, to cast doubt as to whether the City of Atlanta will have sufficient water supply past 2013. What the applicant fails to address in its analysis is that it is proposing to tap into the same body of water, which it concedes will not likely meet the already projected demands. Thus, the agencies must thoroughly consider whether impeding the flow of water from Bear Creek into the Chattahoochee River and the withdrawal of up to 32 MGD from the main stem of the River is practicable and capable.

<sup>45</sup> Letter from Rob Hunter, City of Atlanta, to Kevin Farrell, GA EPD, dated Apr. 3, 2006, at 6.

<sup>46</sup> *Id.*

<sup>47</sup> Letters from Rob Hunter, City of Atlanta to Kevin Farrell, GA EPD, dated Apr. 3 and Nov. 2, 2006.

<sup>48</sup> Letter from Rob Hunter, City of Atlanta, to Kevin Farrell, GA EPD, dated Apr. 3, 2006, at 3.

<sup>49</sup> *Id.*

**g) River or Stream Intake with One Storage Reservoir (Proposed Alternative), Bear Creek**

The analysis provided for the proposed activity is not sufficient because the applicant must do more than give vague explanations about the potential adverse effects. The analysis in support of the proposed alternative lacks specificity, detail, and data, upon which an informed decision can be made. In its analysis of impacts to the natural and human environments, the applicants relies on generalizations and fails to provide any specifics, using words such as: 'typically,' 'likely,' 'in general,' and 'tend to.' Nevertheless, UCR is opposed to the construction and operation of the proposed alternative, namely, a river intake with one storage reservoir at Bear Creek for the following reasons.

**i. Water Quality Certification**

States are responsible for enforcing water quality standards on intrastate waters.<sup>50</sup> In addition to these primary enforcement responsibilities, section 401 of the Act requires states to provide a water quality certification before a federal permit can be issued for activities that may result in any discharge into intrastate navigable waters.<sup>51</sup> Section 401 further provides that "any certification . . . shall set forth any effluent limitations and other limitations, and monitoring requirements necessary to assure that any applicant . . . will comply with any applicable effluent limitations and other limitations . . . and with any other appropriate requirement of state law set forth in such certification."<sup>52</sup> The limitations included in the certification become a condition on any federal permit. Moreover, federal law holds that a state "may include minimum stream flow requirements in a certification issued pursuant to § 401 of the Clean Water Act insofar as necessary to enforce a designated use contained in a state water quality standard."<sup>53</sup>

Federal regulations require that a water quality certification issued by a state agency consist of: (1) the name and address of the applicant; (2) a statement that the certifying agency has either (i) examined the application made by the applicant to the licensing or permitting agency and bases its certification upon an evaluation of the information contained in such application which is relevant to water quality considerations, or (ii) examined other information furnished by the applicant sufficient to permit the certifying agency to make the statement; (3) a statement that there is a reasonable assurance that the activity will be conducted in a manner which will not violate applicable water quality standards; (4) a statement of any conditions which the certifying agency deems necessary or desirable with respect to the discharge of the activity; and (5) such other information as the certifying agency may determine to be appropriate.<sup>54</sup>

Although federal regulations provide that a state certifying agency may modify the requirements of a water quality certification and promulgate relevant rules, Georgia has not done so. In this case, without specific regulatory requirements setting forth the necessary components for a complete section 401 application, it is questionable whether EPD is actually considering all

<sup>50</sup> 33 U.S.C. § 1319(a).

<sup>51</sup> 33 U.S.C. § 1341.

<sup>52</sup> 33 U.S.C. § 1341(d).

<sup>53</sup> PUD NO. 1 of Jefferson County and City of Tacoma v. Washington Dept. of Ecology, 511 U.S. 700, 723 (1994).

<sup>54</sup> 40 C.F.R. § 121.2(a)(3-5).

of the appropriate criteria to analyze the direct, indirect, and cumulative impacts of the proposed activity to water quality standards.<sup>55</sup> Moreover, without a detailed regulatory structure for the 401 water quality certification process, it is near impossible for the applicant and the public to meaningfully prepare an application for 401 certification and evaluate such application.

Nevertheless, the Authority is required to provide EPD with information indicating that the proposed project would be operated in a manner such that state water quality standards would be maintained within the reservoir, within the reservoir release waters, and within the Chattahoochee River. A review of the Authority's application fails to reveal where the applicant has addressed these water quality concerns. Thus, what information may EPD rely on to give reasonable assurance that the proposed activity will be conducted in a manner which will not violate applicable water quality standards? The following is a list of concerns related to water quality impacts from the proposed activity.

### **1. Impaired waters segments and TMDLs**

In the alternatives analysis, the applicant states that each of the final alternatives was evaluated for water quality using data from the EPA and EPD, and that the data was taken from the 2008 303(d)/305(b) impaired waters list.<sup>56</sup> Specifically, the water quality analysis for the Bear Creek location notes that the Authority conducted water quality monitoring from April 24 through September 23, 2002, and that those samples met or exceeded water quality standards for the state.<sup>57</sup> The Authority should present water quality data that is more recent and not rely on data collected seven years ago.

The water quality analysis further reveals that Bear Creek was placed on Georgia's 303(d) impaired waters list as not meeting its designated use of fishing due to having impacted fish communities (biota) caused by nonpoint source pollution, and that a draft total maximum daily load ("TMDL") was prepared for that parameter.<sup>58</sup> Aside from this brief mention, the Authority wholly ignores this fact, and fails to offer any information about the proposed activity's impacts on the already impaired stream segment and how such impacts relate to the TMDL.<sup>59</sup>

Due to the size of the proposed dam, the close proximity to the Chattahoochee River and the inability to Bear Creek to sustain additional sedimentation, the construction of the Bear Creek reservoir will likely further degrade water quality. Furthermore, the applicant has not provided adequate information as to the precautions that would be taken to mitigate these impacts. This project would not require a stream buffer variance, whose mitigation would come in the form of water quality enhancement. Thus, additional information should be provided to support maintaining water quality in Bear Creek.

<sup>55</sup> See e.g., 33 U.S.C. § 1313(a)-(c) (requiring states to set appropriate water quality standards).

<sup>56</sup> AA at 21.

<sup>57</sup> AA at 35.

<sup>58</sup> Id.

<sup>59</sup> Total Maximum Daily Load Evaluation, Chattahoochee River Basin (Biota Impacted), GA EPD, Jan. 2008.

Furthermore, the 2008 reports show that Indices of Biological Integrity (IBI) scores for fish in Bear Creek are described as poor, and there is a need to improve the biological and physical parameters of Bear Creek. Impounding Bear Creek will indefinitely inhibit the ability of this impaired stream towards repair. As such, by impounding and not repairing this stream segment, long term impacts could result in the Chattahoochee River system. The applicant should be required to explain how it intends to address the current impacts to Bear Creek's main use of fishing.

With respect to the main stem, all four stream segments of the Chattahoochee River below Peachtree Creek are impaired for both fecal coliform or FCG (PCBs) including: 1) Peachtree Creek to Utoy Creek; 2) Utoy Creek to Pea Creek; 3) Pea Creek to Wahoo Creek; and 4) Wahoo Creek to Franklin.<sup>60</sup> Each of these impaired stream reaches has TMDLs and TMDL implementation plans.<sup>61</sup> Also, upstream from Bear Creek's convergence with the Chattahoochee River, the River is considered impaired for temperature. The increased surface water of the Bear Creek Reservoir is likely to increase the temperature of the flow releases into the Chattahoochee River. The Authority fails to mention these impaired stream segments and associated TMDLs in its application; neither does it address how the proposed project will affect water quality and the TMDL implementation plans. EPD should require the Authority to identify and evaluate any impacts the proposed project will have on these impaired segments and what effect the project will have on the implementation of the TMDLs.

As you know, a minimum flow requirement of 750 cfs exists at Peachtree Creek ("PTC flow").<sup>62</sup> The above referenced TMDLs were developed based on this minimum flow requirement—750 cfs at Peachtree Creek.<sup>63</sup> With less water flowing downstream of the reservoir intake, the Authority must evaluate what affect less water will have on the TMDLs and TMDL implementation plans.

## **2. Schedule and conditions for water withdrawals**

The Authority makes conflicting statements about when and how the reservoir will be filled, and whether a schedule for water withdrawal from the Chattahoochee River will be prepared and implemented to protect instream flows and water quality. Here is a sampling of the relevant statements from various parts of the Authority's application.

- The use of the Chattahoochee River to supplement the yield of the Bear Creek Reservoir will be coordinated to capitalize on the scheduled releases from Buford Dam so as to maximize the intermixing opportunities of the water.<sup>64</sup>

<sup>60</sup> EPD, List of Stream Reaches with TMDLs and TMDL Implementation Plans (Peachtree Creek to Utoy Creek is also impaired for temperature).

<sup>61</sup> Id.

<sup>62</sup> See Letter from Mike McGhee, EPA, Director, Water Management Division to Lindsay Thomas, ACF/ACT River Basins Commissioner, December 28, 1999 (stating that the "... current permitted allocations are based on the 750 cfs minimum flow.")

<sup>63</sup> See UCR letter to Corps and EPD regarding PTC Flow, dated Apr. 17, 2009; Debbie Siemon, EPD, TMDL Modeling and Development Unit.

<sup>64</sup> AA at 35-36.

- To minimize impacts to the Chattahoochee River, the project will be designed to primarily pump during times of high flows and will cease pumping from the Chattahoochee when flows are less than the minimum instream flow requirement.<sup>65</sup>
- The model assumes that there will be no protected flow requirement for the Chattahoochee River. Recent conversations with EPD indicate that they will allow water supply withdrawals from the Chattahoochee south of Atlanta with no requirements for drought storage and thus no in-stream flow protection requirement. During low flow conditions, a significant portion of the flow will be made up of wastewater discharges from Atlanta, Fulton County, and Cobb County.<sup>66</sup>
- This project represents an unusual case in that the Chattahoochee River will maintain sufficient flows during drought periods to allow moderate withdrawals without violating instream flow criteria.<sup>67</sup>

Separate from the application, the Authority submitted a memo to the Corps intended to clarify the operation of the Bear Creek Reservoir, but this memo does not serve to restrict or condition withdrawals from the Chattahoochee River.<sup>68</sup> The above statements do not sufficiently detail the manner in which water will be withdrawn from the Chattahoochee River to protect water quality and quantity, and fail to define “high flows,” “minimum instream flow requirements,” and other terms. The Corps and EPD should contemplate and prepare a schedule composed of restrictions and conditions protective of water quality and quantity in Bear Creek and the Chattahoochee River during the 404/401 permitting process at the same time that EPD considers a Surface Water Withdrawal permit needed for the proposed project.

Additionally, the applicant’s reliance on releases from Buford Dam to maximize the intermixing opportunities of the water is sketchy. Experience has shown that the Corps, Atlanta Regional Commission, Georgia Power Company, and others have not always accurately met the PTC flow requirement. The problems associated with meeting the PTC flow requirement will be complicated by the proposed withdrawal downstream, especially because there is little real-time monitoring of water quality and quantity in this segment of the river.<sup>69</sup> Without data from a continuous flow monitoring station, upstream flows cannot be calculated, and there is no accurate way to determine when to cease pumping from the Chattahoochee River.

Rather, a schedule should be proposed and analyzed which outlines restrictions and conditions on the Authority for withdrawing water from the Chattahoochee River including: (1) prohibiting withdrawals until flows reach levels under which a non-depletable flow could be maintained, and (2) prohibiting withdrawals when dissolved oxygen, temperature, flow quantity, and other water quality standards are not being met.

<sup>65</sup> AA at 36.

<sup>66</sup> SFMRWSA Bear Creek Reservoir Safe Yield Analysis, dated Jan. 2009, at 2.4.

<sup>67</sup> *Id.* at 3.1.

<sup>68</sup> Memo from Andrea Gray and Laura Benz to Gary L. Craig, Project Manager, US Army Corps of Engineers, Response to email dated Mar. 27, 2009, requesting clarification on the operation of the Bear Creek Reservoir, dated Apr. 2, 2009.

<sup>69</sup> See UCR letter to Corps and EPD regarding PTC Flow, dated Apr. 17, 2009.

### 3. Minimum Instream Flow Requirements and Assimilative Capacity

In 2001, the GA Department of Natural Resources Board (“DNR”) adopted an Interim Instream Flow Policy. The Interim Policy offers three options to permit applicants to maintain adequate flow in streams including Monthly 7Q10 Minimum Flow, Site-specific Instream Flow Study, and Mean Annual Flow. Maintenance of the minimum instream flow is critical to preventing adverse effects from the withdrawal of surface water such as flatlining, and assures that downstream uses including aquatic habitat, recreation, wetlands, navigation, riparian vegetation, and water quality, including waste assimilation are protected.

Here, the applicant states that the Bear Creek Reservoir has the ability to meet the project purpose, in part, because it can yield 16.44 mgd using a downstream minimum instream flow of monthly 7Q10.<sup>70</sup> It is not clear that Bear Creek Reservoir can meet the Instream Flow Policy by using monthly 7Q10 flow.<sup>71</sup> There is simply insufficient information within the application to determine whether the project as designed complies with the Interim Instream Flow Policy. Merely asserting that a monthly 7Q10 flow was used in the yield and alternatives analyses is not sufficient. The applicant must provide more details regarding the project’s design, day-to-day operations, and any adaptive measures it will take to ensure that the policy is enforced, particularly during peak demand in the dry, summer months.

We are concerned about the methodology of maintaining a permanent pool elevation in the proposed lake by pumping flows from the Chattahoochee River and storing them in the Bear Creek Reservoir. In the applicant’s minimum instream flow requirements discussion, the Authority states that its “model assumed that the minimum downstream flow from the Bear Creek reservoir will be met by pumping Chattahoochee River water to the base of the dam. Thus there would be no required release from Bear Creek reservoir to meet downstream flow requirements.”<sup>72</sup>

The Authority proposes to hold back the entire flow of the Bear Creek watershed, a relatively clean source of water, behind the dam, and pump the impaired water from the main stem to the base of the dam to meet the minimum downstream flow for Bear Creek. The net effect of these two operations is in conflict with the minimum instream flow requirement, which is in place, in large part, to protect water quality. Essentially, this operation will starve the Chattahoochee River of much needed clean water from Bear Creek that is currently providing assimilative capacity for the wastewater discharges from upstream. EPD should evaluate this proposed activity and determine whether, in fact, the Authority’s proposal is protective of water quality in Bear Creek and the Chattahoochee River.

<sup>70</sup> AA at 35.

<sup>71</sup> See e.g., Letter from Ronald J. Mikulak, Chief, Wetlands Regulatory Chief, US EPA, to Colonel Roger A. Gerber, District Engineer, US Army Corps of Engineers, subj: 200212580 – SFMRWSA Bear Creek Reservoir, dated Dec. 30, 2003; Letter from Noel Holcomb, GA DNR Wildlife Resources Division, to Colonel Roger A. Gerber, District Engineer, US Army Corps of Engineers, Application number 200212580 – SFMRWSA, dated Jan. 2, 2004.

<sup>72</sup> Downstream Hydrologic Modeling Report, Impact Analysis of the Proposed Bear Creek Reservoir, prepared by Infratec Consultants, Inc., dated Dec. 2008, at 2.3.

Also, given the large surface area of Bear Creek Reservoir, consumptive loss due to evaporation from the reservoir is of concern. During dry weather and drought conditions, when demand for water is high, evaporation from the Bear Creek Reservoir will be at its highest. At the very time that maintaining instream flows in the Chattahoochee River is most critical, the Bear Creek Reservoir will have its greatest consumptive lost from evaporation. The Corps should refer to the City of Atlanta's comparison of reservoir characteristics between the proposed Bear Creek Reservoir and the city's Bellwood Quarry to see that the reservoir will experience significantly more evaporation than other water supply storage options.<sup>73</sup>

#### **4. Monitoring requirements**

Has the Authority prepared and submitted a water quality monitoring plan that assures water quality standards will be met in Bear Creek as the reservoir is being constructed and downstream of the dam after the project is finished? Such a plan should include a process to measure, to monitor, to record, and to report to EPD water quality data including dissolved oxygen, temperature, conductivity, turbidity, and pH. The monitoring plan must also provide the location and selection process for establishing the water quality monitoring station on Bear Creek below the dam.

The Authority must also provide EPD with information indicating that the project will provide for the protection of existing and designated water uses and that changes (if any) to state water resources resulting from the project are justifiable in terms of providing necessary social or economic development.

#### **5. Additional water quality concerns**

The DNR has identified the Bear Creek watershed as an area of significant groundwater recharge. The Authority has not addressed what impacts the construction and operation of a reservoir would have on this groundwater recharge area. Will significant amounts of water stored in the reservoir be lost to groundwater supplies? Will groundwater supplies be contaminated by reservoir water seepage? These and other questions related to the groundwater recharge zone should be addressed before any conclusions on water quality impacts are made.

Other water quality concerns include those related to the shallow depth of the reservoir. Water quality and sedimentation are likely problems that will increase cost and reduce the effectiveness of the reservoir for its intended purpose. During warm months, weed and algal growth are likely to adversely impact water quality, potentially leading to problems with taste odor, dissolved oxygen, iron, manganese, and dissolved organic matter.

Additionally, has a Source Water Assessment Plan and Task Force been assembled to study the watershed for the surface water intake? Will the reservoir be protected by a buffer, and, if so, will it be undisturbed and how many feet? Will there be a prohibition of recreational activities on the reservoir?

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<sup>73</sup> Letter from Rob Hunter, City of Atlanta, to Kevin Farrell, GA EPD, dated Apr. 3, 2006, at 8, Table 4.

Also, as discussed above, part of the section 401 water quality review should show that EPD has considered the adoption and implementation of water conservation measures including better management of water resources, water efficiency measures, full cost pricing, and a watershed approach in its analysis of alternatives to reservoirs.

#### **h) Additional concerns**

With respect to the cost of the proposed reservoir on Bear Creek, the applicant states the following.

The estimated present worth cost of the proposed reservoir on Bear Creek is approximately \$8,500,000. This is a pre-design estimate for use only to compare the costs of the alternatives. Actual costs are likely to vary from the estimate for a variety of reasons.<sup>74</sup>

This estimate appears to be incomplete. In addition to reservoir construction and road relocation, has the Authority included the costs for land acquisition, installation of pump stations, pipeline costs, intake structures, water treatment plants, and compensatory mitigation? Further, the applicant states that the \$8.5 million estimate is for the purpose of comparing the cost of the alternatives. Yet, the applicant fails to provide estimates of any of the alternatives that do not involve a pump-storage reservoir on a creek. In addition, because so much of the data used for the application was derived from the first Bear Creek Reservoir application, which was prepared and submitted in approximately 2002, the applicant should be required to clarify in what year the dollars for the project cost is estimated.

Additionally, this project could have negative impacts on existing fish and wildlife habitat. The protected species field survey was conducted in 2002 and should be revised. Also, a fish population survey should be done in the Bear Creek watershed to understand the magnitude of the potential impacts of the project on fish populations.<sup>75</sup> Stream changes induced by dams and other watershed conditions are often reflected in the fish community. Native and desirable stream species are almost always displaced in stream segments affected by dams. Dams also limit the normal movement of fish, other aquatic organisms, and system organic material. In addition, the applicant should consider what impacts the project would have on recreational uses of existing resources.

#### **i) Minimize and avoid impacts**

The Authority proposes to impact 38,859 linear feet of intermittent and perennial channels, including the impact on Bear Creek for the construction of the proposed dam. An additional 0.08 acres (1,111 linear feet) of ephemeral streams will be impounded by the proposed reservoir.

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<sup>74</sup> AA at 41.

<sup>75</sup> Letter from Noel Holcomb, GA DNR Wildlife Resources Division, to US Army Corps of Engineers, regarding application number 200212580, South Fulton Municipal Regional Water & Sewer Authority, dated Jan. 2, 2004.

Nonetheless, the applicant has failed to provide adequate reservoir layout options that would assist in the overall avoidance and minimization of the project. As noted above, EPA's 404(b)(1) guidelines requires that the applicant provide an adequate and detailed alternatives analysis to the site location, taking into consideration cost, logistics, and available technology in light of the overall project purpose. The applicant must also consider alternative layouts to the project at the desired location in an effort to show that adequate avoidance and minimization measures were employed.

Here, the application describes alternative site considerations and alternative methods for maintaining the lake pool elevation, however, there is an inadequate discussion with regards to the physical layout of the reservoir and the efforts of the applicant, through these means to show that avoidance and minimization measures to jurisdictional waters have been employed.

#### **j) Compensatory Mitigation Plan**

At the outset, the 2008 Corps and EPA compensatory mitigation guidance requires that projects adhere to the "mitigation sequence" of "avoid, minimize, and compensate."<sup>76</sup> Thus, compensatory mitigation measures should not be used to offset avoidable impacts, as noted above, and therefore, compensatory mitigation should not be judged until the least environmentally damaging practicable alternative has been identified.

Nonetheless, the applicant's compensatory mitigation plan fails to show that the proposed jurisdictional losses would be adequately offset with restoration of similar jurisdictional water bodies. As stated in the 2004 Standard Operating Procedures for Calculating Compensatory Mitigation in Georgia ("SOP"), "riparian buffer preservation may account for no more than 50% of the credits required to mitigate for a single and complete project," such as the Bear Creek Reservoir.

Here, of the 38,859 linear feet of intermittent and perennial stream to be impacted by the construction and impoundment of Bear Creek Reservoir, 5,609 linear feet of first order stream will be restored using Priority 1 and 2 methods at the White Sulfur Creek and Mulberry Creek Mitigation Sites. The remainder of the mitigation offered at the Chattahoochee River Mitigation Site proposes only riparian preservation and restoration in an amount that far exceeds those streams proposed for Priority 1 and 2 restoration stated above. Therefore only 14% of the stream lengths to be impacted will be mitigated for as stream restoration. Additionally, of the 5,609 linear feet of stream to be restored, the mitigation plan calls for the restoration of a 25 foot buffer. The SOP's clearly require that "the Minimum Buffer Width for which mitigation credits will be earned is 50-feet."

Additionally, the applicant fails to address new guidance issued by the Corps and EPA regarding compensatory mitigation for losses of aquatic resources. The 2008 Rule on Compensatory Mitigation expresses a preference hierarchy for mitigation: (1) Mitigation bank credits; (2) In-Lieu Fee program credits; (3) Permittee-responsible mitigation under a watershed approach; (4) On-site and/or in-kind permittee-responsible mitigation; and (5) Off-site and/or out-

<sup>76</sup> 73 Fed. Reg. 19594 (April 10, 2008).

of-kind permittee-responsible mitigation.<sup>77</sup> The Authority's mitigation plan does not address this preference hierarchy or why the preferred mitigation bank credits or in-lieu fee credits were not considered. The Corps should require the applicant to address this issue.

#### **k) Jurisdictional waters determination**

The jurisdictional determination included with the permit application is dated January 14, 2003, and expired on January 14, 2008. Further, the jurisdictional determination was developed for a previous iteration of the proposed project differing in size and scope from the current proposed project. This expired jurisdictional determination should not be relied upon by the Corps in considering this application.

### **3. National Environmental Policy Act**

The National Environmental Policy Act ("NEPA") (42 U.S.C. § 4332) requires that a detailed statement by the responsible official be prepared for major Federal actions significantly affecting the quality of the human environment.<sup>78</sup> To determine whether an action may have significant environmental impacts, and therefore, requires an environmental impact statement ("EIS"), federal agencies must first prepare an environmental assessment ("EA") that briefly provides sufficient evidence and analysis for determining whether to prepare an EIS or a finding of no significant impact ("FONSI").<sup>79</sup> Once the agency has identified an environmental concern, it must take a "hard look" at the problem in preparing the EA. In addition, prior to making any detailed statement, the responsible Federal official shall consult with and obtain the comments of any federal agency, including the U.S. Fish and Wildlife Service, which has jurisdiction by law or special expertise with respect to any environmental impact involved.

A federal action affects the quality of the human environment if it will or may have an effect on the environment.<sup>80</sup> In evaluating whether the effects on the quality of the human environment are significant, the federal agency should consider, among other things: (1) impacts that may be both beneficial and adverse, (2) unique characteristics of the geographic area such as proximity to wetlands, (3) the degree to which the effects on the quality of the human environment are likely to be highly controversial, and (4) the degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.<sup>81</sup> Moreover, a federal agency must analyze the direct, indirect, and cumulative impacts.<sup>82</sup>

#### **a) Direct, Indirect, and Cumulative Impacts**

According to NEPA regulations, indirect effects are those effects caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the

<sup>77</sup> 40 C.F.R. § 230.

<sup>78</sup> 42 U.S.C. § 4332(C); see also 40 C.F.R. § 1508.18 (defining major federal action as that which has effects that may be major and which are potentially subject to Federal control and responsibility).

<sup>79</sup> 42 U.S.C. § 1508.9(a)(1).

<sup>80</sup> 40 C.F.R. § 1508.3.

<sup>81</sup> 40 C.F.R. § 1508.27(b).

<sup>82</sup> 40 C.F.R. § 1508.8.

pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.

Cumulative impacts are those impacts on the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

As discussed above, an EIS is required for major Federal actions significantly affecting the quality of the human environment. “Significantly” requires consideration of both context and intensity. With respect to intensity, we believe the following factors are particularly relevant:

- “The degree to which the proposed action affects public health or safety”—because of the potentially significant adverse effects on downstream water quality due to lower flows and reduced wastewater assimilative capacity, this is of heightened concern;
- “Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas”—according to the application, several culturally significant sites may be inundated within the Bear Creek watershed;
- “The degree to which the effects on the quality of the human environment are likely to be highly controversial”—given the intense ongoing tri-state water wars as well as concerns raised by downstream communities here in Georgia, this application is clearly controversial;
- “The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks”—given the dearth of information with respect to the actual project specifications, uncertainty regarding future allocation out of Lake Lanier for meeting metro Atlanta water supply needs, potential for future droughts, and climate change, the magnitude of impacts on the Chattahoochee River may in fact prove to be larger than initially anticipated;
- “The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration”—particularly relevant here is the failure to implement the Metro District’s mandatory water conservation measures as well as lack of coordination with adjacent water planning districts—granting this withdrawal would send a signal to municipalities that cost-effective and least environmentally destructive water conservation measures are not a preferred alternative to adding expensive, destructive, and unnecessary water supply sources—granting this withdrawal also undermines the supposed intent of the comprehensive state wide water planning effort;
- “Whether the action is related to other actions with individually insignificant but cumulatively significant impacts”—of particular concern is the cumulative effect of this

withdrawal along with other past, present, and future withdrawals on the Chattahoochee River's water quality, recreation, and listed species;

- “The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historic resources”—as already noted, several cultural sites appear to be at issue;
- “The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973”—of particular concern here is the potential adverse effects of reduced flow in the Middle and Lower Chattahoochee on federally listed mussels (shiny-rayed pocketbook, Gulf moccasinshell, oval pigtoe, purple bankclimber)—in each case, recovery depends upon range expansion; and
- “Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment”—as we have outlined in this letter, the proposed action threatens to violate the federal Clean Water Act, National Environmental Policy Act, Endangered Species Act, Water Supply Act, as well as state laws including the Service Delivery Act, GA Water Quality Act, and GA Safe Drinking Water Act

Here, the Corps cannot rely on the application in question to provide sufficient evidence and analysis for a finding of no significant impact. As discussed above, a number of environmental concerns have not been addressed in the application. Without examining all relevant data, the Corps will not be able to articulate an explanation for an action, including a rational connection between the facts found and the choice made. Therefore, the Corps and EPD must not issue the permits in question without preparing, at a minimum, an EA. Moreover, any one of the above factors noted standing alone is enough to trigger the need to prepare an EIS. Therefore, because the proposed action will result in significant environmental impacts, a comprehensive EIS is warranted.

Furthermore, because the proposed action entails a significant withdrawal from the Chattahoochee River as well as the impoundment of a tributary to the Chattahoochee, it has the potential to both directly and cumulatively impact downstream flows within the ACF basin. Accordingly, the Corps will have to adjust its ACF basin operations in order to insure compliance with the Water Supply Act which mandates that the Corps manage for downstream uses including recreation, navigation, and flood control.

#### **4. Endangered Species Act**

The Endangered Species Act requires formal consultation for federal actions that “may affect” listed species or critical habitat.<sup>83</sup> There are at least four federally listed mussels (shiny-rayed pocketbook, Gulf moccasinshell, oval pigtoe, purple bankclimber) found within the Chattahoochee main stem that may be affected by the proposed action. Therefore, the Corps must initiate formal consultation with the U.S. Fish and Wildlife Service. Moreover, because

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<sup>83</sup> Endangered Species Act (ESA), 16 U.S.C. § 1531 et seq.

downstream impacts may in fact impact ACF operations extending as far as Apalachicola Bay, the Corps also must formally consult with the NOAA Fisheries Service as to impacts the proposed project may have on the federally listed gulf sturgeon.

## **5. Public interest determination and public hearing request**

As noted in the Joint Public Notice, any person may request, in writing, within the comment period specified in the notice, that a public hearing be held, and shall state, with particularity, the reasons for requesting such public hearing.<sup>84</sup> We respectfully request that two public hearings be held (Atlanta and LaGrange) to receive comment on the material matters at issue in the permit application, generally, whether the proposed activity is in the public interest.

As discussed above, the proposed activity will have significant impacts on the human and natural environment, including changes in ecosystem functions, recreational uses, drinking water supply sources, and transportation infrastructure and routes, among others. Additionally, the public interest review may include concerns related to conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shore erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership and, in general, the needs and welfare of the people. Moreover, because the proposed activity is large in size and its construction and operation will affect numerous communities, the Corps should offer an additional and alternative method of sharing information about the project, receiving public comment, and facilitate an opportunity for the public to engage decision-makers and each other regarding the project.

For the sake of convenience of the affected communities, we have identified Atlanta and LaGrange as two preferred locations for public hearings. First, as explained above, the City of Atlanta is currently the service delivery area provider for much of the Authority's intended service area. Consequently, a change in the service delivery area for Atlanta presumably will affect the city's water supply projections, investment of capital in water supply infrastructure, projected revenue, and rate structure, among other things. On the other hand, the proposed project will likely affect the water quality and quantity flowing from the proposed site to the City of LaGrange and other downstream communities surrounding West Point Lake. Aside from the communities making up the Authority, which are presumably in favor of the preferred alternative, Atlanta and LaGrange are the communities most likely to feel the impacts from the proposed activity. Therefore, for the sake of convenience, the Corps should host two public hearings to receive comment on the probable impacts, including cumulative impacts of the proposed activity, and its intended effect on the public interest.

## **6. Conclusion**

We are concerned that Bear Creek Reservoir is a subdivision lake masquerading as a water supply reservoir, and that the Authority and its consultants are proposing the reservoir for the sake of economic development. The entire property designated for the reservoir location is owned by one landowner. Also consider the following, which has been shown above.

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<sup>84</sup> 33 C.F.R. § 327.1-11.

- The Authority has failed to demonstrate that the reservoir is needed to meet the future water demands of Union City, Fairburn, and Palmetto.
- The Authority has also failed to demonstrate that the reservoir is the least damaging environmentally practicable alternative.
- The Authority has failed to demonstrate that the reservoir will not cause or contribute to the significant degradation of Bear Creek and the Chattahoochee River.
- The Authority has failed to demonstrate that the reservoir will reduce costs to service area residents.
- The Authority has failed to demonstrate the reservoir is the least cost alternative to providing water supply to the service area residents.

Based on the above, we urge the Corps and EPD to deny the Authority any permits at this time. In addition, we urge the Corps and EPD to require the Authority to: 1) address and analyze the numerous environmental concerns that have been raised above, which have not been fully disclosed by the applicant; and 2) implement more aggressive conservation measures before proceeding with the permitting process. Finally, if the permitting process for this project is allowed to proceed, we urge the Corps to prepare a comprehensive EIS.

Thank you for your consideration of these comments. We look forward to receiving a response from the Corps and EPD. Please contact me or Juliet Cohen, UCR General Counsel, to discuss this letter or any related questions; we may be reached at (404) 352-9828.

Sincerely,



Sally Bethea  
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UCR04-information provided to the GA Water Contingency Task Force

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**November 13, 2009**

**Dear Georgia Water Contingency Task Force Members:**

On behalf of Upper Chattahoochee Riverkeeper (UCR), I would like to thank you for the opportunity to provide information to help guide the Task Force's efforts to address the potential gap in our 2012 water supply due to a recent federal judge's ruling which invalidated Georgia's use of Lake Lanier for water supply.

As you know, we have worked with the Georgia Water Coalition (GWC) to draft an essentials document which outlines what we believe the priorities are for addressing the gap and moving Georgia into a sustainable future (attached). We also have worked with GWC to generate a comprehensive list of conservation and efficiency measures which we believe must be fully exhausted in concert with serious efforts to renegotiate a reallocation agreement authorizing use of Lanier for Georgia water supply **prior** to any efforts to expand or add other water supply sources (attached). Our comments here are supplemental to those submitted by the GWC which we also helped draft and strongly support.

### **Conservation and Efficiency then Reallocation Before Seeking New Supplies**

The Task Force has been presented with information suggesting that by 2012 we will have a water shortfall of 251 MGD in light of the judge's ruling. The GWC has presented information illustrating that we can achieve a savings of roughly 210 MGD through proven, cost-effective conservation and efficiency measures, which significantly closes that gap. We also note that time, money, and the need to secure enough clean water for all users throughout the ACF basin all indicate that reallocation of Lake Lanier to allow for water supply is the cheapest, quickest, and most sustainable means of closing the rest of the "gap."

Accordingly, we again strongly urge the Task Force to focus on conservation, efficiency, and reallocation first and foremost, and disregard expensive, destructive, time-intensive, and unsustainable alternatives including construction of development/amenity lakes, aquifer storage and recovery (ASR), desalinization,

and piping water from the Tennessee River. In light of the severe economic downturn, Georgians simply cannot afford these risky alternatives in this generation or the next.

### **Accurately Characterizing the “Gap”**

For several reasons, the “gap” the Task Force has derived is an erroneous one. First and foremost, in spite of a judicial ruling deciding that water supply is not an authorized purpose for Lake Lanier, the Task Force is assuming that Metro Atlanta can and will continue to grow at an accelerated rate as it grew back in the early 1990s. This assumption is entirely unreasonable. In fact, one “option” that does not appear to be on the table is a moratorium on growth for Metro Atlanta. From a business perspective, this solution would and should precede any other solution. A simple analogy makes this point—a business going bankrupt does not continue to add inventory and personnel and otherwise overextend itself in order to get out of bankruptcy. Rather, a business in trouble makes tough decisions that include scaling back. To our amazement, this solution is getting no attention from the Task Force.

Even if we assume that future rapid growth in the short-term can and will occur, the “gap” is derived by relying on the significantly flawed water demand projections found in the Metro North Georgia Water Planning District’s 2009 Water Supply and Water Conservation Management Plan. These projections overstate future demand due to flawed input and assumptions, as outlined and discussed in these attached documents:

- Letter dated April 16, 2009 from UCR to the Metro District Governing Board regarding the 2009 draft Metro District Water Supply and Water Conservation Management Plan.
- Letter dated January 30, 2009 from UCR to Metro District Governing Board regarding the 2009 draft Metro District Water Supply and Water Conservation Management Plan.
- Report dated August 2006 by Pacific Institute, A Review of Water Conservation Planning for the Atlanta, Georgia Region.

One of the fundamental assumptions underlying the overstated water projections is the “adjusted base year profile” which is essentially the starting point for the projections. Simply stated, the projections are sensitive to that starting point because the higher the starting point, the higher the end point. The Metro District uses the year 2006, which they allege was “unnaturally depressed as a result of the

ongoing drought.” Our criticisms aside as to the irrational nature of using what they themselves admit is an outlying point and their subsequent arbitrary adjustment to inflate its value, we note that nothing could be further from the truth.

- Water use in 2006 was anything but “depressed.” We have attached a review conducted by the U.S. Army Corps of Engineers that shows water use in Metro Atlanta with respect to Lake Lanier and the Chattahoochee River (clearly relevant to the scope of work before the Task Force) was among the highest on record since 1990. In fact, only the year 2000 surpassed 2006 in terms of water use.
- We also note that the U.S. Geological Survey has released information on 2005 water use by sector and by county; Georgia county-specific data is available online at <http://water.usgs.gov/watuse/data/2005/> as well as in Appendix C of the attached USGS Report, *Water Use in Georgia by County for 2005; and Water-Use Trends, 1980-2005*. Summing across the 15-county region, you get a total of 583 MGD for publically supplied water, which is roughly 100 MGD less than the ~690 MGD adjusted baseline water use on which the Metro District based its water demand projections.
- These two pieces of information cast considerable doubt on the validity of the base year chosen as well as the subsequent adjustment.

The other fundamental assumption underlying the overstated water projections is the high rate of population and employment growth. Simply stated, the projections also are sensitive to the slope over time because the higher the slope, the higher the end point.

- The Metro District fails to provide a range of growth scenarios, even in spite of the recent, severe economic downturn which has brought new construction and development to a virtual standstill in the region.
- In fact, a recent Atlanta Regional Commission report (attached) states that Metro Atlanta growth is the **lowest** it’s been in twenty years.
- Again, the fact that growth is actually at a record low level rather than high, belies the fact that the Metro District projections grossly overstate future water demand.

A simpler and more valid approach to estimating water demand in 2012 is simply to look at water use dating back to 2004, the first full year following implementation of the Metro District water plans, and then project forward. For example, using the

Corps' historical annual average water use data (2004-2007) and forecasting forward, you project a 430 MGD need in 2012 (Lanier and Chattahoochee), leaving a shortfall of 200 MGD.

Alternatively, using EPD's water use data and selecting the monthly high water withdrawals for each facility in each year and then summing those, again focusing on the years following adoption of the 2003 Metro District water plans (2004-2008), you project a 428 MGD need in 2012 (Lanier and Chattahoochee), leaving a shortfall of 198 MGD.

By either accounting, the "gap" is overstated by at least 50 MGD.

### **Ensure Adequate Flows Protective of Instream Uses**

As the Task Force considers water supply options for Metro Atlanta, a critical component of all water management decisions must be a commitment to adequate instream flows in the Chattahoochee River to protect designated uses, including drinking water, recreation, and ecological health.

Although water levels for Lake Lanier and West Point Lake have received considerable attention, the 120-mile stretch of river from Buford Dam to the headwaters of West Point Lake in Franklin, including the Chattahoochee River National Recreation Area and several state and local parks, has not received as much attention or analysis to determine flows sufficient to protect important instream values. There is one instantaneous flow requirement of 750 cubic feet per second (cfs) in this river section just upstream of the confluence of Peachtree Creek (PTC) and the Chattahoochee River that has been a part of Georgia's water quality regulations since the 1970s.

The PTC flow requirement was adopted to protect designated uses for downstream waters, and all wastewater discharge (NPDES) permits issued by the Georgia EPD assume that this flow will be met *at all times* for dilution purposes. In addition, the Corps of Engineers' operating guidelines for Buford Dam state that releases from the dam must consider this downstream requirement and release enough water to meet the flow target.

On several occasions in the past two years, the state has asked the Corps to reduce the target flow to 650 cfs in order to hold more water up in Lake Lanier—a difference of 65 million gallons per day at this location. As UCR has noted several times (attached), the state has yet to provide adequate water quality and flow monitoring at the compliance point *or* downstream of PTC to ensure that designated uses are met. Neither has an Environmental Impact Statement (EIS) been prepared

to assess the potentially significant impacts of the flow reduction on the human environment as required by the National Environmental Policy Act (NEPA).

To address these deficiencies, the state must undertake a comprehensive study, working with federal resources agencies, to determine if the 750 cfs flow is sufficiently protective now and will be sufficiently protective in the future given growth projections, to ensure that designated downstream uses will be met at all times. Until such time as an independent, peer-reviewed study is completed and a new regulation is adopted by the state, the 750 cfs flow at PTC must be met **at all times**, even during droughts; in addition, the state must establish sufficient flow and water quality monitoring stations to ensure that target is met, and the data collected must be made easily available to the public.

### **Conclusion**

The federal judicial ruling has provided the Metro Atlanta area with an unprecedented opportunity to demonstrate good water stewardship to our downstream neighbors. UCR strongly urges the Task Force to seize this opportunity by embracing aggressive water conservation and efficiency measures and then pursuing Lake Lanier reallocation for water supply at sustainable levels.



### **Sally Bethea**

Executive Director and Riverkeeper  
Upper Chattahoochee Riverkeeper  
916 Joseph Lowery Blvd.  
3 Puritan Mill  
Atlanta, GA 30318



November 6, 2009

Georgia Water Contingency Planning Task Force  
The Office of the Governor  
State of Georgia  
203 State Capitol  
Atlanta, Georgia 30334

Dear Members of the Georgia Water Contingency Planning Task Force:

The Georgia Water Coalition appreciates the opportunity to participate in the important task of finding a sustainable and cost-effective water supply for metro Atlanta. The Water Coalition is comprised of 168 business, recreational, civic, conservation, and faith-based organizations representing hundreds of thousands of Georgians throughout the state, including numerous individuals and businesses who are reliant on a dependable water supply for Atlanta. We have attached our 2008 report in addition to a list of Water Coalition members. In our 2008 report, you will find a comprehensive set of recommendations that go beyond water conservation and that provide a fuller definition of the Water Coalition's work.

We have compiled for your information and review a list of recommendations for the least-cost alternatives to securing Atlanta's water supply. Each recommendation contains a brief background synopsis for context and includes explicit steps to be taken to realize the goal. Where possible, each recommendation also includes the projected water savings for metro Atlanta in both dollars and gallons of water consumed. As you will see, the prompt and aggressive implementation of water conservation and efficiency measures will more than offset the need for most if not all future water supply reservoirs currently being contemplated for metro Atlanta. This translates into millions of dollars in savings for a state that is already facing a looming budget crisis.

Please contact our members if you would like more information or have any questions. The Georgia Water Coalition stands ready to assist the state in implementing the recommendations that follow and looks forward to moving sustainable water management forward in Georgia.

Sincerely yours,

Georgia Water Coalition

817 West Peachtree Street  
Suite 200  
Atlanta GA 30308  
1.866.88WATER  
[www.georgiawater.org](http://www.georgiawater.org)



## Georgia Water Coalition Partners

1.866.88WATER • [www.georgiawater.org](http://www.georgiawater.org)

Altamaha Riverkeeper  
 American Fisheries Society - Georgia Chapter  
 American Rivers  
 American Whitewater  
 Anthony W. Park & Associates, LLC  
 Apalachicola Riverkeeper  
 Appalachian Education and Rec. Services – Len Foole Hike Inn  
 Athens Grow Green Coalition  
 Athens Land Trust  
 Atlanta Audubon Society  
 Atlanta WAND (Women's Action for New Directions)  
 Atlanta Water Conservation  
 Atlanta Whitewater Club  
 Azalea Park Neighborhood  
 Bear Creek Bass Club  
 Benjamin E. Mays Center, Inc.  
 Berkeley Lake Homeowners Association  
 Bike Athens  
 Blue Heron Nature Preserve  
 Broad River Outpost  
 Broad River Watershed Association  
 Burnt Fork Watershed Alliance  
 Camden County Land Trust  
 CCR Environmental  
 Center for a Sustainable Coast  
 Central Savannah River Land Trust  
 Chattahoochee Hill Country Alliance  
 Chattahoochee Nature Center  
 Chattahoochee River Watch  
 Chattooga Conservancy  
 Cherokee Homeowners  
 Citizens for Clean Air and Water  
 Citizens for Environmental Justice  
 Clean Coast  
 Clear Rivers Chorus  
 Coastal Environmental Organization of Georgia  
 Coosa River Basin Initiative  
 Coosawattee Watershed Alliance  
 Creative Earth  
 DeKalb County Soil & Water Conservation District  
 Earthkeepers & Company  
 East Atlanta Community Association  
 Eco-Scrub Carpet & Floor Care  
 Ens & Outs, Unitarian Universalist Congregation of Atlanta  
 Environment Georgia  
 Environmental Community Action Inc. (ECO-Action)  
 Environmental Defense Fund, Southeast Regional Office  
 Flint Riverkeeper  
 Foundation for Global Community, Atlanta Chapter  
 Friends of Barber Creek  
 Friends of Georgia, Inc.  
 Friends of McIntosh Reserve  
 Friends of the Apalachee  
 Friends of the Chattahoochee  
 Friends of the Savannah River Basin  
 Garden Club of Georgia, Inc.  
 Georgia Bass Chapter Federation  
 Georgia Canoeing Association, Inc.  
 Georgia Coalition for the People's Agenda  
 Georgia Coalition of Black Women  
 Georgia Conservancy  
 Georgia Conservation Voters  
 Georgia Erosion Control Center (GECC)  
 Georgia Forest Watch  
 Georgia Interfaith Power and Light  
 Georgia Green Industry Association  
 Georgia Kayak Fishing  
 Georgia Kids Against Pollution  
 Georgia Lakes Society  
 Georgia Land Trust  
 Georgia Onsite Wastewater Association  
 Georgia Organics  
 Georgia Poultry Justice Alliance  
 Georgia River Fishing  
 Georgia River Network  
 Georgia River Survey  
 Georgia Rural Urban Summit  
 Georgia Wildlife Federation  
 Glynn Environmental Coalition  
 GreenLaw  
 Hiwassee River Watershed Coalition  
 Hotlanta Adventures  
 Hydro Management Systems  
 IMPACT  
 Interface, Inc.  
 Intrenchment Creek Coalition  
 Jackson Lake Homeowners Association  
 Jett Ferry Manor Homeowners Association  
 Junior Bass Busters  
 Keller Williams Realty, Lanier Partners  
 Knottlotta Entertainment  
 Krull and Company  
 LaGrange Boaters, Anglers, Campers Association  
 Lake Allatoona Preservation Authority  
 Lake Blackshear Watershed Association  
 Lake Hartwell Association  
 Lake Homeowners Alliance  
 Lake Lanier Association  
 Lake Oconee Property Owners' Association  
 Lake Oconee Water Watch  
 Lake Yonah Association  
 League of Women Voters of Georgia  
 Little Tennessee Watershed Association  
 Long Island Creek Watershed Preservation Assn  
 Lula Lake Land Trust  
 Lumpkin Coalition  
 MBD Water Solutions  
 Melaver, Inc.  
 Middle Chattahoochee River Stewards  
 Middle Georgia Advisory Group  
 Minds Eye Scenic Arts  
 Mountain Park Watershed Preservation Society, Inc.  
 National Wildlife Federation  
 The Nature Conservancy  
 Neighborhood Planning Unit - W, Atlanta  
 Netlink IP Communications  
 New Echota Rivers Alliance  
 Nickajack Watershed Alliance  
 Norris Lake Community Benefits Corporation  
 North Georgia Trout Online  
 Nuclear Watch South  
 Oceana  
 Oconee River Land Trust  
 Ogeechee Audubon Society  
 Ogeechee - Canoochee Riverkeeper  
 Peavine Watershed Alliance  
 Presbytery of Greater Atlanta  
 Pulaski County Ocmulgee Watershed Stewardship Partnership  
 Rain Harvest Company, Inc.  
 REP America- Georgia Group  
 Richmond Hill Garden Club  
 Ridgeview Neighborhood Civic Association  
 Salilla Riverwatch Alliance, Inc. & Salilla Riverkeeper  
 Santee-Nacoochee Community Association  
 Savannah-Ogeechee Canal Society, Inc.  
 Savannah Riverkeeper  
 Savannah Tree Foundation  
 Save Lake Oconee's Waters (SLOW)  
 Save Our Rivers, Inc.  
 Scenic Georgia, Inc.  
 Sierra Club- Georgia Chapter  
 Small Carpenters at Large  
 Solomon's Minds  
 Soque River Watershed Association  
 South Atlantans for Neighborhood Development  
 Southeastern Natural Sciences Academy  
 Southern Alliance for Clean Energy  
 Southern Environmental Law Center  
 Southface  
 SouthWings Conservation through Aviation  
 Spring Creek Watershed Partnership  
 Sustainable Business Partners  
 Tallulah River Watershed Protection Committee  
 The Wilderness Society  
 Trout Unlimited - Georgia Council  
 Turner Environmental Law Clinic  
 Unicol Outfitters  
 United Nations Association - Atlanta Chapter  
 Upper Chattahoochee Riverkeeper  
 Upper Oconee Watershed Network  
 Upper Tallapoosa Watershed Group  
 US Green Building Council - Atlanta Chapter  
 US Green Building Council - Savannah Chapter  
 Vegetarian Solutions  
 West Atlanta Watershed Alliance  
 West Point Lake Advisory Council  
 West Point Lake Coalition  
 World Wildlife Fund

## GWC Recommendations to the Governor's Water Contingency Planning Task Force for Aggressive Water Conservation & Efficiency

November 6, 2009

### CONTENTS:

- **Introduction.**
- **Proven water efficiency measures could yield up to 214 millions of gallons a day (mgd), a 33% savings.**
- **Reducing the water loss through leaks in water distribution pipes can save from 29 to 59 mgd in Metro Atlanta.**
- **Pricing water right can save anywhere from 54 to 79 mgd in Metro Atlanta.**
- **Metering all water users can save from 6 to 9 mgd in metro Atlanta.**
- **Retrofitting all buildings with water efficient fixtures can save 36 to 55 mgd in metro Atlanta.**
- **Landscaping to minimize water waste can save from 8 to 13 mgd.**
- **Increase public understanding.**
- **Ensure policies are in place to facilitate implementation of water conservation practices.**
- **Additional Sources.**

### INTRODUCTION:

Below we have compiled a list of recommendations for the least-cost alternatives to securing Atlanta's water supply for the Governor's Water Contingency Planning Task Force. Each recommendation contains a brief background synopsis for context and includes explicit steps to be taken to realize the goal. Where possible, each recommendation also includes the projected water savings for metro Atlanta in both dollars and gallons of water consumed.

<u>Proven Water Efficiency Measures</u>	<u>Potential Water Savings</u> <u>(mgd)</u>
Reduced leakage	59
Water Pricing	79
Metering	9
Retrofit with efficient fixtures	54
Landscaping	13
Other (e.g. energy efficiency, green infrastructure)	?
<b>Total</b>	<b>214</b>

As you will see, the prompt and aggressive implementation of water conservation and efficiency measures will more than offset the need for most if not all future water supply reservoirs currently being contemplated for metro Atlanta. This translates into millions of dollars in savings for a state that is already facing a looming budget crisis.

**PROVEN WATER EFFICIENCY MEASURES COULD YIELD UP TO 214 MILLIONS OF GALLONS A DAY (MGD), A 33% SAVINGS.**

**Background:**

- As outlined in this document, the total water saved through water conservation and efficiency could make up for all the permitted water withdrawals from Lake Lanier which currently provides 178 million gallons per day (mgd) to metro Atlanta.<sup>1</sup>
- Metro Atlanta could save up to \$700 million by pursuing water efficiency to secure water supply as compared to building new dams.
- In addition, the Alliance for Water Efficiency (AWE) recently published a position paper with three major economic findings that are striking, including:
  - (1) economic output ranges between \$2.5 and \$2.8 million per million dollars directly invested in water efficiency;
  - (2) gross domestic product (GDP) benefits range between \$1.3 and \$1.5 million per million dollars directly invested in water efficiency; and
  - (3) employment potential ranges between 15 and 22 jobs per million dollars directly invested in water efficiency.
- Metro Atlanta's Metropolitan North Georgia Water Planning District could eliminate the need for all six of its planned reservoirs (totaling 108.4 mgd) nearly two times over through aggressive water efficiency and conservation.
- This water savings could ensure enough clean water for ecological protection instream and for our neighbors downstream.

**Resources:**

- American Rivers: Hidden Reservoir: Why Water Efficiency is the Best Solution for the Southeast. October 2008.
- Alliance for Water Efficiency "Transforming Water: Water Efficiency as Stimulus and Long-Term Investment" Position Paper, December 4, 2008.
- Metropolitan North Georgia Water Planning District's 2003 and 2009 Water Supply and Water Conservation Plans, [www.northgeorgiawater.org](http://www.northgeorgiawater.org).

**REDUCING THE WATER LOSS THROUGH LEAKS IN WATER DISTRIBUTION PIPES CAN SAVE FROM 29 TO 59 MILLION GALLONS PER DAY (MGD) IN METRO ATLANTA.**

**Background:**

- Water loss and leak detection and abatement programs should be adopted by all utilities to reduce leaks to as close to zero percent as possible because 117 million gallons is currently lost daily from the system.
- Fixing leaks saves water and helps a utility's bottom line by eliminating the need to treat and pump wasted water that they are not paid for producing.

**Recommendations:**

- The Georgia Environmental Facilities Authority (GEFA) should continue to prioritize projects that fix leaks and secure cost-effective water efficiency savings in the Clean Water State Revolving Fund (SRF) and Drinking Water SRF programs.
- All utilities should use the American Water Works Association (AWWA)/ International Water Authority (IWA) water balance approach to track water consumption. This is the first step for a utility to understand where its water goes and how to address unaccounted for water, including leaks.

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<sup>1</sup> See the Metropolitan North Georgia Water Planning District's 2003 Water Supply and Water Conservation Plan at [www.northgeorgiawater.org](http://www.northgeorgiawater.org).

- All utilities should undergo a system-wide water audit every five years to assess progress with respect to progress on the AWWA/IWA water balance approach. More complex system audits may involve a more detailed investigation into actual policies and practices of the utility. Several areas should be reviewed including:
  - 1) proper metering of all authorized water uses;
  - 2) development of better estimates of water use by the fire department; for line flushing; for street cleaning; and during water main breaks;
  - 3) appropriate meter testing and main line maintenance, repair and replacement procedures; and
  - 4) leak detection programs. Leak detection programs can range from simply detecting in-home leaks, such as toilet or sprinkler system leaks, to the use of more sophisticated leak detection equipment, such as mechanical or electronic sound intensifying instruments that "hear" water escaping from the water system.

#### **Resources:**

- American Water Works Association's, M36 Manual: Water Audits and Leak Detection.

### **PRICING WATER RIGHT CAN SAVE ANYWHERE FROM 54 TO 79 MGD IN METRO ATLANTA.**

#### **Background:**

- Water is not priced at its true value; in fact, some utilities even incentivize water waste. However, we could actually see up to a 22% decrease in consumption through meaningful conservation pricing.
- Conservation pricing 1) provides water at low prices for basic and essential needs, so all customers can afford it; 2) rewards conserving customers with lower rates for water; 3) encourages efficient use by sending a strong price signal; 4) assigns water supply and development costs proportionately to those customers placing the highest burden on the supply system and the natural supply sources; 5) provides a revenue source that can be used for other water conservation programs; 6) stretches existing water supplies farther to avoid much of the cost, delay, and controversy resulting from large new water development projects; and 7) can do all of the above, while still maintaining a stable flow of revenue to the utility.
- Although conservation pricing is required and exists in some form throughout most of the 15- county Metropolitan North Georgia Water Planning District, the Metro District still needs to ensure conservation pricing actually sends a price signal and applies to all uses. There is a lack of consistency in prices across the Metro District, and we see a large range of costs for the same volume of water. For example, some utilities charge as little as \$4.00 for 3,000 gallons of water for residential customers while other utilities charge as high as \$18.00 for the same volume. For 6,000 gallons, the minimum charge is \$5.00 and the maximum is \$35.00, and for 12,000 gallons the minimum is \$10.00 and the maximum is \$110.00.<sup>2</sup> Given the wide variation of costs for each additional tier and that decreasing pricing still exists in the Metro District, it is questionable as to whether the conservation pricing program in the Metro District is sending a price signal and therefore will result in the projected 19.8 mgd water savings by 2035.<sup>3</sup>

#### **Recommendations:**

- The state should fund technical positions at GEFA that can provide assistance on conservation pricing programs, specifically on rate making and billing programs, to give utilities the protection they need so that their revenue is less vulnerable to decreasing demand.
- The state should fund rate studies and rate making programs (through GEFA's SRF program and other state revenue streams) to implement effective conservation rate structures that require utilities to take the following actions:
  - a. Use forward-looking data when establishing revenue requirements (a "future test year"), taking planned usage changes and all program implementation expenses into account (including ratemaking expenses).

<sup>2</sup> See the Metropolitan North Georgia Water Planning District's 2008 Water Rate Survey at [www.northgeorgiawater.org](http://www.northgeorgiawater.org).

<sup>3</sup> See the Metropolitan North Georgia Water Planning District's 2009 Water Supply and Conservation Management Plan at p. 4-5.

- b. Conduct a demand analysis based on alternative plausible scenarios to more accurately predict usage after the introduction of water conservation programs.
- c. Integrate findings from this demand analysis in a cost-of-service study to establish cost-based rates.
- d. Implement a demand response/revenue-adjustment surcharge in order to make periodic (quarterly or otherwise) adjustments to base rates between major rate adjustments.
- e. Consider the joint effects of both program-induced and price-induced conservation on usage and revenues.
- f. Conduct regular audit and reconciliation procedures to ensure against over-collection of revenues from customers, particularly when adjustment surcharges are used.
- g. Communicate the long-term benefits of conservation to water system customers and clearly explain the role of cost-based rates in achieving efficiency goals.
- h. Avoid postponing necessary rate increases and practice gradualism in ratemaking to reduce "rate shock."
- i. Evaluate revenue requirements on an annual basis to ensure that costs and rates are properly aligned.
- j. Explicitly incorporate a degree of revenue uncertainty into the integrated planning and ratemaking processes, and the overall operation of the utility to better understand and manage its effects.
- k. Fund long-term conservation programs through long-term financing. Financing water conservation programs must be incorporated through current operating expenses, similar to funding for dam construction.
- l. The state should give preference to SRF applicants who have implemented conservation pricing successfully.
- m. The state should outlaw decreasing pricing.

#### **Resources:**

- Agthe, D.E. and R.B. Billings. 1987. Equity, Price Elasticity, and Household Income under Increasing Block Rates for Water. *American Journal of Economics and Sociology*, vol. 46, No. 3.
- Alliance for Water Efficiency "Fundamentals of Water Rate Making 2008", AWE Clearinghouse Web Site, Water Rates and Charges, RATE MAKING 101, available at [www.allianceforwaterefficiency.org/1Column.aspx?id=710](http://www.allianceforwaterefficiency.org/1Column.aspx?id=710).
- Alliance for Water Efficiency (AWE) Clearinghouse Web Site: Water Rates and Charges; Implementing a Conservation Oriented Rate Structure.
- American Water Works Association (AWWA) industry standards for rate structure designs available at [www.awwa.org](http://www.awwa.org).
- Chesnutt, W. T. and J.A. Beecheer. 2004. Revenue Effects of Conservation Programs: The Case of Lost Revenue. A & N Technical Services, Inc.
- Environmental Protection Agency (EPA) Region 4, Environmental Finance Center Memo: "Water Price Signals in Georgia", November 28th, 2007 and <http://www.efc.unc.edu/RatesDashboards/ga.htm>
- Environmental Protection Agency's (EPA) guide "Setting Small Drinking Water System Rates for a Sustainable Future: One of the Simple Tools for Effective Performance (STEP) Guide Series", Office of Water, January 2006.
- Environmental Protection Division's (EPD) guidance document "Conservation-Oriented Rate Structures", developed by the GA EPD to support the "Coastal Georgia Water and Wastewater Permitting Plan for the Managing Salt Water Intrusion" dated August 2007.
- Olmstead, S.M. and R.N. Stavins. 2007. Managing Water Demand: Price v. Non-price Conservation Programs, Pioneer Institute White Paper, No. 39.

#### **METERING ALL WATER USERS CAN SAVE FROM 6 TO 9 MGD IN METRO ATLANTA.**

#### **Background:**

- Metering all water uses is critical to measuring water consumption. Accurate consumption measurement is influenced by the type and size of the meter as well as an appropriate testing and maintenance schedule.

- Individual metering of multiple dwelling unit buildings and businesses (also known as submetering) encourages accountability and allows individual customers to assess and modify their water usage. Submetering reduces risk and costs for the building or business owner by making the individual water consumers accountable for their use. Submetering new properties (through legislation or building code) can yield a 15% water savings.
- Water meters can also provide useful information for the management of irrigated landscapes, which constitute approximately 50% of municipal water use. When both landscape and domestic use are measured through the same meter, it is difficult to determine the consumption attributable to each category. Separate metering of landscape and domestic use provides new opportunities to identify and implement targeted practices to encourage more efficient water use in both categories.
- Submetering is cost-effective. For example, submetering new multi-unit properties (assuming 100 individual units) may have a capital cost of roughly \$675.00 per unit but yield \$3,428.00 per unit in annual savings, for a benefit/cost ratio of 5.1. In fact, once battery replacement and other maintenance costs are factored in over a twenty year period, the benefit/cost ratio may range from 3.1 to 5.1. Retrofitting existing multi-unit properties (again, assuming 100 units) will cost more, depending on the efficiency of the existing plumbing and fixtures, but the benefit/cost ratio is still in the range of 3.1-4.0 and any recurring costs can be covered thru an administration fee.<sup>4</sup>

#### **Recommendations:**

- Require new multi-family or multi-unit properties to submeter either through legislation or building codes.
- Require utilities to bill customers on a monthly basis to provide customers with timely consumption information.
- Provide financial incentives for meter technology that uses remote displays so that customers can calculate their consumption instantaneously.
- Provide financial incentives, such as rebates, to submeter existing residential and commercial buildings.

#### **Resources:**

- American Water Works Association (AWWA) Manual M22, "Sizing Water Service Lines and Meters." Produced by the Customer Metering Practices Committee of the AWWA.
- American Water Works Association (AWWA) "Water Distribution Operator Training Handbook" (2nd Ed.).
- Koplow, D. and Lownie, A. 1999. Submetering, RUBS, and Water Conservation. Prepared for the National Apartment Association (Alexandria, VA) and National Multi Housing Council (Washington, DC).
- Mayer, P. et al. 2004. National Multiple Family Submetering and Allocation Billing Program Study.

### **RETROFITTING ALL BUILDINGS WITH WATER EFFICIENT FIXTURES CAN SAVE 36 TO 55 MGD IN METRO ATLANTA.**

#### **Background:**

- Up to 35% decrease in water use is possible through retrofits alone.<sup>5</sup>
- Metro Atlanta communities consume, on average, 69 gallons per capita per day (gpcd) for indoor water use. A conserving household consumes 45.2 gpcd for indoor water use.<sup>6</sup> Compare Brisbane, Australia which consumes 36 gpcd for indoor water use with the same high quality of life as metro Atlanta.

<sup>4</sup> See Table 6.2 Cost and benefit per unit analysis for owners who chose to submeter at p. 189. P.W. Mayer et al. 2004. National Multiple Family Submetering and Allocation Billing Program Study. Study sponsored by Environmental Protection Agency, National Apartment Association, National Multi Housing Council, City of Austin, City of Phoenix, City of Portland, City of Tucson, Denver Water Department, East Bay Municipal Utility District, San Antonio Water System, San Diego County Water Authority, Seattle Public Utilities, and Southern Nevada Water Authority.

<sup>5</sup> See American Rivers: Hidden Reservoir: Why Water Efficiency is the Best Solution for the Southeast.

- New York City completed the world's largest toilet replacement program during 1994-1997 resulting in 70-90 mgd of savings through the replacement of 1.3 million toilets. The program saved NYC over \$200 million by deferring expansion of supply and wastewater infrastructure. By analogy, Metro Atlanta has more than 800,000 outdated toilets,<sup>7</sup> which if replaced would yield 43-55 mgd of savings.
- Retrofitting building infrastructure through incentives such as rebates/tax holidays and through ordinances such as retrofit on resale/reconnect generates proven, reliable and significant water savings.

#### **Recommendations:**

- The Georgia Environmental Facilities Authority (GEFA) should continue to prioritize projects that support the retrofitting of inefficient plumbing fixtures through the Clean Water State Revolving Fund (SRF) and Drinking Water SRF programs.
- Provide incentives for water- and energy-efficient appliances (e.g., ENERGY STAR and WaterSense) including clothes washers, dishwashers, refrigerators, air conditioners, ceiling fans, dehumidifiers, programmable thermostats, windows, doors, fluorescent light bulbs, bathroom faucets, and high-efficiency toilets. Extend the current ENERGY STAR/WaterSense sales tax holiday for the entire month of October or add a weekend during the spring months. Costs for toilet rebate programs in Georgia per 1,000 gallons saved range from \$0.42 to \$1.74.<sup>8</sup>
- Require retrofit on resale/reconnect. DeKalb County has ordinances in place for both residential and commercial buildings.<sup>9</sup>
- Require utilities to offer a pre-rinse spray valve rebate program for restaurants (currently only an education program is required in the Metro District).<sup>10</sup> Costs for pre-rinse spray valve rebate programs in Georgia per 1,000 gallons saved range from \$0.14 to \$29.07.<sup>11</sup>
- Require utilities to establish both residential and coin-operated clothes washer and dishwasher rebate programs for the purchase of water- and energy-efficient clothes and dish washers.

#### **Resources:**

- Food Services Technology Center: [www.fishnick.com](http://www.fishnick.com).
- SBW Consulting, Inc. May 3, 2004. Report No. 040 "Evaluation, Measurement, and Verification Report for the CUWCC Pre-Rinse Spray Head Distribution Program. Submitted to the California Urban Water Conservation Council by SBW CONSULTING, INC. Bellevue, WA in conjunction with ASW Engineering Management Consultants.
- Environmental Protection Division's (EPD) Conserve Water Georgia Website: [www.conservewatergeorgia.net](http://www.conservewatergeorgia.net)

<sup>6</sup> See the Metropolitan North Georgia Water Planning District's May 2009 Water Supply and Water Conservation Plan at [www.northgeorgiawater.org](http://www.northgeorgiawater.org). See also Vickers, A. 2001. Handbook of water use and conservation: homes, landscapes, businesses, industries, farms. Waterplow Press.

<sup>7</sup> This figure is based on the Metro District's assumption that more than 1.15 million homes were built before 1993, and since then, residents have replaced toilets at a "natural" replacement rate of 2% each year. Doing the calculation, you get more than 818,000 homes remaining to date. See the Metro District's 2007 Data Assessment of Pre-1993 Plumbing Fixtures.

<sup>8</sup> See Skeens, Brian. October 2007. Georgia Water Use and Conservation Profiles TM 3 – Water Conservation. CH2MHill Project No. 336822.WU.WC.

<sup>9</sup> See [www.dekalbwatershed.com](http://www.dekalbwatershed.com) for more information.

<sup>10</sup> In Arizona, Project WET and the Abbott Fund partnered together to offer a water and money saving opportunity through the installation of high efficiency pre-rinse spray valves at Casa Grande commercial kitchens at no cost to the businesses. Businesses can expect to save up to 65 percent on their water bills alone. The Metro District estimated that a restaurant could save 30,492 gallons annually and \$500-\$600 of savings annually due to reduced water and wastewater, gas water heating, and electric water heating costs.

<sup>11</sup> See Skeens, Brian. October 2007. Georgia Water Use and Conservation Profiles TM 3 – Water Conservation. CH2MHill Project No. 336822.WU.WC.

**LANDSCAPING TO MINIMIZE WATER WASTE CAN SAVE FROM 8 TO 13 MGD.****Background:**

- On average, 30% of household drinking water is used to water lawns, tree, and shrubs. Of this water, 50% on average is wasted.<sup>12</sup>
- At least 25% savings is possible through proven outdoor water use programs.<sup>13</sup>
- The peaks in demand generated by outdoor water use drive the need to develop new water sources and expand water infrastructure. By reducing the peak, we extend the life of existing water infrastructure and can eliminate the need for new sources.
- Los Angeles plans to meet all new demand for water, equaling 32.6 billion gallons of water, via a combination of water conservation and water recycling. By 2019, half of all new demand will be filled by a six-fold increase in recycled water supplies, and by 2030, the other half will be met through ramped-up conservation efforts. Under the City's existing water conservation ordinance, it is illegal to:
  - Water using sprinklers on any day other than Monday and Thursday.
  - Water landscaping – including lawns - between the hours of 9 a.m. and 4 p.m.
  - Use water on any hard surfaces such as sidewalks, walkways, driveways or parking areas.
  - Allow runoff onto streets and gutters from excessive watering.
  - Allow leaks from any pipe or fixture to go unrepaired.
  - Wash vehicles without using a hose with a shut-off nozzle.
  - Serve water to customers in restaurants unless requested.

**Recommendations:**

- Institute a permanent, year-round ban on outdoor watering during the daytime (10:00 am – 4:00 pm). This is a common-sense way to manage water use, since most of the water applied to landscapes during these hours is lost to evaporation. Provide incentives that promote decentralized infrastructure such as cisterns and rain barrels to harvest rainfall and ensure outdoor spaces rely primarily on precipitation for irrigation.
- Require rain sensor shut-off devices throughout state (now required solely in the Metro District). Costs for rain sensor shut-off device programs in Georgia per 1,000 gallons saved range from \$0.00 to \$1.70.<sup>14</sup>
- Require that existing inefficient landscape irrigation systems be retrofitted in the Metro District.
- Incentivize drought-tolerant landscaping through regulatory and financial incentives. Texas passed House Bill 643 in 2003, which prohibits the creation or enforcement of certain restrictive covenants that undermine water conservation by promoting water-wasting landscapes. Florida has allowed residents in areas governed by homeowners associations to install drought-tolerant landscaping by statute since 2002. Los Angeles has a residential drought-resistant landscape incentive program which rebates a residential owner \$1.00 per square foot of landscape.
- Establish a rebate program for Evapotranspiration (ET) Irrigation Controller Rebate/Direct Install Programs targeted at large landscapes and high water use customers.
- Incentivize programs that encourage all seven principles of Xeriscape.
  - a. Planning and design for water conservation and beauty from the start
  - b. Create practical turf areas of manageable sizes, shapes and appropriate grasses.
  - c. Select low water requiring plants and group plants of similar water needs together and experiment to determine how much and how often to water the plants.
  - d. Use soil amendments like compost or manure as needed by the site and the type of plants used.
  - e. Use mulches such as woodchips, to reduce evaporation and to keep the soil cool.
  - f. Irrigate efficiently - with properly designed systems (including hose-end equipment) and by applying the right amount of water at the right time.
  - g. Maintain the landscape properly – by mowing, weeding, pruning and fertilizing properly.
  - h. Irrigation schedule design and education.

<sup>12</sup> See American Rivers: Hidden Reservoir: Why Water Efficiency is the Best Solution for the Southeast.

<sup>13</sup> *Ibid.*

<sup>14</sup> See Skeens, Brian. October 2007. Georgia Water Use and Conservation Profiles TM 3 – Water Conservation. CH2MHill Project No. 336822.WU.WC.

**Resources:**

- Vickers, 2001, Handbook of Water Use and Conservation. WaterFlow Press, Amherst, MA.
- Wade, Gary, L., Midcap, T., Coder, K., Landry, G., Tyson, A., Weatherly, N. Jr. May 2007. A guide to developing a water-wise landscape. Cooperative Extension, The University of Georgia's College of Agricultural and Environmental Sciences.  
[www.marex.uga.edu/advisory/Library/CSCPpdfs/Xeriscape.pdf](http://www.marex.uga.edu/advisory/Library/CSCPpdfs/Xeriscape.pdf)

**INCREASE PUBLIC UNDERSTANDING****Background:**

- Consumers who overwater lawns or do not recognize a leaking fixture as water waste usually need outreach and education. When a water use violation is reported, public outreach and education materials should be provided to the consumer. Explaining the importance of water conservation may be all that is necessary to change behavior. However, fines, reductions in service, or cessation of service may be necessary to deter repeat violators. One example of a reduction in service is to install a flow restrictor on the pipeline from the meter to the house or irrigation system.

**Recommendations:**

- Require utilities to provide timely reporting of water consumption that is available to the public on the internet.<sup>15</sup>
- Require utility bills to be issued on a monthly basis, provide water consumption data in gallons, include historical water consumption data (year to year, month to month), and provide comparisons to a benchmark for conserving household consumption. Georgia Power (<http://www.opower.com/>) has developed similar billing for home energy use and is currently working with the Georgia Water Wise Council on a water application.<sup>16</sup>
- Require that all governments pass a model "water waste" ordinance. Enforcement of water waste prohibitions is one of the most direct means a utility can use to change wasteful behavior. The City of Roswell has such an ordinance in place.<sup>17</sup>

**Resources:**

- Gaudin, S. 2006. Effect of price information on residential water demand, Applied Economics, 38, 383-393.

**ENSURE POLICIES ARE IN PLACE TO FACILITATE IMPLEMENTATION OF WATER CONSERVATION PRACTICES.****Background:**

- Although there are many local jurisdictions that are working hard to save water, there are often hurdles to ensuring that the most aggressive water conservation policies can move forward. There must be a comprehensive look at how to ensure that regulatory and financial support is in place so that the significant opportunity for water savings in metro Atlanta can be met.
- One of the primary causes of water loss in an area is the presence of impervious surfaces that prevent water from soaking into the ground and remaining available for maintaining healthy landscapes.

<sup>15</sup> See NC example of weekly reporting: [http://www.ncwater.org/Drought\\_Monitoring/reduction/weeklyreport.php](http://www.ncwater.org/Drought_Monitoring/reduction/weeklyreport.php).

<sup>16</sup> See <http://latimesblogs.latimes.com/greenspace/2009/10/california-embraces-psychology-of-influence-to-reduce-energy-use.html>.

Contact Alex Laskey at OPower for more information (859-319-0604).

<sup>17</sup> See [www.roswellgov.com/index.aspx?NID=658](http://www.roswellgov.com/index.aspx?NID=658).

American Rivers found the groundwater annual infiltration “losses” in Atlanta to be 56.9 billion to 132.8 billion gallons due to impervious surfaces added from 1982-1997.

- From 1992-2001, Metro Atlanta lost as much as 54 acres of tree canopy to hard surfaces per day.<sup>18</sup>
- The current state water withdrawal permitting program only authorizes regulation of withdrawals of 100,000 gallons per day or more. This means that a substantial volume of water is unregulated and therefore more difficult to monitor with respect to the effects of conservation and efficiency measures.

#### **Recommendations:**

- Change the water withdrawal permitting threshold to less than 100,000 gallons per day.
- Implement the state’s Water Conservation Implementation Plan with particular focus on the sixth foundational water goal to “integrate water and energy conservation” and the seventh goal to “secure funding to implement water conservation.”
- Allow House Bill 1281 to sunset to restore local governments’ ability to set locally-based water conservation policies if needed.
- Provide tax incentives and funding mechanisms for increasing and enhancing green infrastructure including the protection and restoration of wetlands, riparian buffers, flood plains, green space and the replacement of impervious surfaces with pervious surfaces.
- Provide technical assistance to utilities to identify the most relevant and cost effective water efficiency measures and programs to implement. This could be done through a state initiative by EPD or GEFA who could then license AWE’s Water Conservation Tracking Tool for example.<sup>19</sup>
- Change state plumbing code or pass legislation to require true High Efficiency Toilets (HET-1.28 gpf) for new construction. Currently, the Metro District classifies 1.6 gpf as efficient, which is weaker than the national EPA WaterSense standard.<sup>20</sup> California and Texas both have examples of legislation that require HET phase-in to be completed by 2014.
- Prohibit the use of multiple showerheads and shower tower systems that are wasteful and designed to evade current regulations and efficiency codes. Multiple showerheads and shower towers can waste up to 21 gallons per minute; the national standard for a single showerhead is 2.5 gallons per minute. Instead, provide tax incentives for the installation of efficient (i.e., WaterSense) shower models.<sup>21</sup>
- Require industrial and commercial facilities to use performance-based contracts for the operation of cooling tower and boiler acquisitions within 24 months. Cooling towers and boilers are two of the largest energy and water using-processes.<sup>22</sup>
- Encourage energy efficiency in addition to water efficiency. In Georgia, half of all surface water goes to generate thermoelectric power, and it takes roughly one gallon of water to generate one kilowatt hour, so saving energy saves water.<sup>23</sup>
- Provide financial incentives for commercial and industrial users. For example, Los Angeles provides rebates for the following:
  - Cooling Tower pH/Conductivity Controller for \$3,000.00.
  - Cooling Tower Conductivity Controller for \$625.00.
  - High Efficiency Commercial Clothes Washer (coin and card operated) for \$430.00.
  - Air-Cooled Ice Machine for \$300.00.
  - Steam Sterilizer Retrofit for \$2,300.00 per device.
  - Connectionless Food Steamer for \$600.00 per compartment
  - Dry Vacuum Pump - (max 2.0 HP) for \$125.00.

<sup>18</sup> See <http://www.ucriverkeeper.org/greenscapes-to-hardscapes.php>.

<sup>19</sup> See Alliance for Water Efficiency. <http://www.allianceforwaterefficiency.org/Tracking-Tool.aspx>.

<sup>20</sup> See [www.epa.gov/WaterSense/specs/het\\_spec.htm](http://www.epa.gov/WaterSense/specs/het_spec.htm).

<sup>21</sup> For more information go to [www.Allianceforwaterefficiency.org](http://www.Allianceforwaterefficiency.org) and [www.epa.gov/WaterSense/pp/showerheads.htm](http://www.epa.gov/WaterSense/pp/showerheads.htm).

<sup>22</sup> See Georgia’s Environmental Protection Division’s (EPD) Water Conservation and Implementation Plan (WCIP). May 2009. <http://www.conservewatergeorgia.net/documents/wcip.html>.

<sup>23</sup> See World Resources Institute. 2009. Southeast Energy Opportunities: Water and Watts, available at [http://pdf.wri.org/southeast\\_water\\_and\\_watts\\_ga.pdf](http://pdf.wri.org/southeast_water_and_watts_ga.pdf).

**Resources:**

- American Rivers, the Natural Resources Defense Council and Smart Growth America. 2002. Paving Our Way to Water Shortages: How Sprawl Aggravates the Effects of Drought.
- East Bay Municipal Utility District. 2008. Watersmart Guidebook: A Water-Use Efficiency Plan-Review Guide for New Businesses. E-mail: rharris@ebmud.com.
- Upper Chattahoochee Riverkeeper. 2007. From Greenscapes to Hardscapes: A Study of Tree Canopy and Impervious Surface Change in the Metro Atlanta Area. A joint project of UCR and the University of Georgia.
- World Resources Institute. 2009. Southeast Energy Opportunities: Water and Watts.

**ADDITIONAL SOURCES:**

- Alliance for Water Efficiency "Transforming Water: Water Efficiency as Stimulus and Long-Term Investment" Position Paper, December 4, 2008.
- American Rivers: Hidden Reservoir: Why Water Efficiency is the Best Solution for the Southeast.
- American Water Works Association (AWWA) WaterWiser [www.waterwiser.org](http://www.waterwiser.org)
- American Water Works Association (AWWA). 2006. Water Conservation Programs – A Planning Manual, 2006, American Water Works Association
- American Water Works Association Research Foundation (AWWARF). 1999. Residential End Uses of Water.
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- Brandes, Oliver M., Maas, T., and Reynolds, E. October 2006. The POLIS Project on Ecological Governance. Thinking Beyond Pipes and Pumps: Top 10 Ways Communities Can Save Water and Money.
- California Urban Water Conservation Council (CUWCC). 2005. BMP Cost & Savings Study, Draft Revision, March 2005, A&N Technical Services, Inc. [www.cuwcc.org](http://www.cuwcc.org).
- EPA, 1998. Water Conservation Plan Guidelines, August, 1998, U.S. Environmental Protection Agency.
- Environmental Protection Division's (EPD) Water Conservation and Implementation Plan (WCIP). May 2009. [www.conservewatergeorgia.net/documents/wcip.html](http://www.conservewatergeorgia.net/documents/wcip.html).
- Gleick, P.H. (2003). Global Freshwater Resources: Soft-Path Solutions for the 21st Century. Science, 302, pp. 524-528.
- Metcalf & Eddy/AEOM, Preliminary Draft: Metropolitan North Georgia Water Planning District: Water Supply and Conservation Management Plan. December 2008, [www.northgeorgiawater.org](http://www.northgeorgiawater.org)
- Skeens, Brian. October 2007. Georgia Water Use and Conservation Profiles TM 3 – Water Conservation. CH2MHill Project No. 336822.WU.WC.
- Vickers, A. 2001. Handbook of water use and conservation: homes, landscapes, businesses, industries, farms. Waterplow Press.

# **Water Contingency Planning Task Force**

## **Task Force Meeting Two**

November 23, 2009

## **Objectives of this meeting**

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**Present and discuss potential contingency plan options and initial estimates**

**Provide context and information to enable you to contribute informed feedback**

**Solicit your feedback**

**Begin the process of assessing and prioritizing options**

**Limited time for debate today – Nov 30<sup>th</sup> meeting fully devoted to discussion and addressing questions**

# Task Force Meeting Two Agenda

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<b>Context for session</b> <ul style="list-style-type: none"> <li>• Review of the problem</li> <li>• Cost of inaction</li> <li>• Process overview</li> </ul>	<b>2:00 – 2:15</b>	<b>Governor Perdue</b>
<b>Ability to meet shortfall</b> <ul style="list-style-type: none"> <li>• Overview of option analysis findings</li> </ul>	<b>2:15 – 2:35</b>	
<b>Description of key options</b>	<b>2:35– 3:25</b>	
<b>Prioritization discussion</b> <ul style="list-style-type: none"> <li>• Lenses to apply</li> <li>• Principles of option selection</li> </ul>	<b>3:25 – 3:40</b>	
<b>Next steps- collecting your input; Q&amp;A</b>	<b>3:40 – 4:00</b>	

## **Recap: Contingency Planning Task Force objectives**

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- 1 Develop a fact-base to educate leaders on Georgia's water situation and the implications of Judge Magnuson's ruling**
- 2 Define a time-driven action plan prioritizing specific options and recommendations for conservation, supply enhancement, and water policy**
  - Addressing supply gap and economic development concerns
  - For use by Georgia elected officials
  - Supported by business and civic community

# Important to understand, re-iterate the Contingency Plan operating assumptions

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## **Assume that re-authorization is not possible**

- Hence, solutions involving Lanier storage or Dam operations are not in Task Force scope

## **All potential solutions are on the table**

- Both demand-side (Conserve) and supply-side (Capture and Control) options must be evaluated; we do not have the luxury of restricting analysis to just one lever
- Political considerations should not prevent evaluation of an option

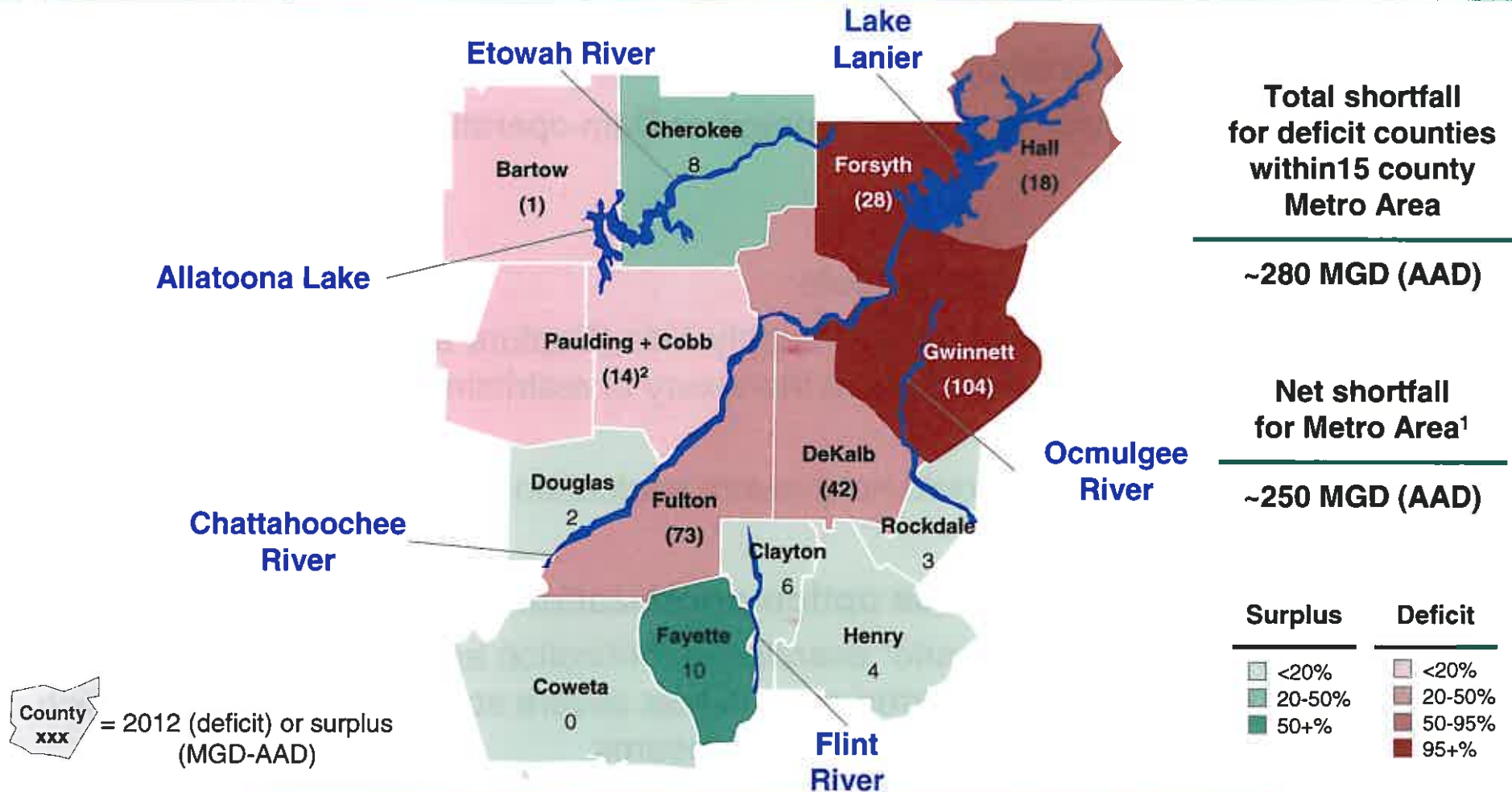
## **Evaluation approach must stress option *prioritization***

- Not just a "worst case scenario" exercise; prioritization approach should reveal which options would be preferred even in less severe scenarios, as well as which options would be purely "contingency" measures

**This does not change fundamental view that Lanier is most environmentally and economically sensible water source**

# What would the ruling mean? Where is shortfall?

The shortfall is not evenly distributed across the Region.



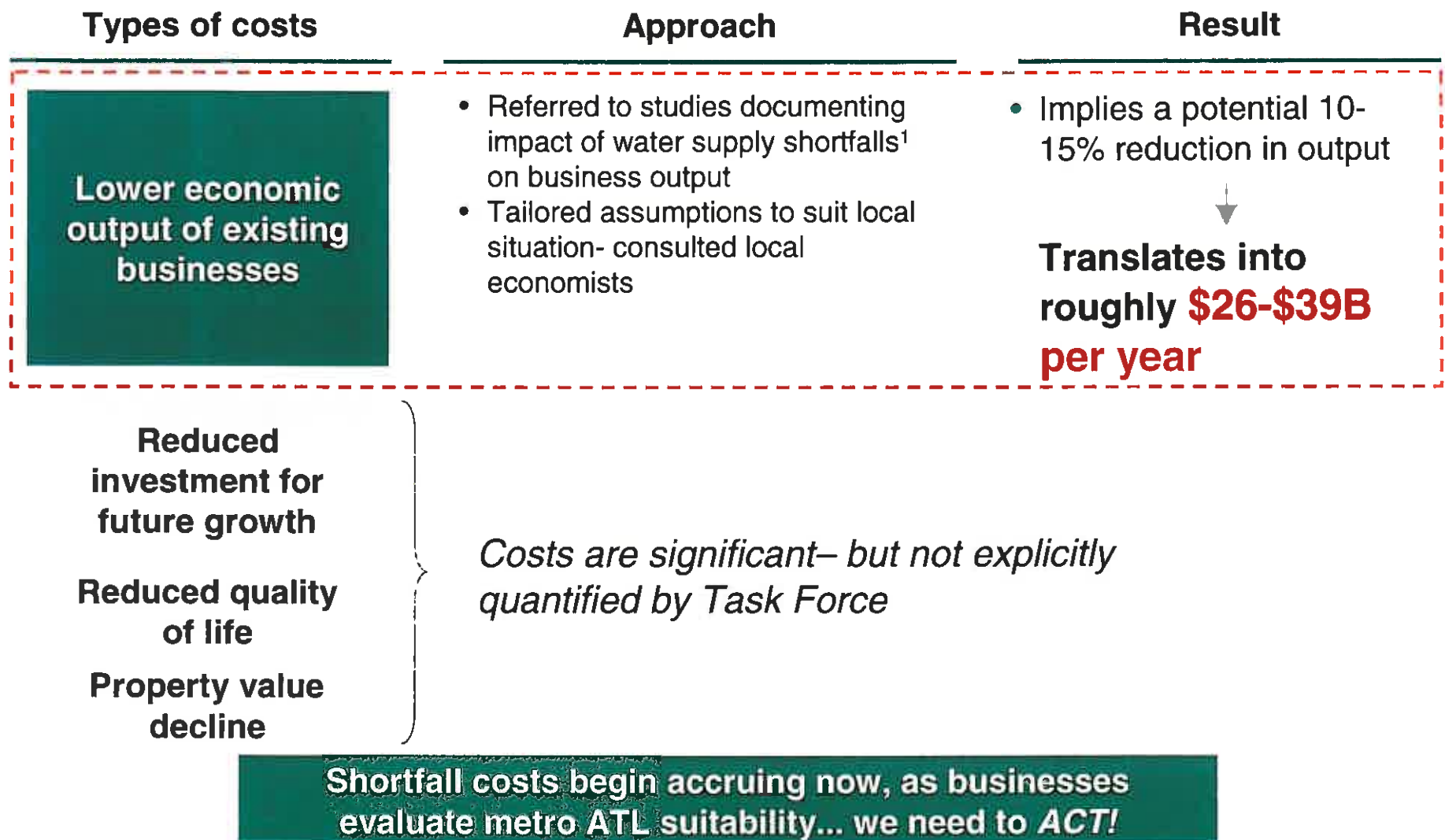
**This is a static analysis only. Exact future impact by county is not known at present.**

1. 250 MGD is net figure- this assumes surplus counties could offset deficit counties- which would require possible infrastructure upgrades and water quality verification.

2. Paulding currently buys all water from Cobb; shortfall shown as a result of combined supply / demand for the two counties

Source: Metro North Georgia Water Planning District "Water Supply and Water Conservation Management Plan" (May2009); EPD data

# What is cost of inaction? 2012 water shortfall could reduce Metro Region economic output by >10% (\$26B+/yr)



1. Measures to Reduce the Economic Impacts of a Drought-Induced Water Shortage in the SF Bay Area, SFPUC (2007) ; Estimating business and residential water supply Interruption losses from catastrophic events, Brozovic (2006) ; Economic Loss Estimation of Water Supply Shortage Based on Questionnaire Survey in Industrial Sectors, Jiang (2005)  
 Note: Assessed impact to Metro Atlanta GDP from potential water shortfall of ~35%. Assumed shortfall borne equally by all sectors (ie, did not re-allocate supply)

# Agenda

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**Overview- where have we been, where are we going**

# Significant progress since kickoff meeting

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## **Input collected- from Task Force members as well as other interested parties**

- eg, Industry associations, conservation & environmental organizations, local government associations, state legislators, utility managers, realtors, and Task Force members
- A special thanks goes out to those who provided input- the staff received everything from single issue submissions to comprehensive recommendations

## **Options analyzed- estimated yield, costs, timing**

- Options defined: specified programs / concepts to enable technical analysis
- Accelerated analysis of cost and yield conducted: results built off of existing Metro Plan data and assumptions wherever possible
- Vetted estimates across multiple advisors- engineering firms, economists, analysts as well as with water professionals

## **Conducted environmental impact workshops with Ga Water Coalition**

- Sought input on degree of environmental impact for different types of measures, to enable prioritization along economic and environmental dimensions

# How options were evaluated

## Defined potential options

- Task Force input
- Case studies
- Existing plans

### Conserve

- Efficiency programs
- Pricing
- Loss reduction
- Reuse

### Capture

- Expanding reservoirs
- ASR/ground water
- New reservoirs

### Control

- Transfers

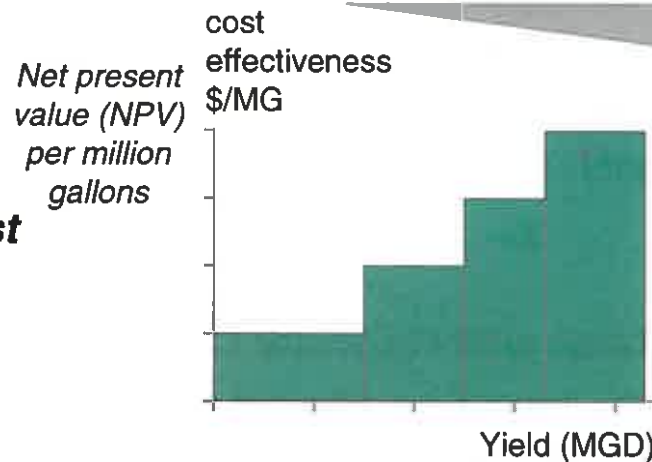
## Estimated costs and yield

Yield (MGD)

### Costs

- Capital
- Operating

## Evaluated against economic and non-economic criteria



Stakeholder sensitivity



Cost effectiveness

**Initial assessment more focused on economic and impact criteria- Further assessment will incorporate stakeholder and implementation related criteria**

## **Caveat: cost, yield figures are estimates**

Estimates do not reflect full technical design, or consideration of peak yields versus peak gap

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### **Cost and yield figures all contain inherent degree of uncertainty**

- Such figures typically developed over several months as part of comprehensive planning
- Consider these figures as ranges- not point estimates

### **Full technical design and optimization work as well as program implementation planning would still be required**

- There could be more optimal routing of water transmission, for example
- Key investments and proposals must be assessed in light of state water plan and forthcoming EPD analyses
- Analysis would have to consider peak yields versus peak requirements

### **Regardless, the estimates generated should enable consistent comparison of options and informed prioritization**

- Technical cost assumptions standardized across options (eg, costs of water piping, treatment)
- Costs "levelized" across options- discounted over project lifetimes and annual average unit costs computed- to enable comparisons of options with different cost profiles, capital expense intensities

## Summary- implications of analysis to date

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**Do not see ability to meet gap by 2012. Limited option set available in this timeframe**

**Appears we could meet gap by ~2015 and 2020...at significant cost**

- 2015 average cost efficiency (\$/MG) level of **\$~800/MG**, with capital expense **\$~3.0B**
- 2020 cost efficiency of **\$~410/MG avg**, with capital expense **\$~2.3B**
- Value of 2020 option vs. 2015 option set is significant (**\$~390/MG difference**) which equates to **~\$1.9B over 50 years**

**Conservation measures play important role in solution: low impact, cost-effective— but the range of yield identified suggest we can not close gap by conserving alone**

- Expanded indirect reuse could offer significant yield (200+ MGD), though at above average unit costs (~\$950/MG vs. ~800\$/MG for comparable yield supply options)

**Capture measures provide the bulk of the cost-effective yield identified, though they generally come only by ~2020.**

**Control options, while politically charged, can factor into long-term supply security**

**Challenge moving forward- evaluating key tradeoffs and taking into account different stakeholder concerns to balance equity and efficiency. We'll solicit your input here**

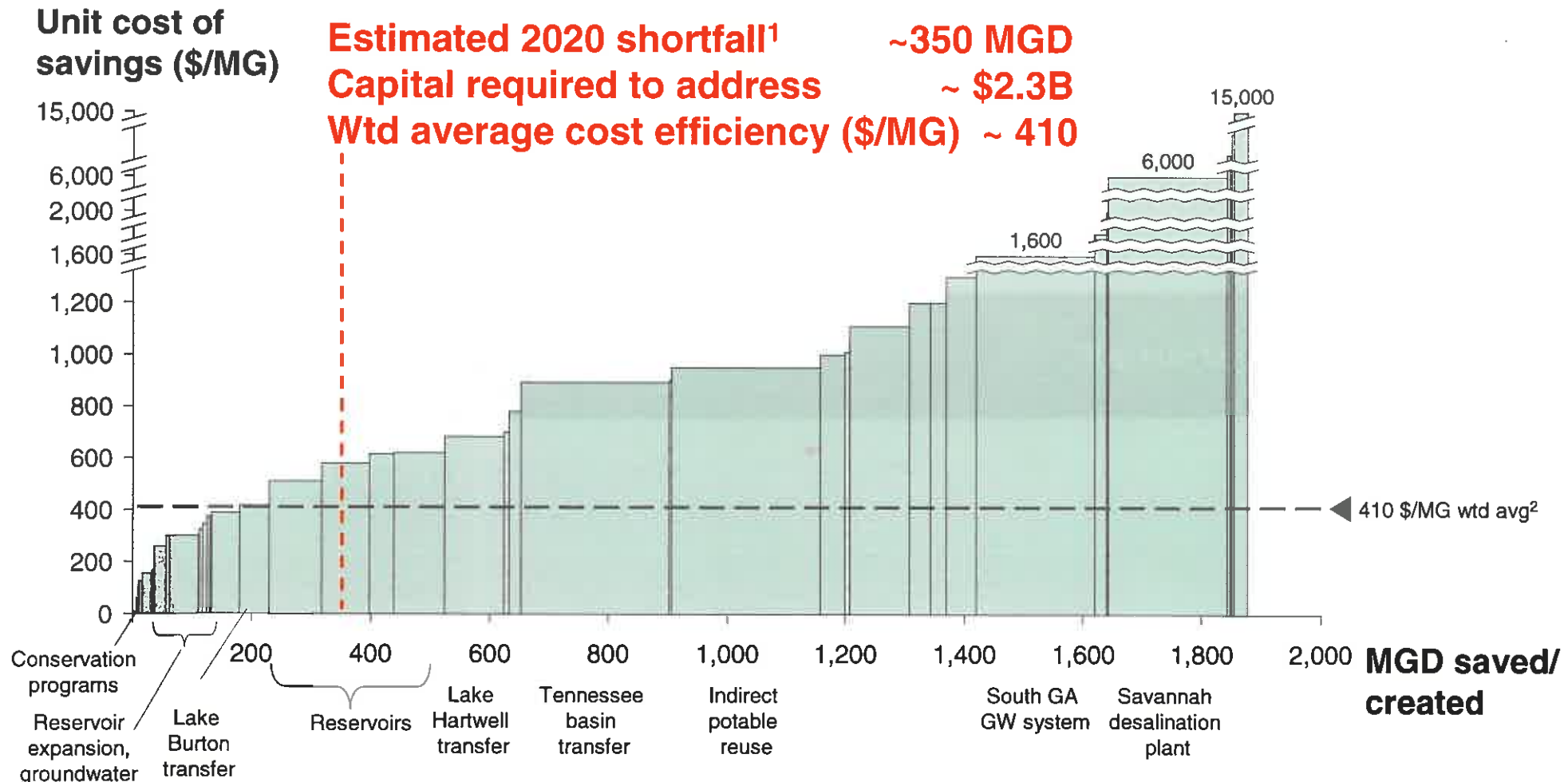
# Agenda

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**Ability to meet shortfall**

**Preliminary Estimates**

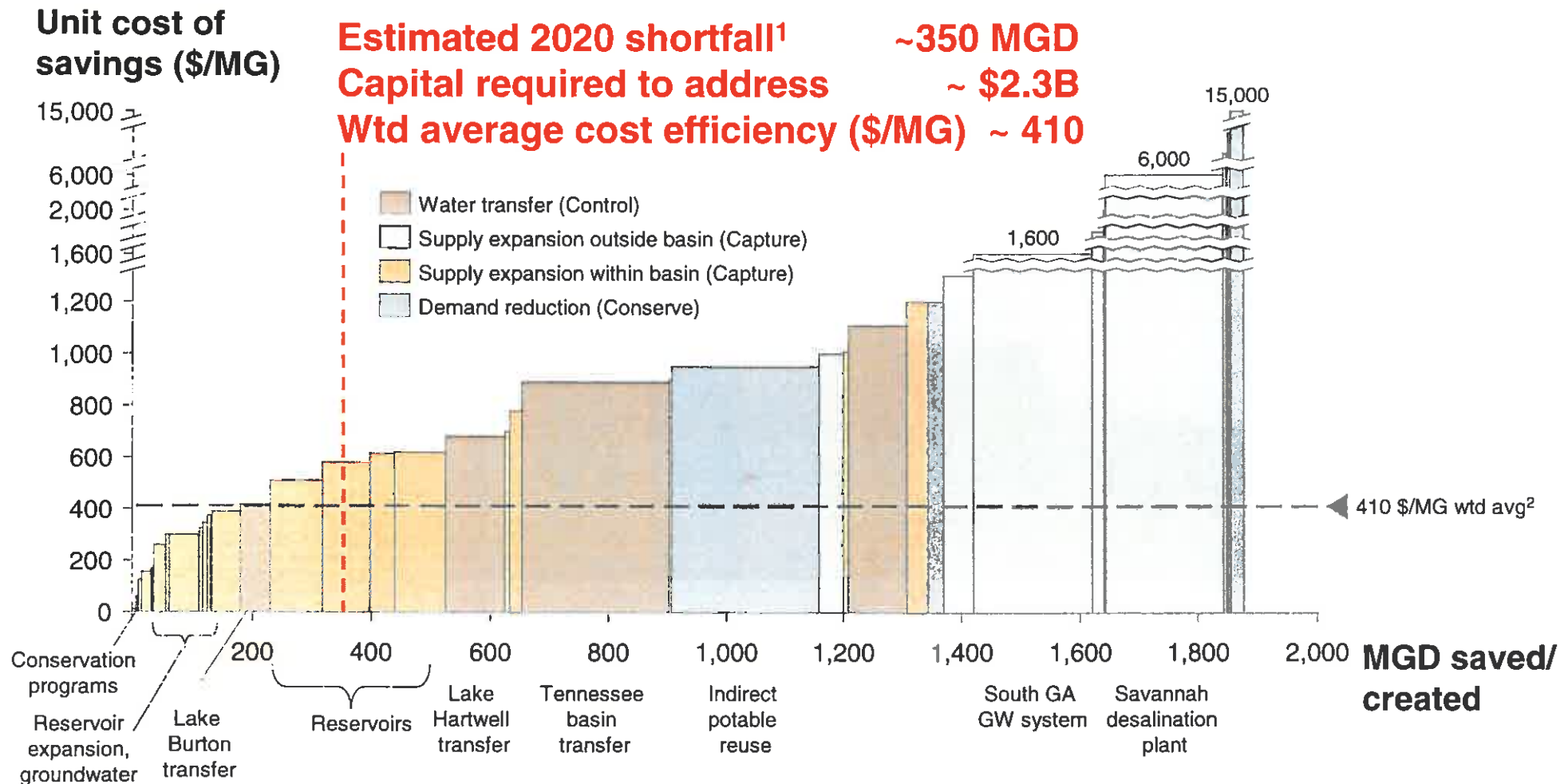
# By 2020, overall supply gap could be addressed, at rough capital cost of ~\$2.3B and at ~\$410/MG avg cost efficiency



Note: 1. Shortfall = Projected 2020 demand with conservation in Metro plan – Estimated 2020 supply (Lanier and Chatt. withdrawals per ruling, all other sources at current levels). Assumes demand continues to grow until year of shortfall. Other approaches could assume demand decreases as result of ruling, thus reducing implied gap. This analysis uses existing plan demand as baseline. Shortfall only accounts for counties with deficit under ruling. 2. Weighted average \$/MG calculated based on options that can address 2020 gap at lowest cost. Certain option yields may not be additive due to interaction effects; cost of transfer options do not account for return to originating basin.

Source: Technical Advisor Panel preliminary estimates

# Capture options contribute bulk of the most cost-effective yield



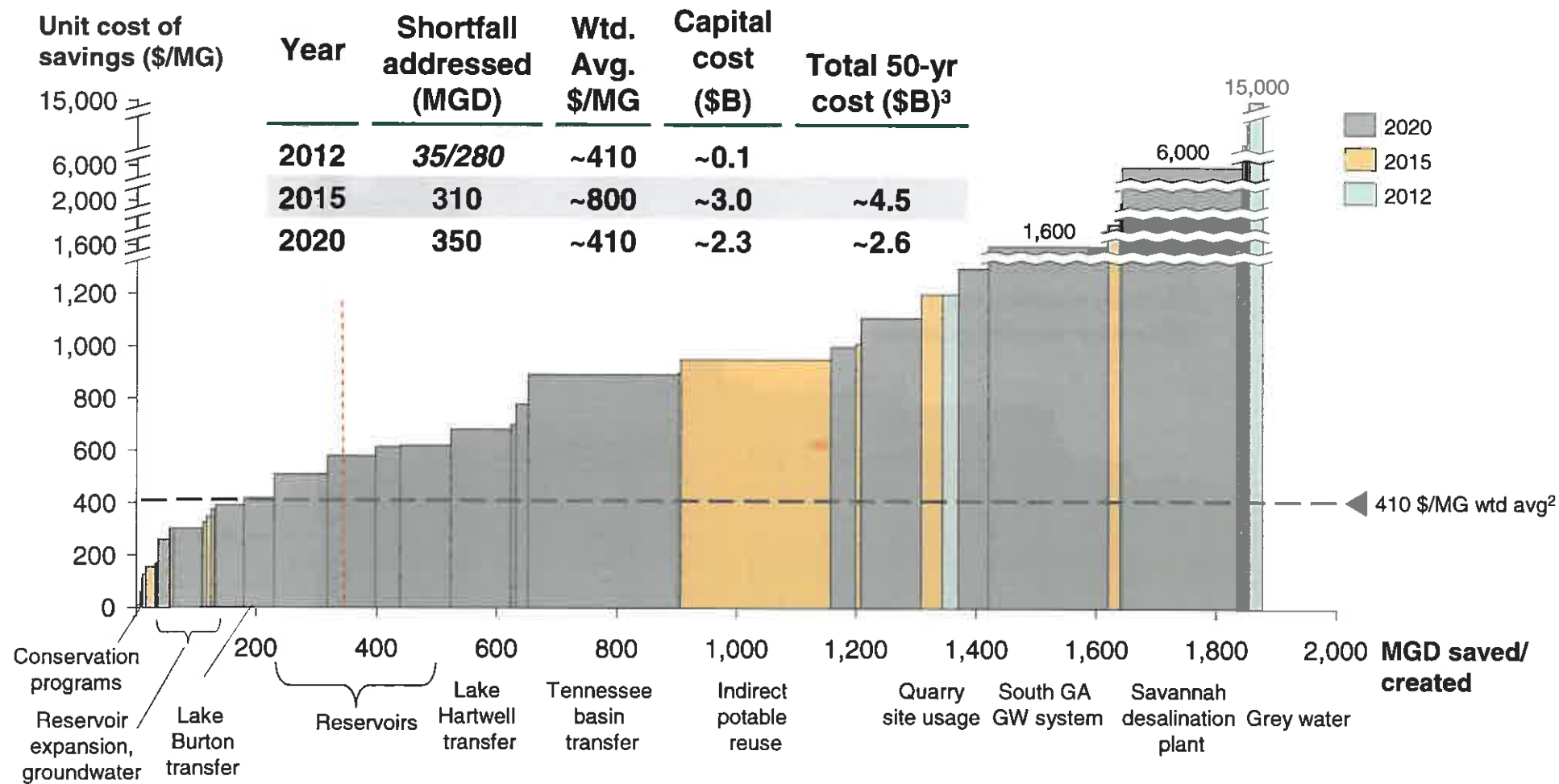
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Source: Technical Advisor Panel preliminary estimates

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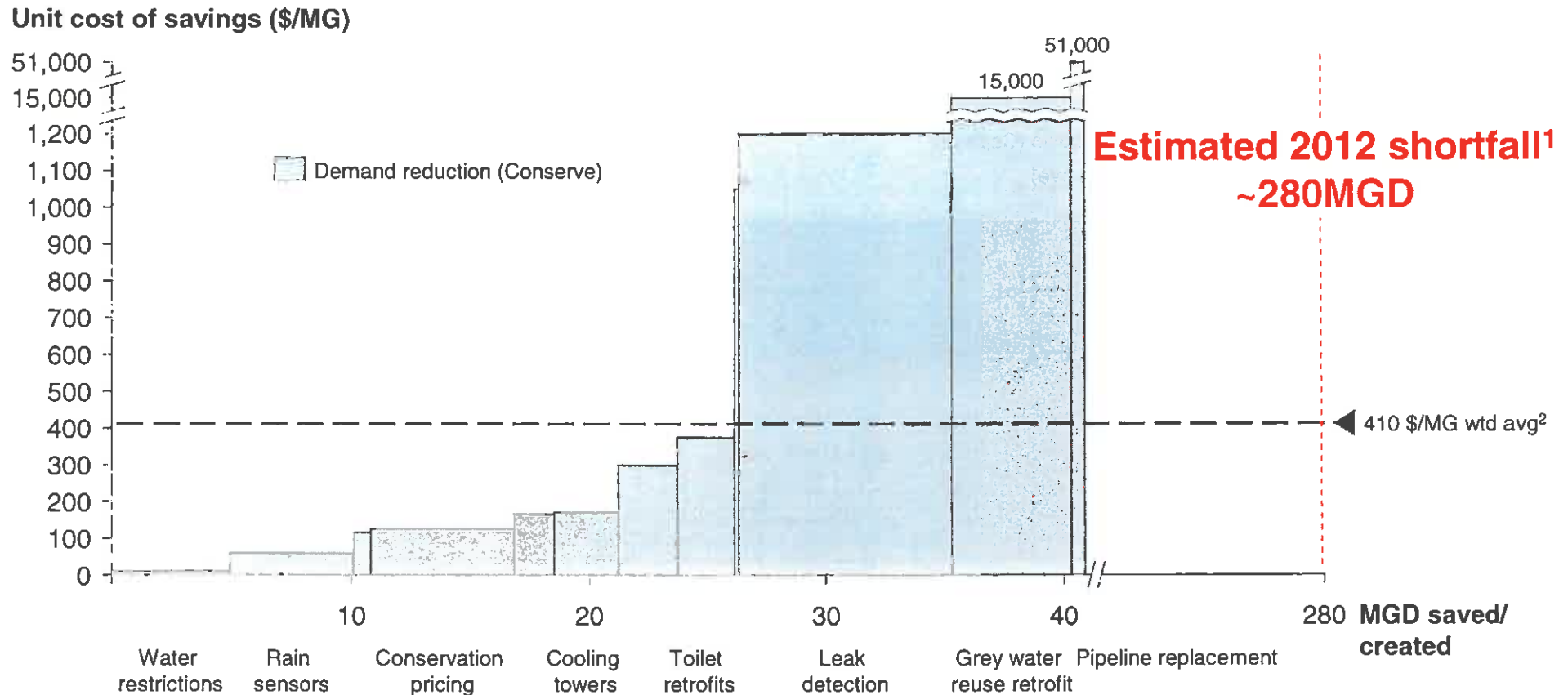
Preliminary Estimates

# By 2020, gap could be addressed largely thru capture; Indirect Re-use could provide significant 2015 yield



Note: 1. Shortfall = Projected 2020 demand with conservation in Metro plan – Estimated 2020 supply (Lanier and Chatt. withdrawals per ruling, all other sources at current levels). Assumes demand continues to grow until year of shortfall. Other approaches could assume demand decreases as result of ruling, thus reducing implied gap. This analysis uses existing plan demand as baseline. Shortfall only accounts for counties with deficit under ruling. 2. Weighted average \$/MG calculated based on options that can address 2020 gap at lowest cost 3. Calculated as the sum of capital expense and operating expenses over 50 years (assumed project life for options in portfolio) Certain option yields may not be additive due to interaction effects; cost of transfer options do not account for return to originating basin  
Source: Technical Advisor Panel preliminary estimates

# By 2012, conserve options can save ~35MGD of water at ~410 \$/MG



1. Shortfall = Projected 2012 demand with conservation in Metro plan – Estimated 2012 supply (Lanier and Chatt. withdrawals per ruling, all other sources at current levels). Assumes demand continues to grow until year of shortfall. Other approaches could assume demand decreases as result of ruling, thus reducing implied gap. This analysis uses existing plan demand as baseline. Supply and Demand only considered for counties that would be in deficit under ruling- excludes the surplus of ~30 MGD available in rest of Metro District

2. Weighted average \$/MG calculated excluding grey water reuse and pipeline replacement; Certain option yields may not be additive due to interaction effects

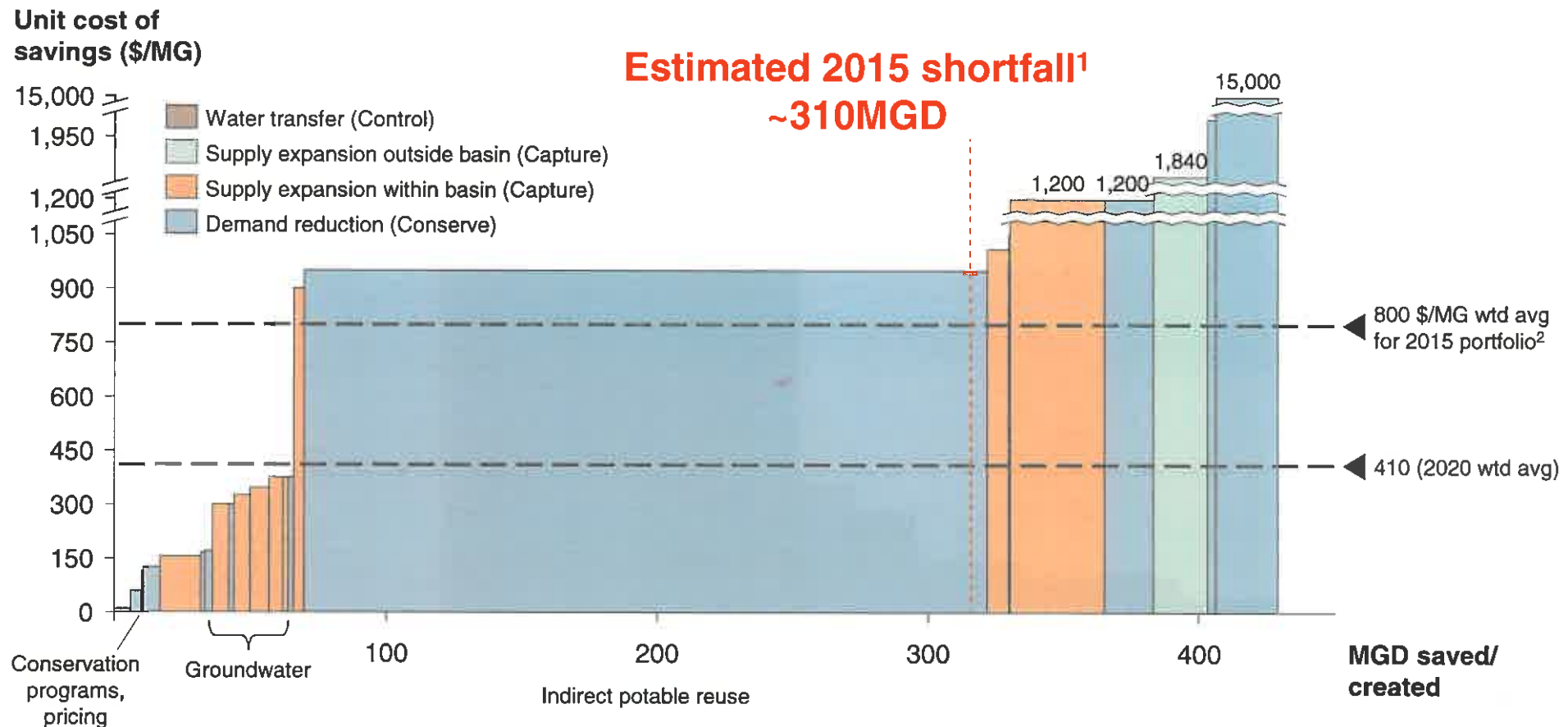
Source: Technical Advisor Panel preliminary estimates

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Backup

Preliminary Estimates

# By 2015, shortfall can be addressed through capture options and indirect potable reuse at ~800 \$/MG



1. Shortfall = Projected 2015 demand with conserv. in Metro plan – Estimated 2015 supply (Lanier and Chatt. withdrawals per ruling, all other sources at current levels). Assumes demand continues to grow until year of shortfall. Other approaches could assume demand decreases as result of ruling, thus reducing implied gap. This analysis uses existing plan demand as baseline. Shortfall only accounts for counties with deficit under ruling. 2. Weighted average \$/MG calculated based on options that can address 2015 gap at lowest cost. Certain option yields may not be additive due to interaction effects

Source: Technical Advisor Panel preliminary estimates

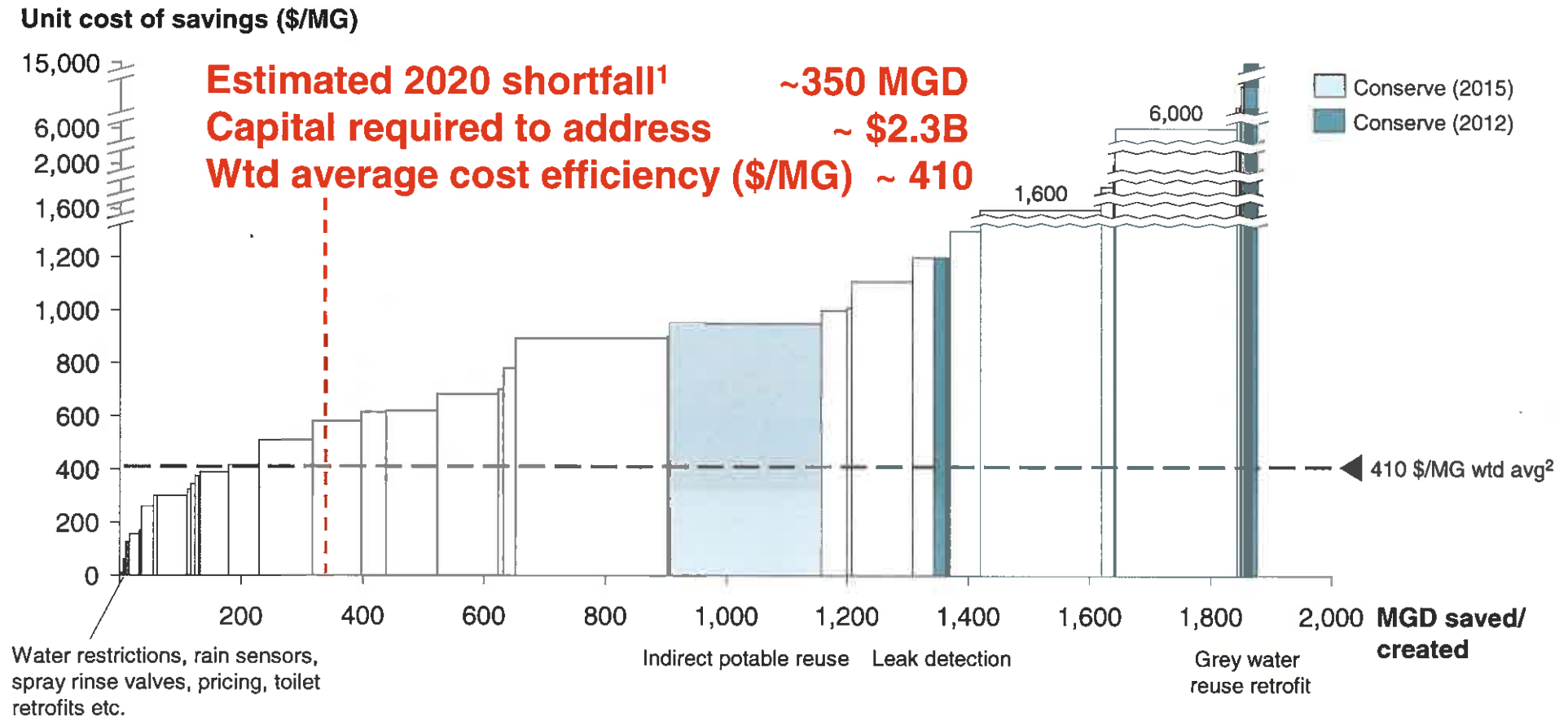
# Overview of key options: Conserve

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## **Conserve**

- **Conservation efficiency programs (eg, fixture retrofits)**
- **Reuse**
- **Pricing**
- **Loss Reduction**

# Many conservation options are cost-effective but not sufficient to address shortfall



Note: 1. Shortfall = Projected 2020 demand with conservation in Metro plan – Estimated 2020 supply (Lanier and Chatt. withdrawals per ruling, all other sources at current levels). Assumes demand continues to grow until year of shortfall. Other approaches could assume demand decreases as result of ruling, thus reducing implied gap. This analysis uses existing plan demand as baseline. Shortfall only accounts for counties with deficit 2. Weighted average \$/MG calculated based on options that can address 2020 gap at lowest cost. Certain option yields may not be additive due to interaction effects; cost of transfer options do not account for return to originating basin.

Source: Technical Advisor Panel preliminary estimates

## Detail of conserve options for Metro District

Option Shortcode	Cost Efficiency (\$/MG)	Capital Cost (\$M)	Capital expense (\$/MG)	Operating expense (\$/MG)	Yield (MGD)	Timing
Water restrictions	10	0	0	11	7	2012
Rain sensors	60	6	48	12	3	2012
Spray rinse valves	115	1	127	85	0.3	2012
Conservation pricing	125	14	35	90	6	2012
Multi family sub-metering	165	6	88	0	2	2012
Cooling towers	170	6	137	55	3	2012
Showerheads and faucets	300	8	636	424	1	2012
Toilet retrofits	375	25	1,493	204	1	2012
Indirect potable reuse (6 county)	950	2,800	610	340	252	2015
Residential clothes washers	1,050	14	107	72	1	2012
Leak detection	1,200	17	69	1,131	27	2012
Direct potable reuse	1,700	5,600	1,218	482	252	2015
Non-potable reuse	2,000	111	2,027	0	3	2015
Grey water reuse retrofit	15,000	3,300	7,862	7,138	23	2012
Pipeline replacement	51,000	1,184	51,000	0	3	2012

Source: Technical Advisor Panel estimates

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# Conservation efficiency programs offer attractive cost efficiency levels

	Bundles	Measures evaluated	Incremental yield in 2012 (MGD)	Incremental yield in 2035 (MGD)	Average cost efficiency (\$/MG)
1	Residential retrofits	Toilet retrofit Showerheads and faucets Clothes washers	5-25	3-24	\$350-\$400 \$250-\$350 \$1000-\$1100
2	Sub-metering and water audits	Multi-family sub-metering	2-3	2-3	\$160 - \$170
3	Commercial retrofits and process improvements	Spray rinse valves Cooling tower audits/standards	3-8	3-7	\$100 - \$200
4	Outdoor water usage reduction	Watering restrictions Rain sensor controllers	10-23	10-27	\$10 \$50-\$70

Total:

20 – 59 MGD

18 – 62 MGD

xx – xx MGD

More aggressive program (eg. incentive-driven implementation)

Most aggressive program (eg. mandated implementation)

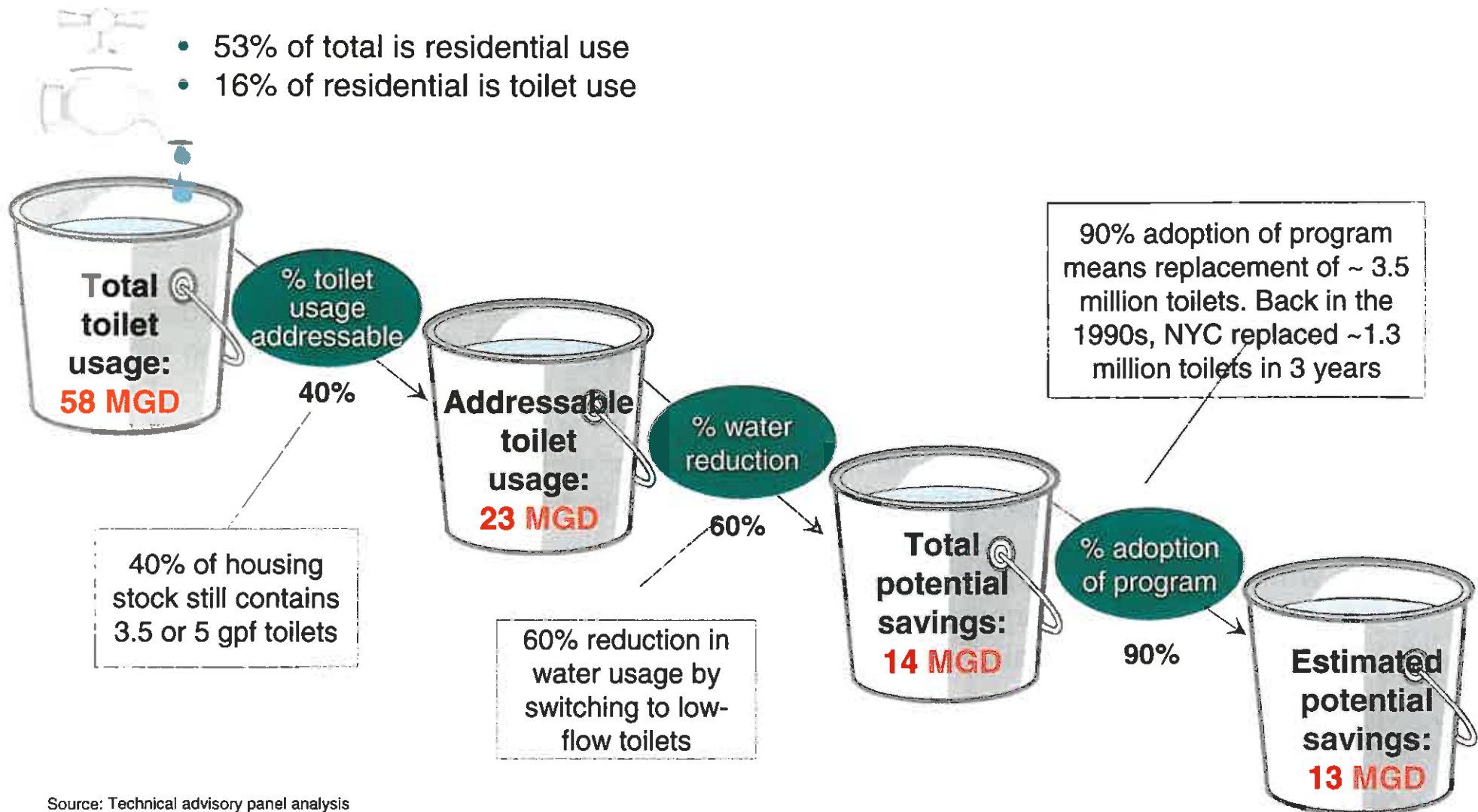
**Key question becomes degree of mandatory measures (which increase yield) versus incentive-driven approach**

Source: Technical Advisory Panel analysis

TF Mtg 2-final ppt

# Potential savings from retrofit to 1.6 gallons per flush (gpf) low-flow toilet

**Total Demand = 680 MGD**



Source: Technical advisory panel analysis  
TF Mtg 2-final ppt

## Water re-use: *option descriptions*

Option	Description
<b>Indirect potable reuse</b>	Recapture treated wastewater discharges downstream from original point of discharge to replenish drinking water supplies, then pump water to upstream communities critically impacted by ruling
<b>Direct potable reuse</b>	Treat wastewater to extremely high standards, then bring it directly back to the drinking water supply system without any dilution with nature
<b>Non-potable reuse</b>	Use treated wastewater for non-potable uses such as irrigation of golf courses, parks, or for use in cooling plant processes
<b>Grey water reuse</b>	Localized purple pipes to directly reuse grey water (non-toilet household water such as shower and sink water) for non-potable reuse such as toilets

## **Indirect potable reuse: *context***

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**Indirect potable reuse is recapturing treated wastewater, which after sufficient contact and dilution with nature, can be reused for potable purposes**

- Uses water treatment technologies to return wastewater to the natural environment (eg. river, stream, or reservoir), and pumps return flow upstream to critically impacted counties to increase their drinking water supply

**Indirect potable reuse is a critical component of the Metro Water District's water supply plans through 2035 and beyond**

- Currently practiced in Metro Water District both in planned and incidental forms, but expansion of option can directly address the gap in critically affected counties

**Incidental reuse common in Metro Water District, as several major water supply intakes on the Chattahoochee River are downstream of wastewater discharges**

**Planned reuse has been instituted by a number of local wastewater providers since 2003, mostly found in Gwinnett, Cobb and Clayton Counties**

Conserve

Preliminary Estimates

# Indirect potable re-use the highest yielding, most cost-efficient re-use option

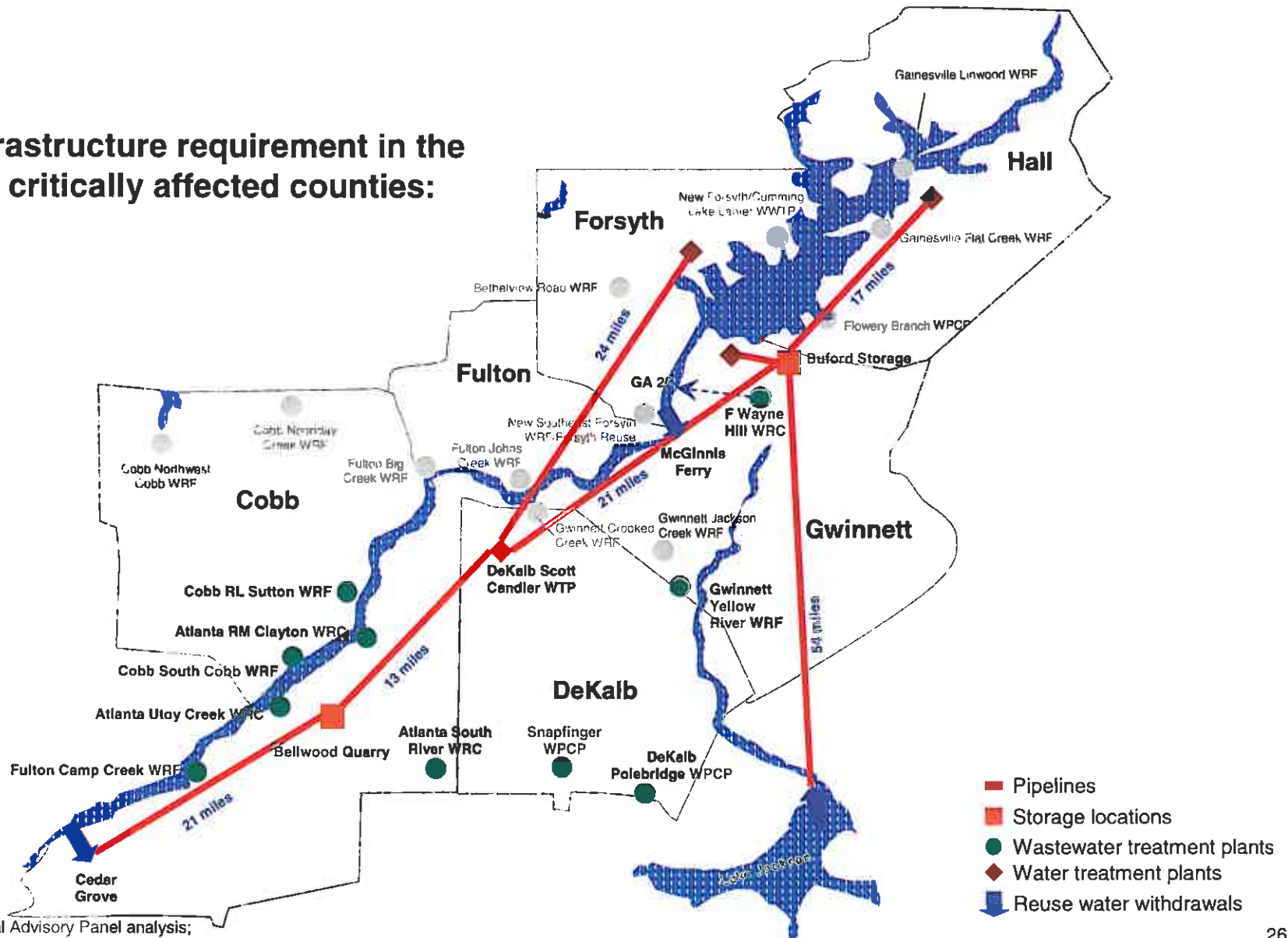
	Option	Average Yield (MGD)	Cost efficiency (\$/MG)	Total cost (\$M)	Capital cost (\$M)	Timing (years)
1 Indirect potable reuse	6-county solution	~250	\$950	\$4,300	\$2,800	4-5
	4-county solution (excl Hall, Forsyth)	205	\$860	\$2,900	\$2,000	
2 Direct potable reuse	Direct potable reuse	~250	\$1,700	\$8,000	\$5,600	3-4
3 Non-potable reuse (irrigation)	Irrigation of all outdoor usage	~70-75 <sup>4</sup>	\$11,000 <sup>2</sup>	\$14,800	\$14,400	3-7
	For golf courses, parks only <sup>1</sup>	3	\$2,000	\$112	\$111	
4 Grey water reuse	Retrofit on existing homes	~20-25	\$9,000 - \$27,000 <sup>3</sup>	\$10,000	\$3,300	Localized implementation at 10% of households/year

1. Based on demand from top 10 irrigation users (golf courses and parks) in the 6 affected counties 2. Cost highly dependent on customer density 3. Cost highly dependent on cost of equalization, treatment, and pressure tank 4. Total of all outdoor water use (total use less winter use) for the 6 affected counties, with Cobb County at 53% to reflect their withdrawals from Chattahoochee only  
Source: Technical Advisory Panel analysis;

TF Mtg 2-final ppt

## Indirect potable reuse: *infrastructure requirement*

Infrastructure requirement in the  
6 critically affected counties:



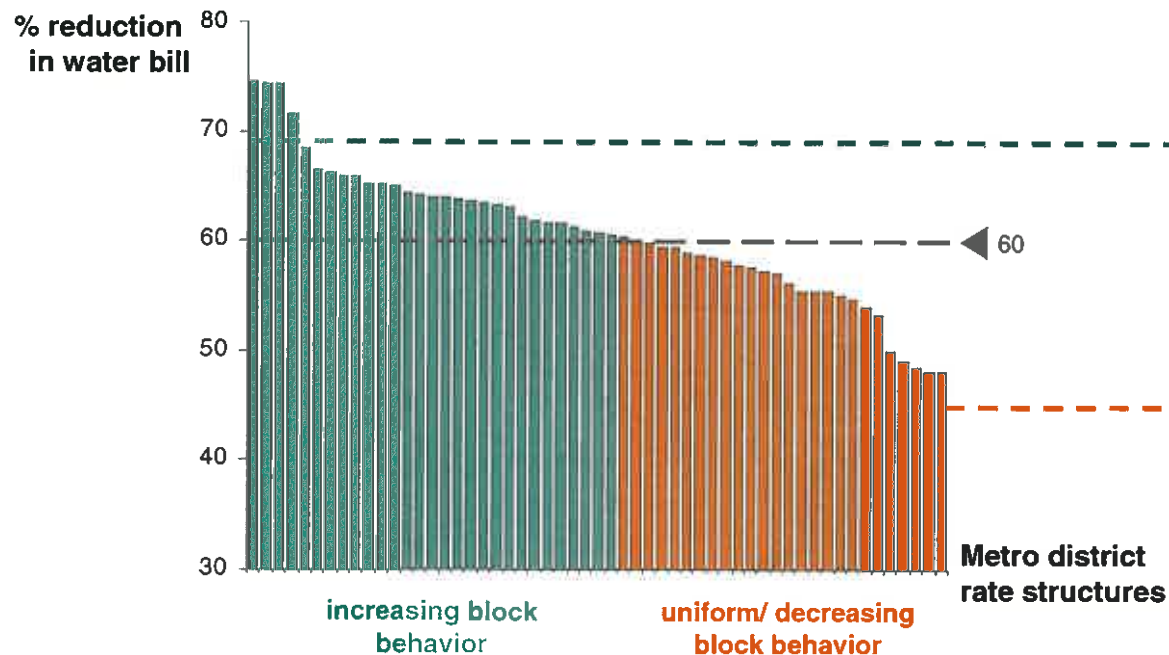
Source: Technical Advisory Panel analysis;

# Many Metro district rate structures are effectively flat for average consumers

**Scenario: Heavy water user (consuming 15K GPM) drops consumption 60% to average levels (6K GPM) <sup>1</sup>**

**Actual utility rate structure examples: highlight variation in rate structure design**

**Scenario tests steepness of the underlying rate structure**  
 – If bill decreases by *more than 60%*, the rate structure is increasing block



GPM tier	Rate (per 1000 gal)	
0 – 2000	\$0 (Base Charge - \$19.75)	
2001 - 4000	\$5.34	
4001 - 6000	\$6.67	125%
6001 - 10000	\$10.68	200%
>10000	\$17.09	320%

GPM tier	Rate (per 1000 gal)
0 – 2000	\$0 (Base Charge - \$17.60)
2001 - 20000	\$3.08
>20000	\$4.18

Note: 1. Average metro district residential consumption = 6000 GPM, Peak consumption (2.5x average) = 15000 GPM; GPM – Gallons Per Month  
 Source: GEFA & UNC Environmental Finance Center table of Rate Structures and Bills (May 2009)

## Conservation pricing yield and cost estimates

Option	Yield (MGD)	\$/MG	Timing (yrs)
Institute steeper increasing block rate structures for <b>residential</b> (single family + multi-family) users to reduce <b>outdoor</b> water use <ul style="list-style-type: none"> <li>• Opportunity sized using current rate structures, focusing increases on subset of utilities with evidence of higher potential</li> <li>• Assumes marginal price increases at high consumption levels (~14,000 Gallons per Month (GPM); where average is ~6,000 GPM)</li> </ul>	4 - 7	~100 - 200 <sup>1</sup>	1 - 3

Note: 1. Assumes a cost per utility of ~\$250K, 55 utilities impacted and a project life of 50 years; comparable to estimate in current Metro plan, Table 4-2  
 Source: MNGWPD Water Supply and Water Conservation Plan (May 2009), Table 4-2

TF Mtg 2 - final ppt

Conserve

Loss reduction **Preliminary Estimates**

# Leak abatement options estimated to yield ~8-10 MGD by 2012, en route to 27 MGD incremental savings by 2035

	Option	Yield in 2012 (MGD)	Yield in 2035 (MGD)	Cost efficiency <sup>1</sup> (\$/MG)	Total cost (\$M)	Capital cost (\$M)	Timing
1 <b>Leak abatement<sup>2</sup></b>	Leak detection	8-10	27	\$1,200	\$262	\$17	Savings to begin immediately;
	Valve exercising						
	Pressure management						
2 <b>Pipeline replacement</b>	Replacement of aged pipeline infrastructure	~0.6	3	\$51,000 - \$100,000	\$1,184 - \$2,368	\$1,184 - \$2,368	Savings to begin immediately;

**Pipeline replacement, while required in some areas, not an overall cost-effective measure to address water supply. Leak abatement (ie, rapid response) far more cost efficient**

1. Based upon 25 years of lifetime yield for all measures

2. Set 10% water loss goals for all utilities, versus current plan which is to set water loss goals by individual utilities

Source: Technical Advisory Panel analysis;

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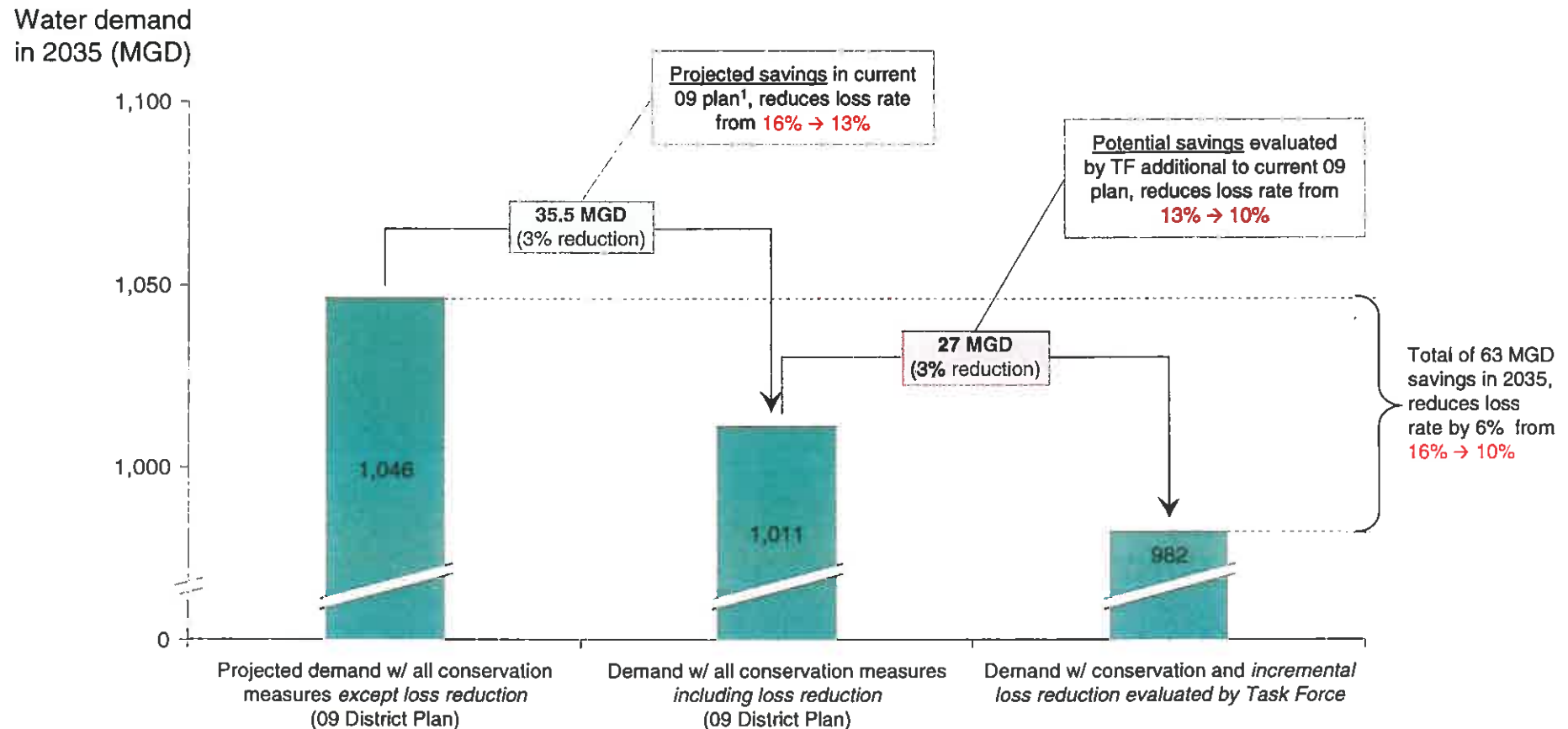
Conserve

Backup

Loss reduction

# Goal is to reduce current 16% water loss rate by 3% in 09 District Plan and 3% additional considered by Task Force

Metro Water District water demand forecast in 2035 and loss reduction options



**Achieve 10% AWWA standard with 3% further loss reduction**

1. Plan assumes reduction of all non-revenue water above 10% by half by county

Source: Metro North Georgia District Water Plan (May 2009), Technical Advisory Panel analysis;  
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# Overview of key options: Capture

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## Capture

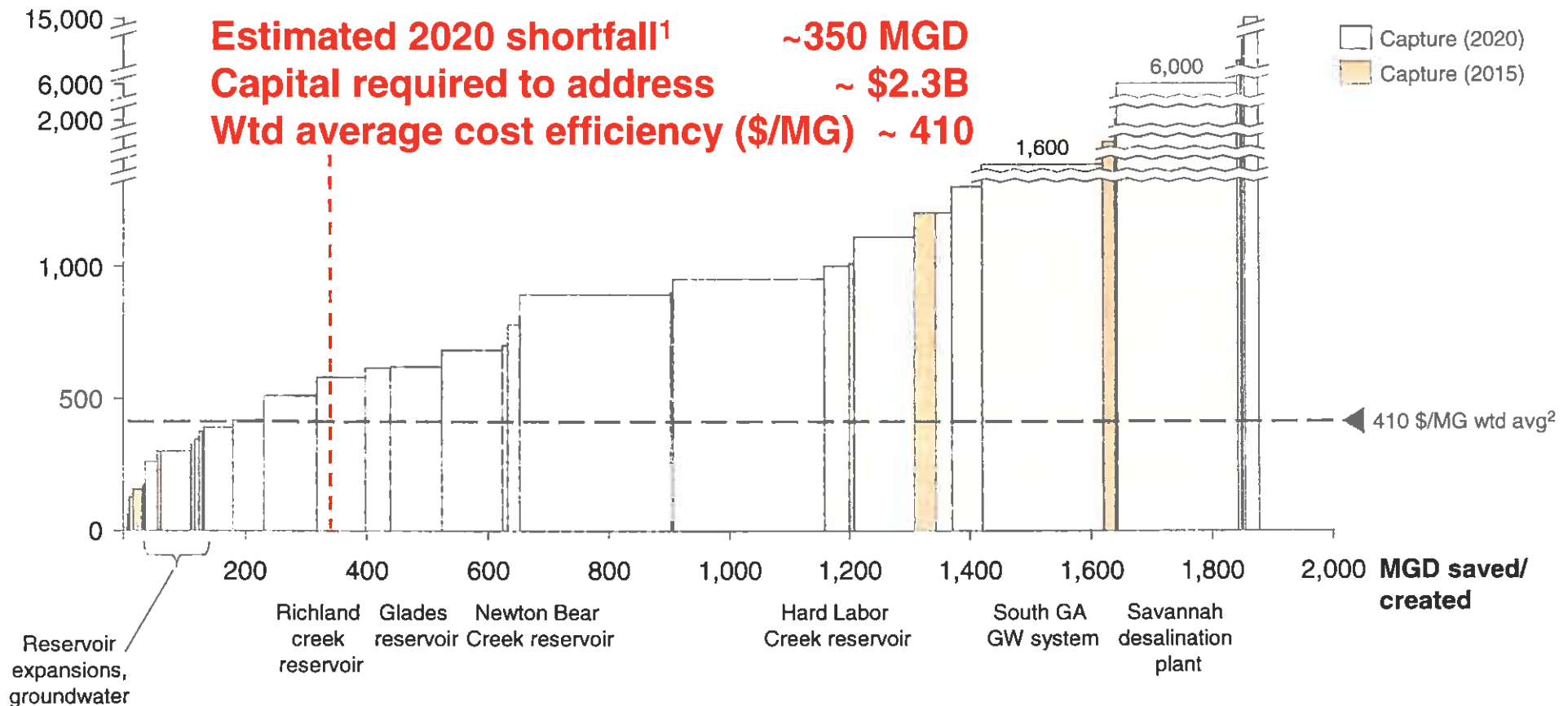
- Reservoirs and quarries
- Groundwater and Aquifer Storage and Recovery (ASR)

Capture

Preliminary Estimates

# Many capture options are cost effective, potential long-term solutions

Unit cost of savings (\$/MG)



Note: 1. Shortfall = Projected 2020 demand with conservation in Metro plan – Estimated 2020 supply (Lanier and Chatt. withdrawals per ruling, all other sources at current levels). Assumes demand continues to grow until year of shortfall. Other approaches could assume demand decreases as result of ruling, thus reducing implied gap. This analysis uses existing plan demand as baseline. Shortfall only accounts for counties with deficit 2. Weighted average \$/MG calculated based on options that can address 2020 gap at lowest cost. Certain option yields may not be additive due to interaction effects; cost of transfer options do not account for return to originating basin.

Source: Technical Advisor Panel preliminary estimates

TF Mtg 2-final ppt

## Detail of capture options for Metro District

Option Shortcode	Cost Efficiency (\$/MG)	Capital Cost (\$M)	Capital expense (\$/MG)	Operating expense (\$/MG)	Yield (MGD)	Timing
GW for non-potable use	155	8	29	126	15	2015
Tussahaw Creek reservoir expansion	260	64	175	85	20	2020
Lawrenceville GW system	300	5	46	254	6	2015
Dog river reservoir expansion	300	230	263	37	48	2020
Spalding county GW system	325	7	64	261	6	2015
Bartow county GW system	345	11	86	259	7	2015
Suwanee GW system	375	10	110	265	5	2015
Palmetto GW system	375	3	82	293	2	2015
Big Haynes Creek reservoir expansion	390	270	315	75	47	2020
Generic Forsyth reservoir	510	660	411	99	88	2020
Richland creek reservoir (larger)	580	620	425	155	80	2020
Etowah River Dam No. 1 reservoir expansion	615	350	468	147	41	2020
Glades reservoir	620	800	516	104	85	2020
Fulton Bear Creek reservoir	700	95	578	122	9	2020
Richland creek reservoir (planned)	725	340	532	193	35	2020
Newton Bear Creek reservoir	780	225	616	164	20	2020
Lawrenceville ASR	900	19	260	640	4	2015
Hard Labor Creek reservoir	1,000	625	835	165	41	2020
Small Quarry	1,010	95	651	359	8	2015
Large Quarry	1,200	250	1,174	26	35	2015
Generic Gwinnett reservoir	1,300	965	1,058	242	50	2020
South GA GW system	1,600	2,650	726	874	200	2020
Floyd/Bartow ASR	1,840	450	1,233	607	20	2015
Savannah desalination plant	6,000	13,730	3,762	2,238	200	2020
Gwinnett septic conversion	6,600	480	5,260	1,354	5	2020
Forsyth septic conversion	6,600	336	6,137	477	3	2020
Hall septic conversion	6,700	408	5,589	1,104	4	2020

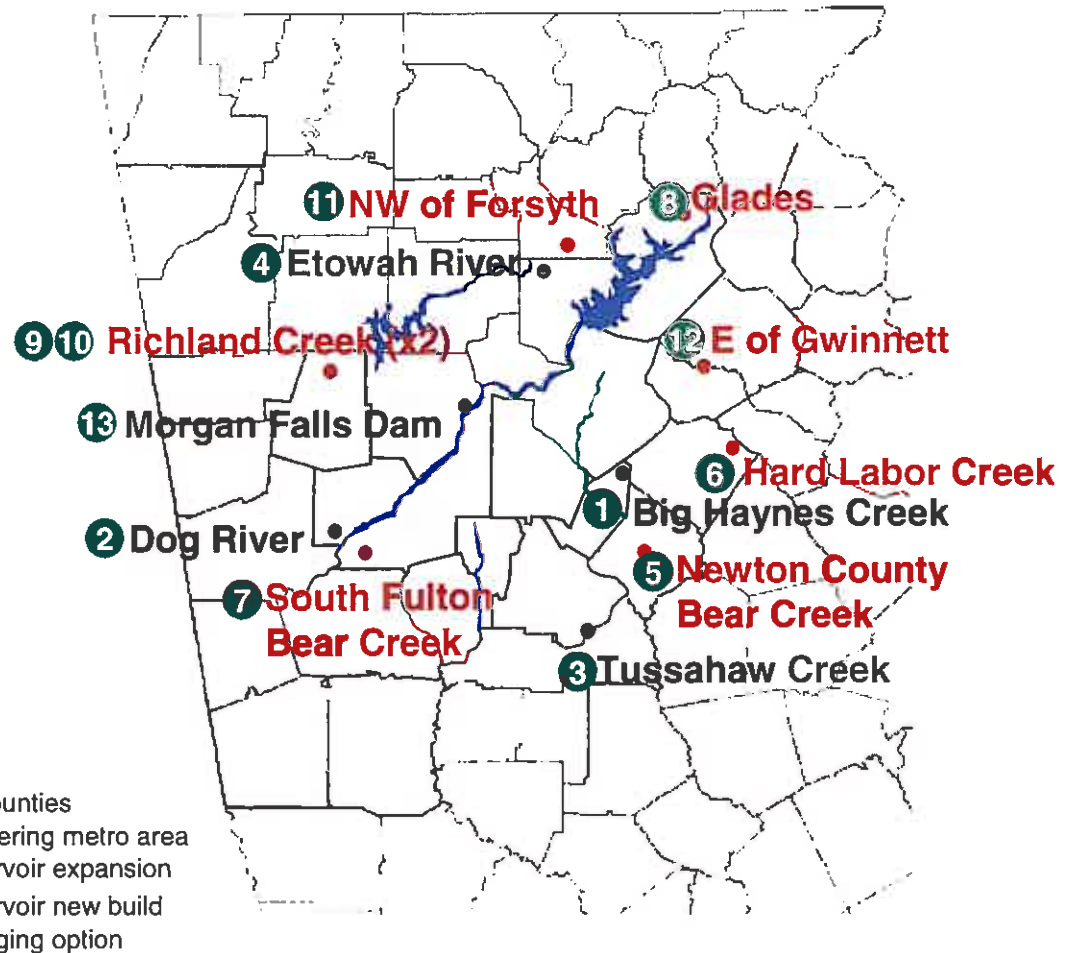
Source: Technical Advisor Panel estimates

TF Mtg 2-1nal ppt

# Total of 15 reservoir options analyzed for costs, yields, feasibility

## Detailed analysis conducted for:

- 4 reservoir expansions
- 8 new reservoir builds
- 1 dredging option
- 2 types of quarry conversion options (could apply to ~10 sites)



1. Metropolitan North Georgia Water Planning District

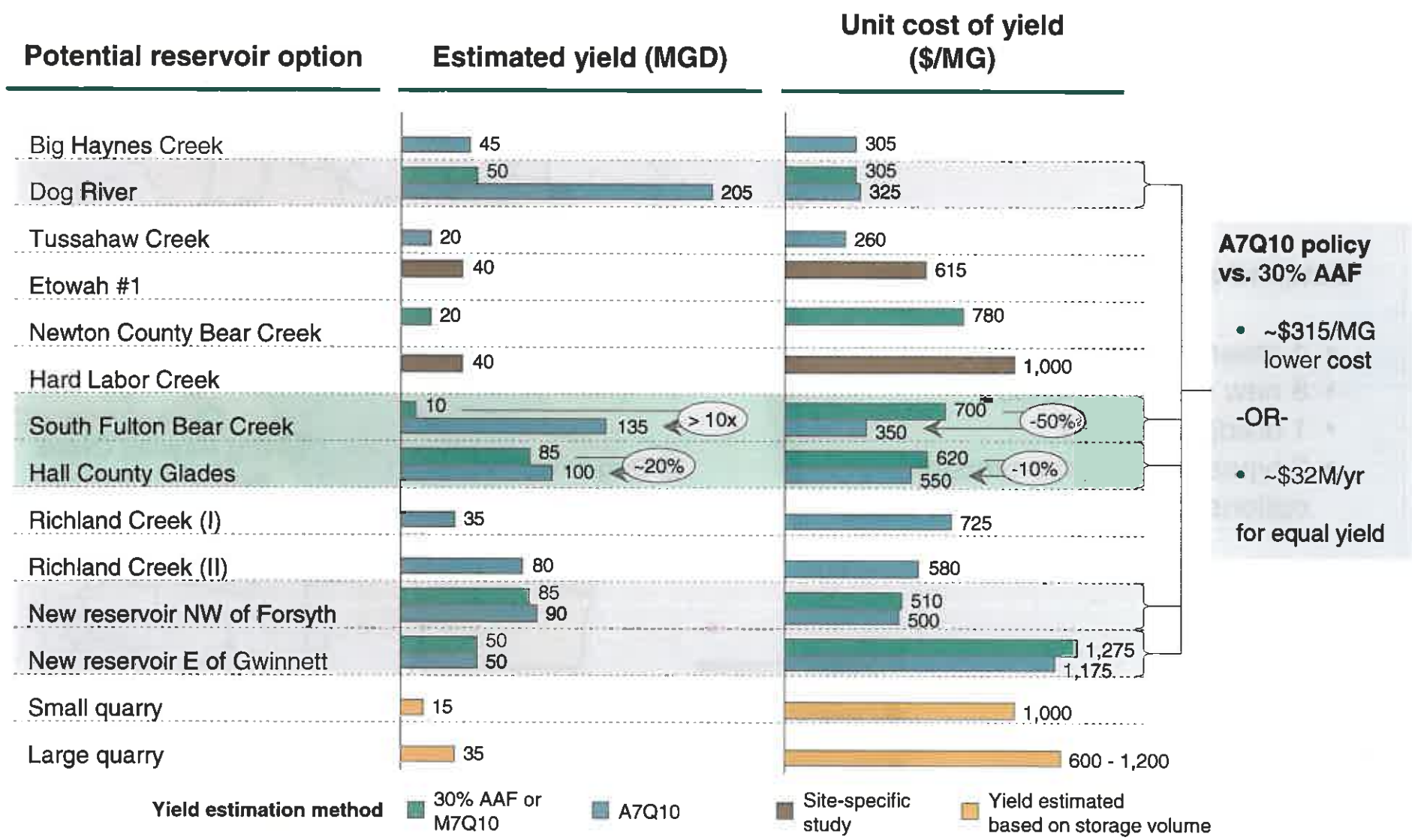
TF Mtg 2-final ppt

Capture

**Preliminary Estimates** Reservoirs

# Potential yields, unit costs very sensitive to min flow policy

Yields up to 10x higher and unit costs up to 50% lower possible with lower instream requirement



## Cost, yield estimates for reservoir options (I)

	Option	Min flow policy assumption	Yield (MGD)	Cost (\$/MG)	Timing (years)
<b>Expand</b>	Big Haynes Creek	A7Q10	45	305	8-12
	Dog River	30% AAF	50	305	8-12
	Dog River	A7Q10	205	325	8-12
	Tussahaw Creek	A7Q10	20	250	8-12
	Etowah River Dam #1	Site-specific study	40	615	8-12
	Newton County Bear Creek	M7Q10	20	780	8-12
	Hard Labor Creek	Site specific study	40	1,000	8-12
<b>Build</b>	South Fulton Bear Creek	30% AAF	10	700	8-12
	South Fulton Bear Creek	A7Q10	135	350	8-12
	Hall County Glades	30% AAF	85	620	8-12
	Hall County Glades	A7Q10	100	550	8-12
	Richland Creek	A7Q10	35	725	10-12
	Richland Creek (larger)	A7Q10	80	580	10-12

1. Includes additional year for reservoir to fill  
 Note: Estimates based on 50 year project life

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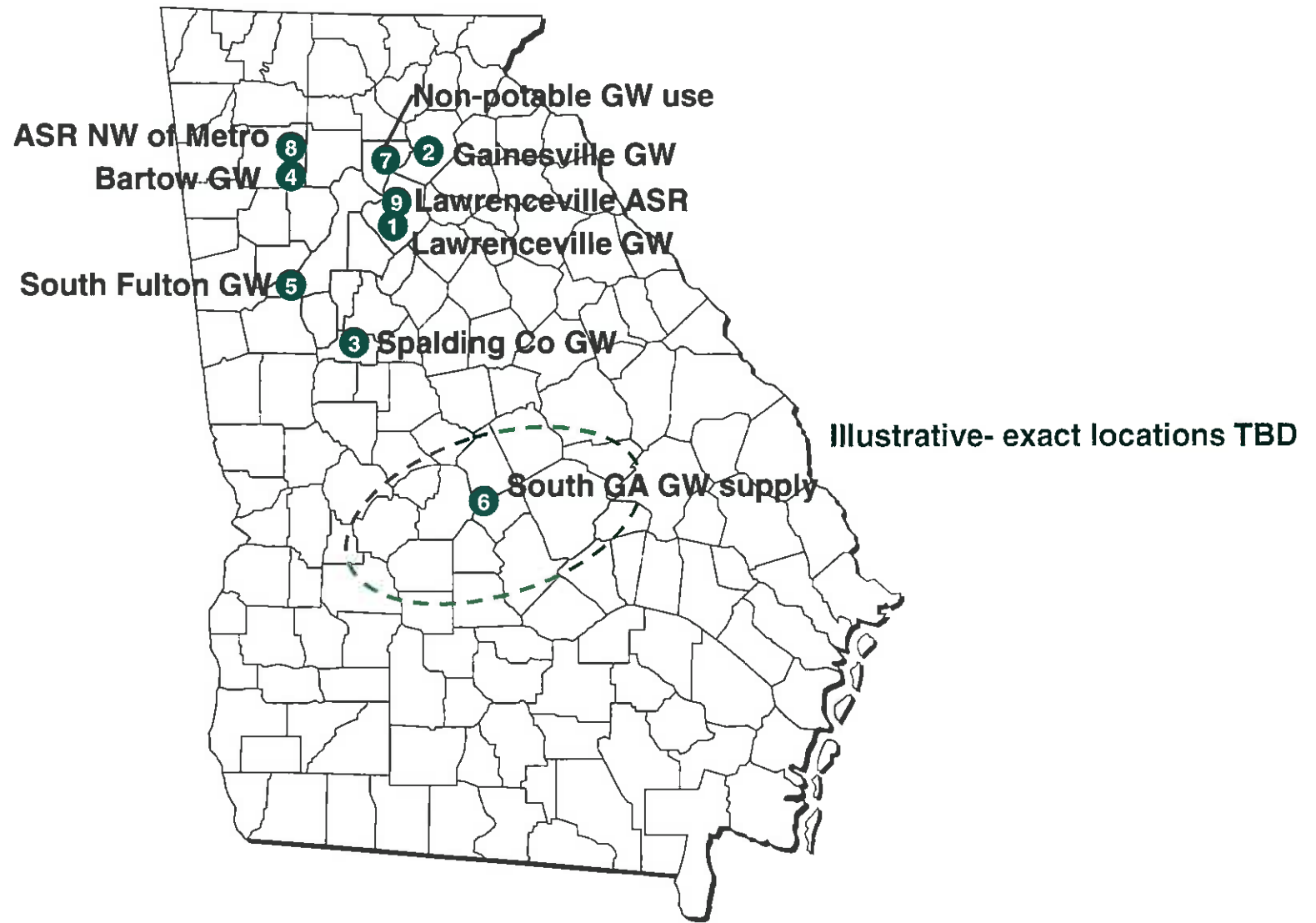
## Cost, yield estimates for reservoir options (II)

	Option	Min flow policy assumption	Yield (MGD)	Cost (\$/MG)	Timing (years)
Generic site reservoirs	New reservoir NW of Forsyth	30% AAF	85	510	8-12
	New reservoir NW of Forsyth	A7Q10	90	500	8-12
	New reservoir E of Gwinnett	30% AAF	50	1,275	8-12
	New reservoir E of Gwinnett	A7Q10	50	1,175	8-12
Quarries	'Small' quarries (combined total of 3 quarries)	Ample stream flow, yield limited by storage volume	15	1,000	8-12
	'Large' quarry (1 large active quarry)	Ample stream flow, yield limited by storage volume	35	600-1,200 <sup>1</sup>	8-12
Dredge	Morgan Falls Dam (Bull Sluice Lake)	Estimates are pending further analysis; potential yields could be highly sensitive to Buford Dam operations assumptions, which the Task Force lacks at this time			

1. Depends significantly on acquisition cost  
 Note: Estimates based on 50 year project life

# Total of 9 specific groundwater options evaluated

Topic: Aquifer Storage and Recovery (ASR) / Groundwater (GW)



Capture

**Preliminary Estimates**

GW/ASR

## ASR/Groundwater option summary

	Option	Yield (MGD)	Cost (\$/MG)	Timing (years)
<b>Ground-water</b>	Lawrenceville groundwater	6	300	3
	Gainesville groundwater	5	375	3
	Spalding county groundwater	6	325	3
	Bartow groundwater	7	345	4
	Palmetto groundwater	2	375	4
	South GA groundwater	200	1,600	8-10
	Groundwater for non-potable use in Metro area	15	155	3
<b>ASR</b>	ASR northwest of Metro area	20	1,840	4-6
	ASR to augment Lawrenceville groundwater	4	900	2-4

Note: Estimates based on 50 year project life

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# Overview of key options: Control

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## Control

- Water transfers

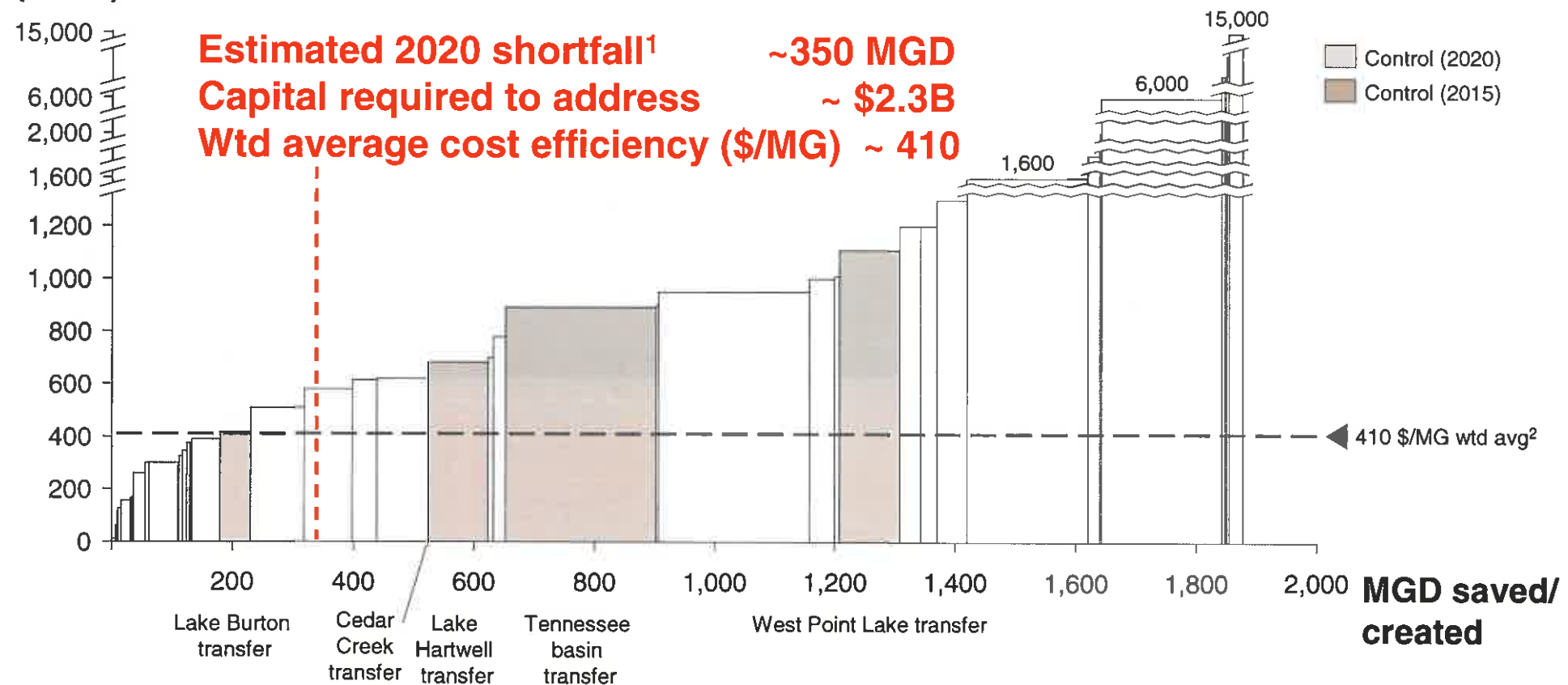
Control

Preliminary Estimates

Control

# Control options are potential long term solutions

## Unit cost of savings (\$/MG)



Note: 1. Shortfall = Projected 2020 demand with conservation in Metro plan – Estimated 2020 supply (Lanier and Chatt. withdrawals per ruling, all other sources at current levels). Assumes demand continues to grow until year of shortfall. Other approaches could assume demand decreases as result of ruling, thus reducing implied gap. This analysis uses existing plan demand as baseline. Shortfall only accounts for counties with deficit 2. Weighted average \$/MG calculated based on options that can address 2020 gap at lowest cost  
 Certain option yields may not be additive due to interaction effects; cost of transfer options do not account for return to originating basin  
 Source: Technical Advisor Panel preliminary estimates

Control

Preliminary Estimates

Control

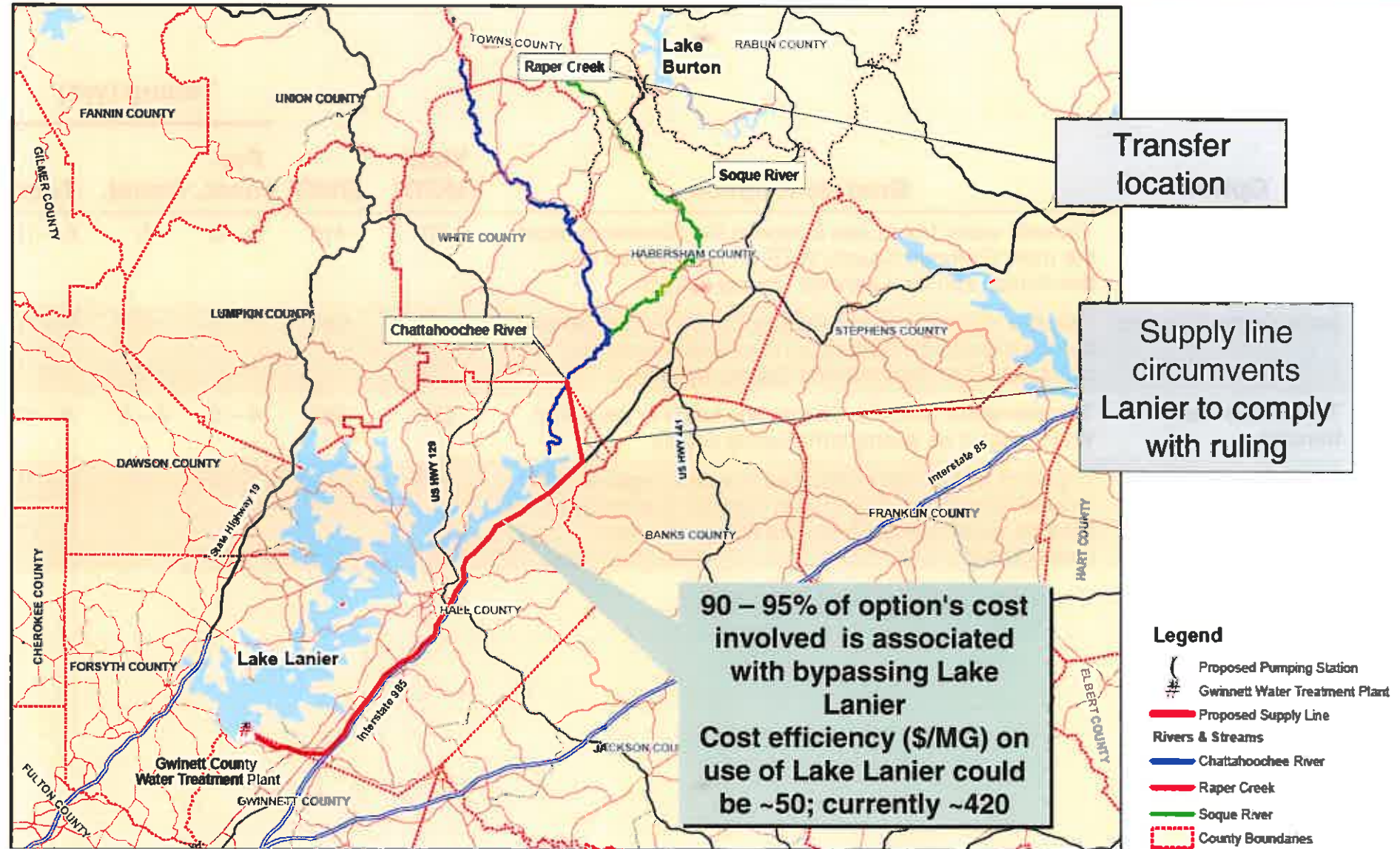
## Control options yield and cost estimate detail

Option	Brief Description	Yield (MGD)	\$/MG	Timing (yrs)		
				Pre-const.	Const.	Total
Lake Burton transfer	Transfer water from Lake Burton in the Savannah basin the main Gwinnett County WTP on Lake Lanier for distribution into the Gwinnett County system	50	415	3 – 5	5	8 – 10
Lake Hartwell transfer	Transfer water from Lake Hartwell in the Savannah basin the main Gwinnett County WTP on Lake Lanier for distribution into the Gwinnett County system	100	680	3 – 5	5	8 – 10
Tennessee basin transfer	Transfer water from the Tennessee basin to the Metro Water district as a long term supply source	250	890	4 – 5	4 – 5	8 - 10
West Point Lake transfer	Transfers from West Point Lake to a new regional WTP located near Union City, Fulton County; Gwinnett obtains finished water from DeKalb and Fulton Counties' connections <sup>1</sup>	100	1,110	3 – 5	5	8 – 10

1. Interconnection costs not included; WTP – Water Treatment Plant

Backup

# Proposed transfer from Lake Burton to Gwinnett WTP



Source: Technical Advisory Panel  
 TF Mtg 2-final ppt

# Agenda

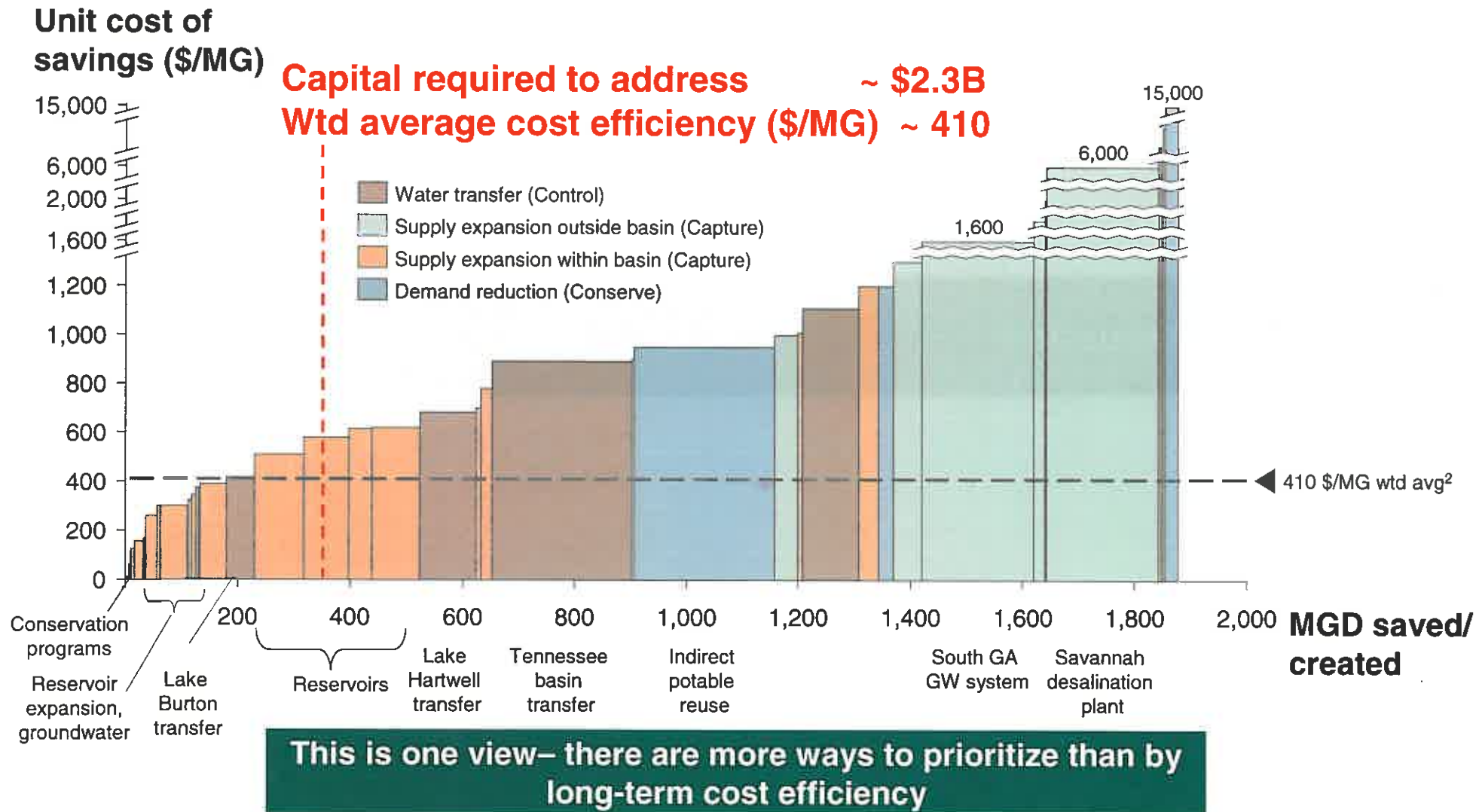
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**Prioritization discussion**

**Preliminary Estimates**

## Recap: 2020 solution view, ranked by cost efficiency

Once supply options come online, they offer long-term cost efficiency (for \$~2.3B Capital cost)

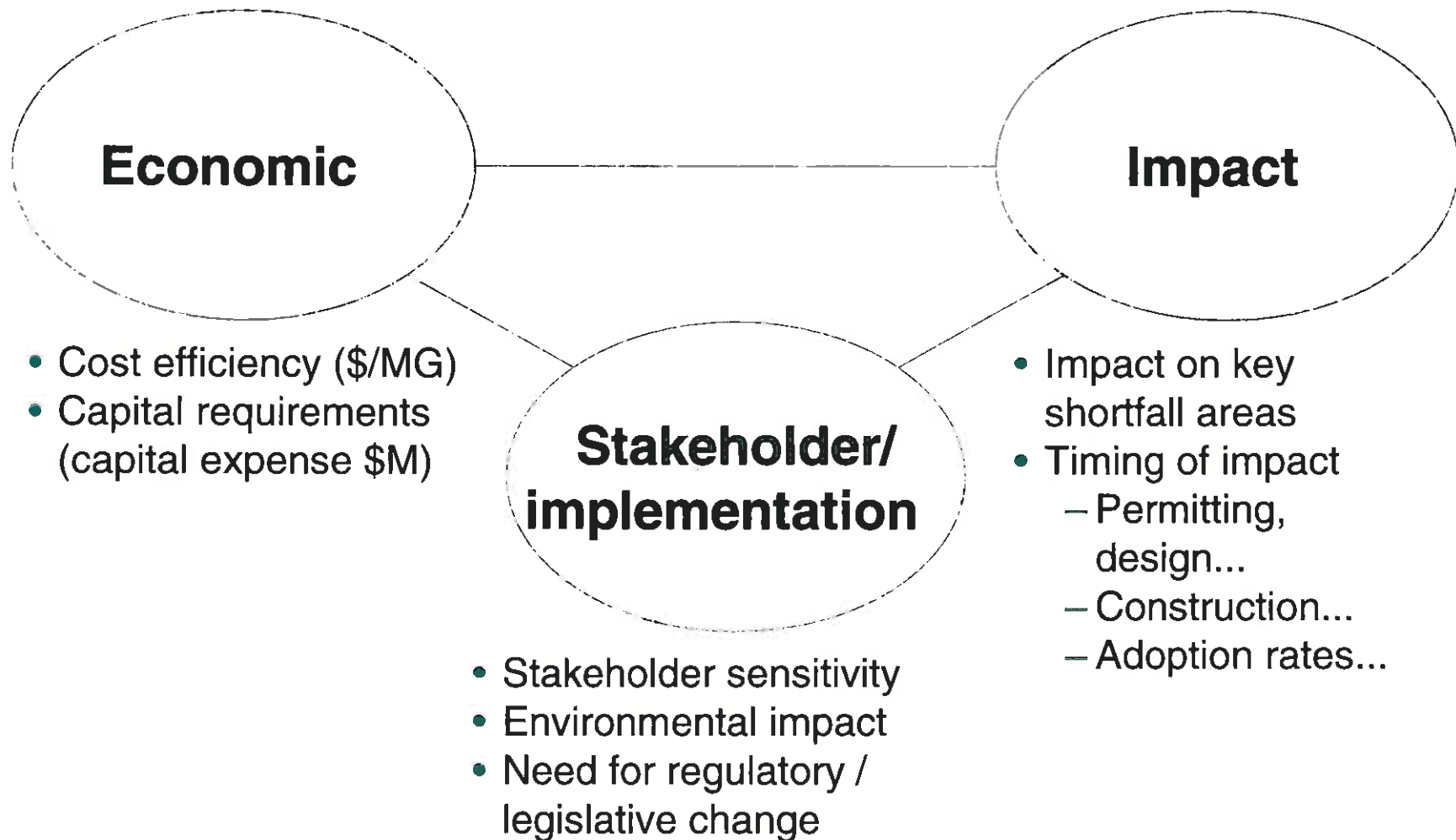


Source: Technical Advisor Panel preliminary estimates

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# Variety of criteria can be used in evaluating options

Economic and non-economic in nature



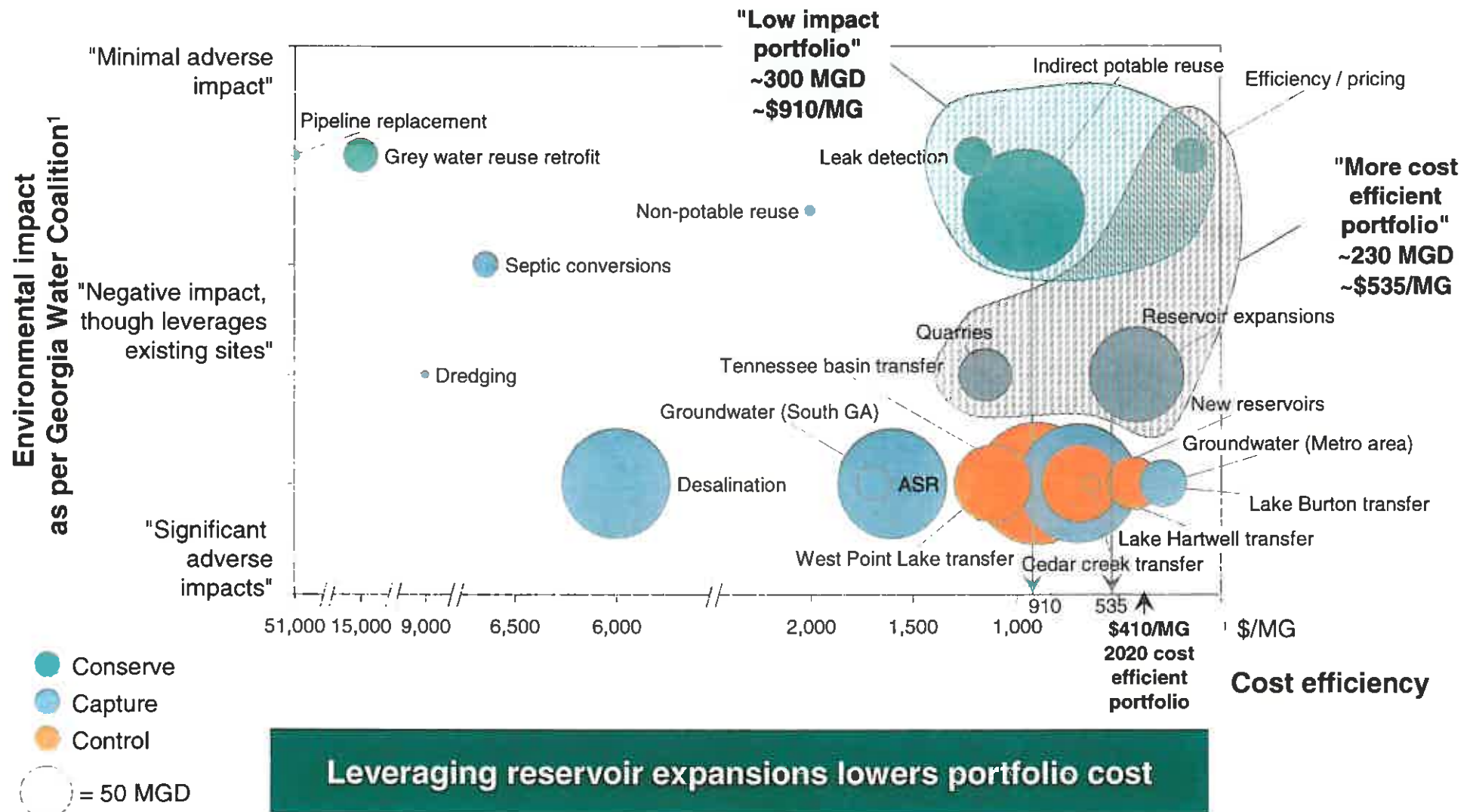
**Initial analysis has focused on economics and impact**

# Taskforce staff solicited Georgia Water Coalition assistance in rating environmental impacts

Type of option	Environmental impact —Georgia Water Coalition perspective <sup>1</sup>
• Conservation options	• "Green" — minimal adverse impact
• Septic to sewer transition	• "Yellow" — impact is site dependent
• Reservoir expansions • Existing Quarries	• "Orange" — but should be considered before other new supply alternatives, as these leverage existing sites for storage
• New reservoirs • Groundwater/ASR • Desalination • Interbasin transfers	• "Red" — significant adverse impacts

1. These categorizations are for generic types of options; this does not incorporate site specific factors, which must be assessed to determine actual environmental impacts  
Source: Georgia Water Coalition, as defined in Task Force Staff workshops






# Contrasting options' environmental/societal impact with cost efficiency highlights key tradeoffs



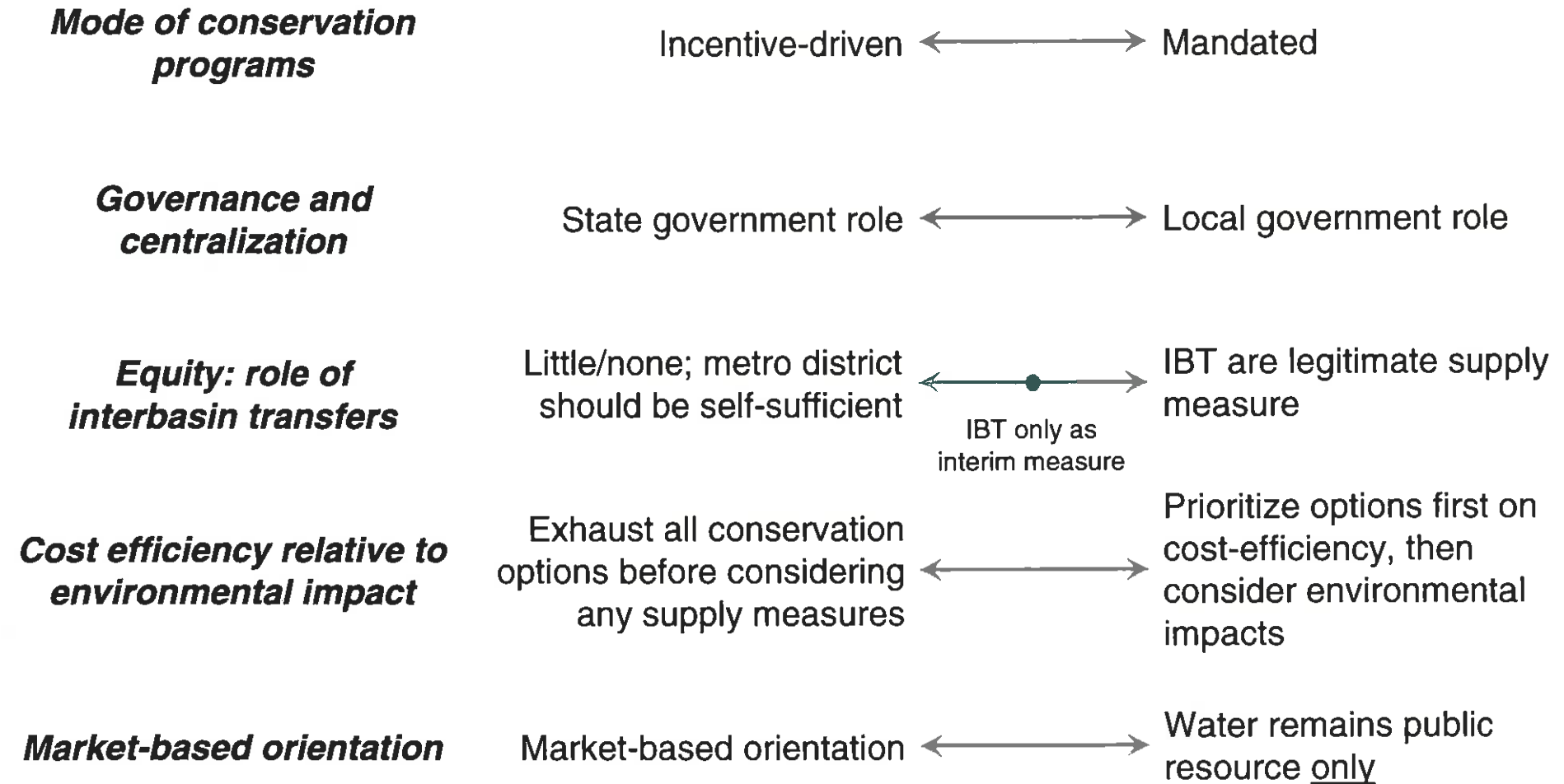
1. These categorizations are for generic types of options; this does not incorporate site specific factors, which must be assessed to determine actual environmental impacts  
 Source: Georgia Water Coalition, as defined in Task Force Staff workshops  
 TF Mtg 2-final.ppt

# A number of stakeholder sensitivities identified

Factors into option evaluation

Stakeholder group	Examples of sensitivities identified (not exhaustive)
Water providers	 <ul style="list-style-type: none"> <li>• Revenue sensitivity to reduced consumption- while bearing costs of additional programs...</li> </ul>
Industry associations	 <ul style="list-style-type: none"> <li>• Revenue models possibly challenged by conservation mandates/restrictions...</li> <li>• Current outlook and future growth challenged by perception of water crisis</li> </ul>
Downstream communities	 <ul style="list-style-type: none"> <li>• Assurance of sufficient flows and water quality...</li> </ul>
Citizens	 <ul style="list-style-type: none"> <li>• Sensitivity to water rates, use of tax dollars...</li> <li>• Future quality of life, real estate values...</li> </ul>
Conservation groups	 <ul style="list-style-type: none"> <li>• Preserving ecological health and minimizing ecosystem impacts of new supply sources...</li> <li>• Ensuring demand management is pursued aggressively...</li> </ul>

# Addressing shortfalls requires prioritization between competing principles



# Agenda

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**Next steps: collecting your feedback**

## Overview of next steps

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**Task Force members to complete survey regarding your comments and your level of support for potential options**

- Please do refer to appendix (which you'll receive via email) as needed
  - this has ~100 pages of detail regarding the various options and their cost and yield estimates

**Task Force staff to conduct follow-up with members on key questions**

**Optional November 30th meeting a forum for comments and questions- intent is to ensure you understand potential options and have an opportunity to ask follow-up questions**

**11 December Task Force meeting to review updated options, following any refinements**

**Critical to get your input- questions, comments, and your degree of support for options**

# Concept of the Task Force Member input collection survey

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**We will ask Task Force members to provide feedback on three related topics**

- 1. View on key principles of prioritization**
- 2. Level of support for and commentary regarding overall 2020 option portfolio shown today (page 14) and 2015 portfolio (page 17)**
- 3. Level of support per option, and whether you would support option even if reauthorization were obtained**

**We'll use this information to identify areas of consensus and areas of divergence and to focus our efforts in the coming weeks**

**Background information on options will be provided in survey to provide context**

- eg, Option description, yield, \$/MG cost effectiveness, capital expense (\$M), and impact timing
- Options will be presented in the same sequence as in the pre-read materials, additionally

**Survey available tomorrow, with due date of December 2.**

- You have option to complete right away or ask further questions, attend 30 Nov session, etc

# Task Force member survey: *Illustration*

Finally, we'd like to understand your level of support for specific options. The following four pages list the options discussed during Task Force Meeting #2 (grouped by Conserve, Capture (2 pgs), and Control categories).

Listed with each option you will find basic information regarding yield, cost, and timing estimates. Please refer to your handout from the Task Force Meeting for a more complete description and/or additional information for each option as required.

In the space provided, please indicate your level of "support for" or "opposition to" each option by choosing the appropriate button. Additionally, check the box if you would support implementing this option even if GA were to obtain Lake Lanier reauthorization. You may include comments or concerns as desired in the free text space to the far right.

## Conserve

	Level of support or opposition?					Would support even with Lanier reauthorization? (Check if "yes")	Comments
	Strongly opposed to option implementation	Somewhat opposed	Neutral/ indifferent	Somewhat support	Strongly support option implementation		
<b>Toilet retrofits</b> Yield: 1.4 MGD Cost efficiency: \$375/MG Capital cost: \$25M Timing: 1 yrs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<div><div></div><div></div></div>
<b>Showerheads and faucets</b> Yield: 1.2 MGD Cost efficiency: \$300/MG Capital cost: \$8M Timing: 1 yrs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<div><div></div><div></div></div>
<b>Residential clothes washers</b> Yield: 0.6 MGD Cost efficiency: \$1,050/MG Capital cost: \$14M Timing: 1 yrs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<div><div></div><div></div></div>
<b>Multi family sub-metering</b> Yield: 1.7 MGD Cost efficiency: \$165/MG Capital cost: \$6M Timing: 1 yrs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<div><div></div><div></div></div>
<b>Spray rinse valves</b> Yield: 0.3 MGD Cost efficiency: \$115/MG Capital cost: \$1M	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	<div><div></div><div></div></div>

# What are your questions?

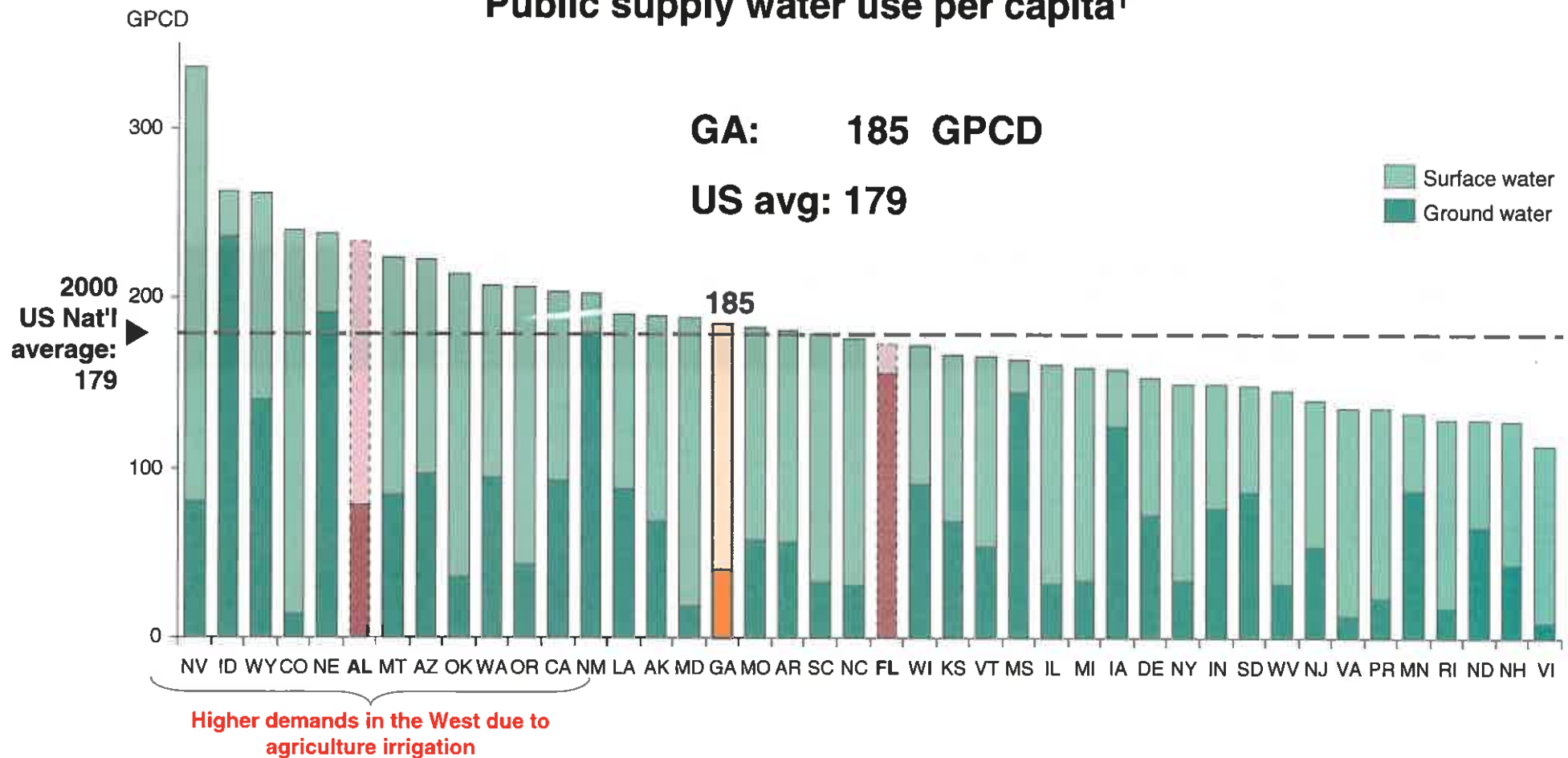
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**Backup: Selected factbase pages (for reference)**

# GA public supply use was slightly above average in 2000

Public supply water use per capita<sup>1</sup>



1. Per capita water consumption = consumption of total public supply water divided by # of people served by public supply water in state

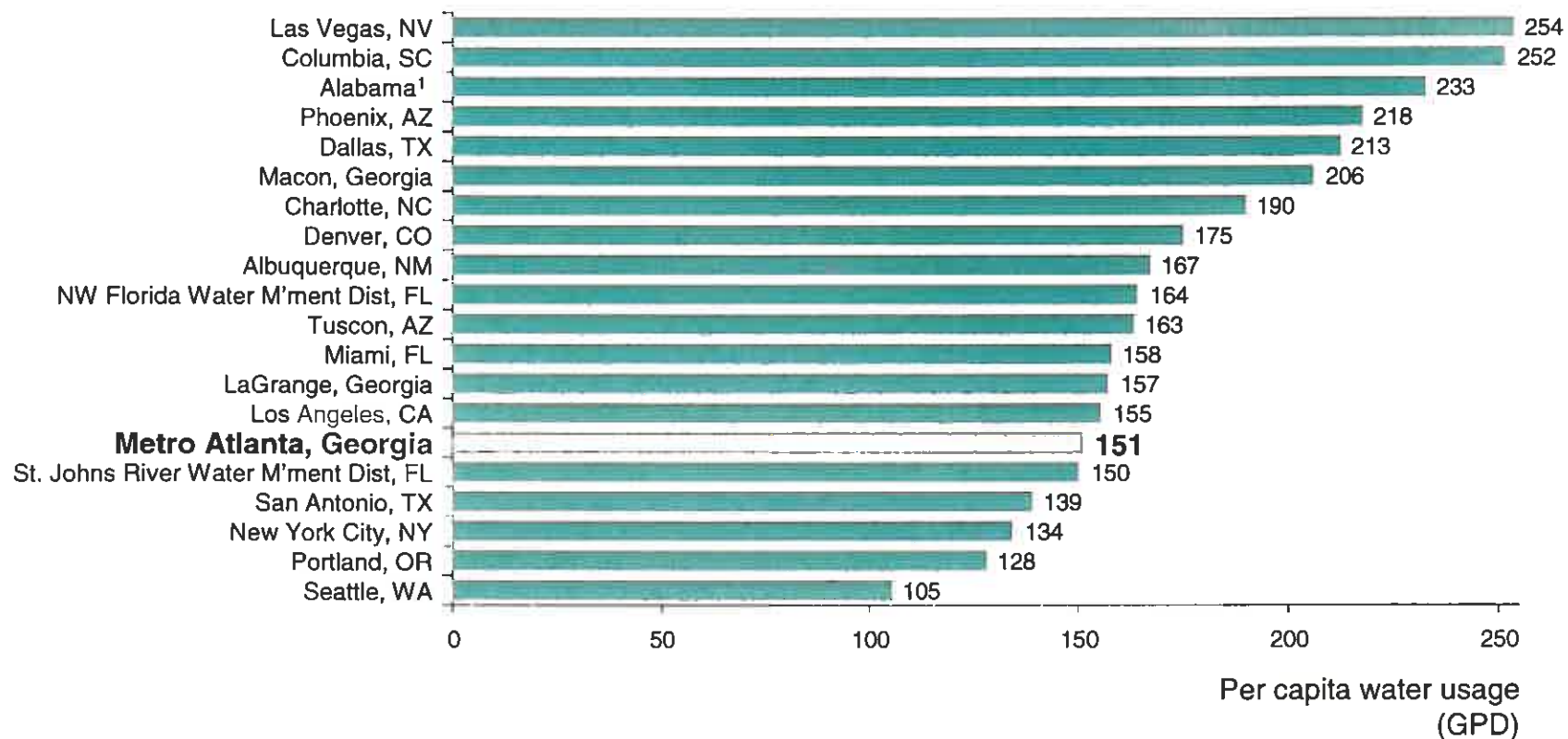
Note: Public supply refers to water withdrawn by public and private water suppliers for domestic, commercial, industrial, or thermoelectric-power purposes

Source: US Geological Survey 2000 data

TF Mtg 2-final ppt

# Water usage in Metro Atlanta lower than many metro cities across the US in study by Georgia EPD

## Georgia EPD report overall per capita public supply water use across metro cities in gallons per capita per day



1. State average; data not available for individual cities in AL

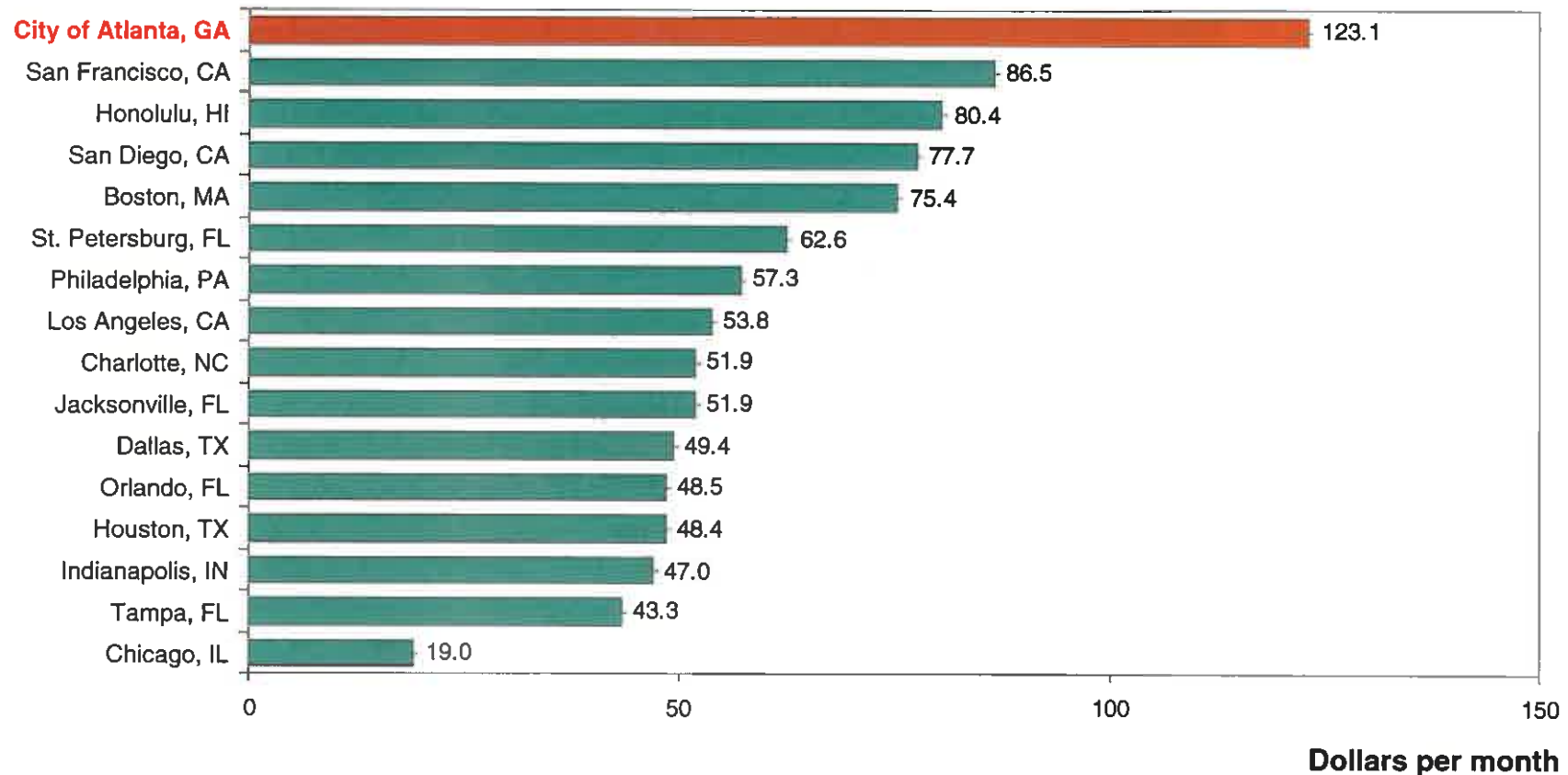
Note: Overall per capita is calculated by dividing total gallons of water produced by water provider by the population served

Source: Georgia EPD analysis

TF Mtg 2-final ppt

# Residential water and wastewater rates in City of Atlanta are significantly higher than other US cities

**Residential Water and Wastewater combined monthly charge for consumption of 6,750 Gallons per month**

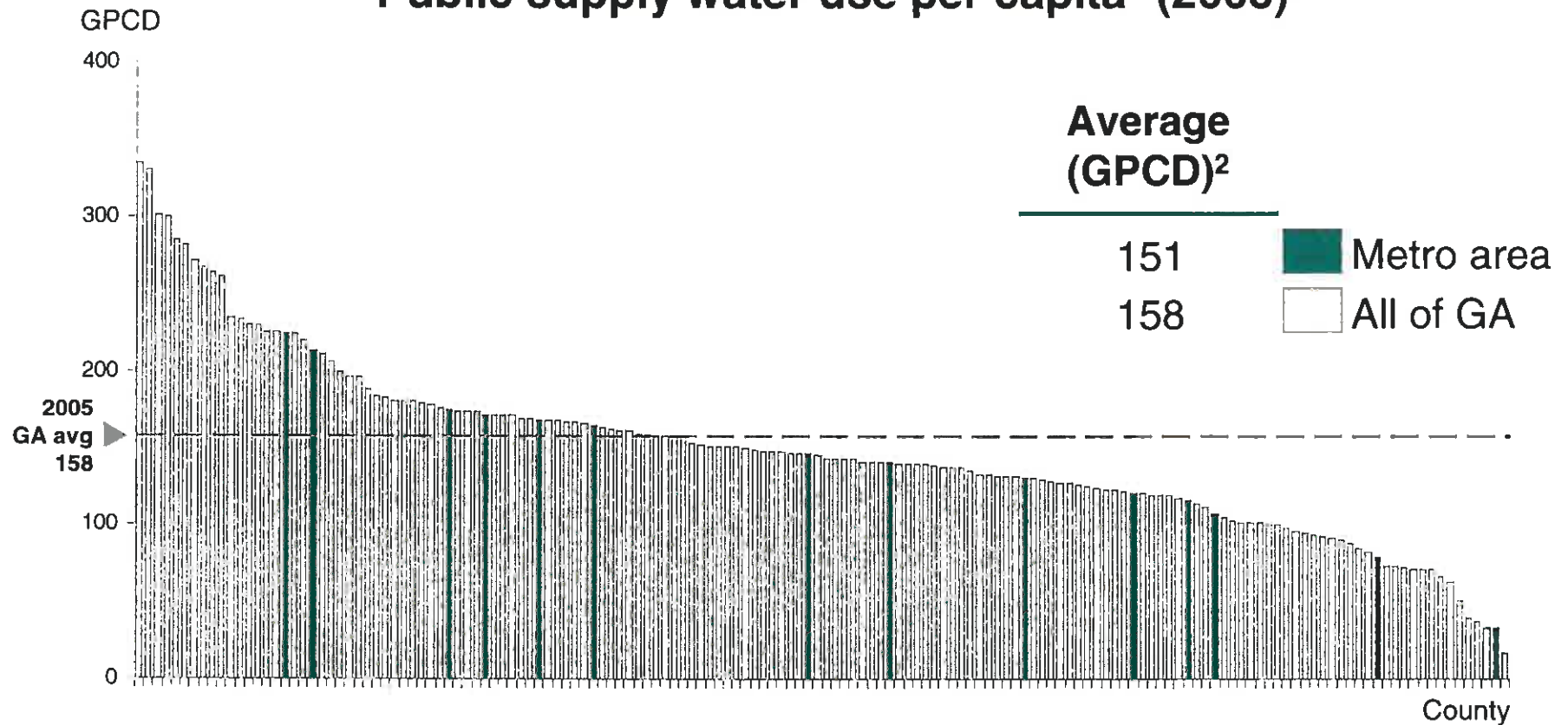


Source: Miami Dade County Water & Sewer Department (WASD), 2008

TF Mtg 2-final ppt

# Large variation in public supply use among GA counties

## Public supply water use per capita<sup>1</sup> (2005)

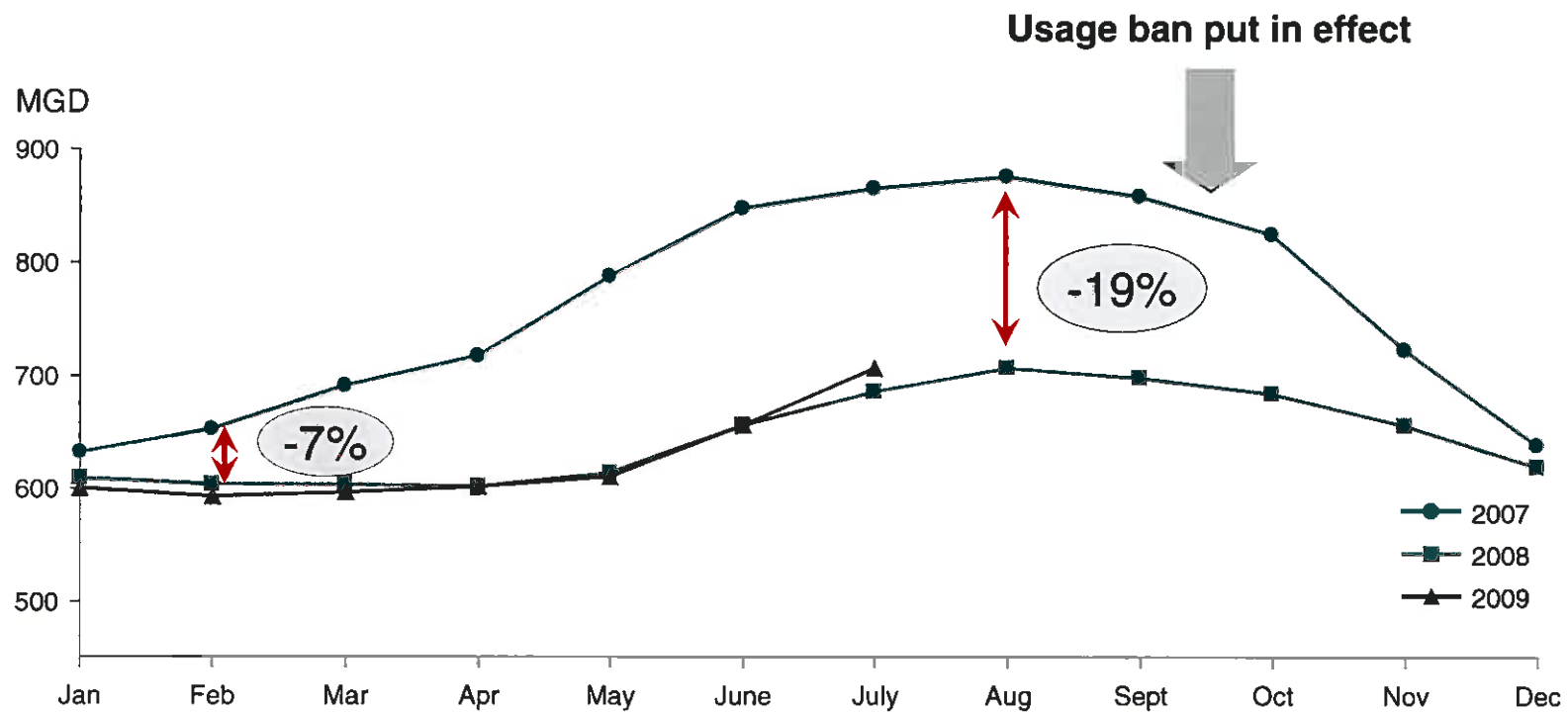


1. "Public supply" use divided by population served by public supply, by county 2. Metro average reported in Metro Water Plan, May 2009 and by EPD; GA average reported by USGS Source: USGS "Water Use in Georgia by County for 2005; and Water-Use Trends, 1980–2005"; Metro North GA Water Supply and Water Conservation Management Plan (May 2009)

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# Substantial usage reduction achieved in 2008 and 2009

## GA EPD usage data from former 55 county Level 4 drought response area<sup>1</sup>



1. Values shown are 3-month rolling average withdrawals

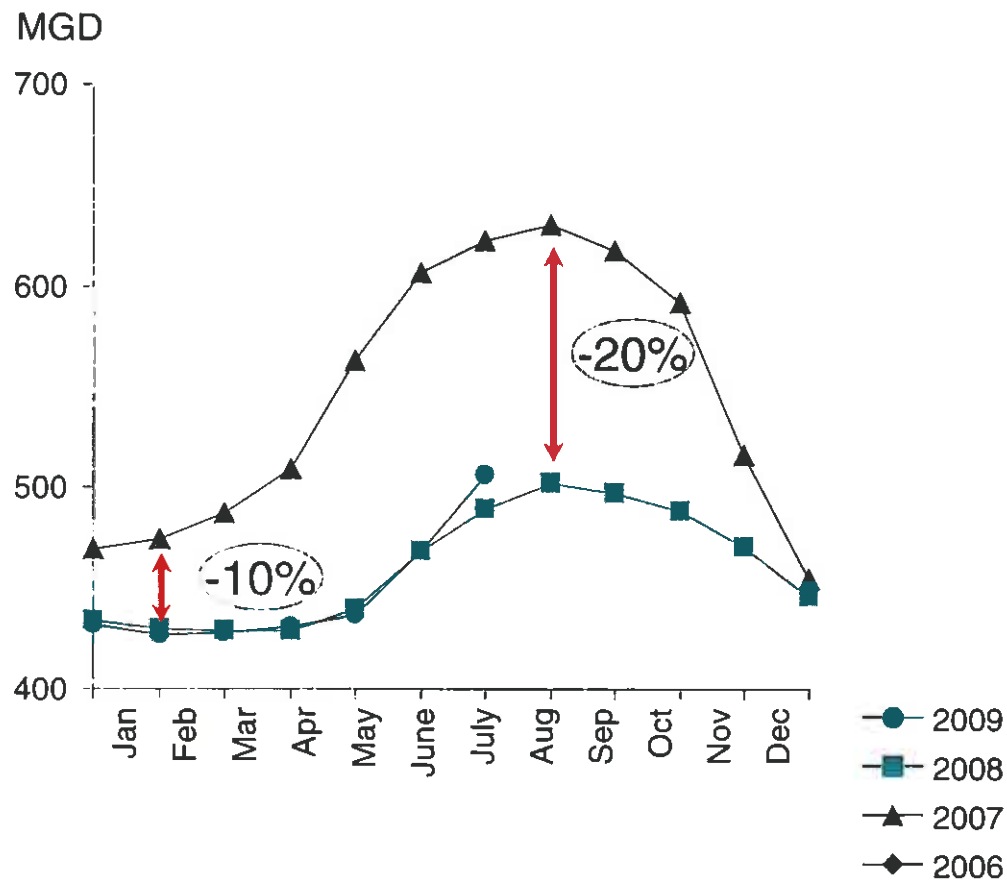
Note: Data shows total withdrawals by county by month (to include all end uses); analysis shown for 55 county area due to data availability

Source: GA EPD data

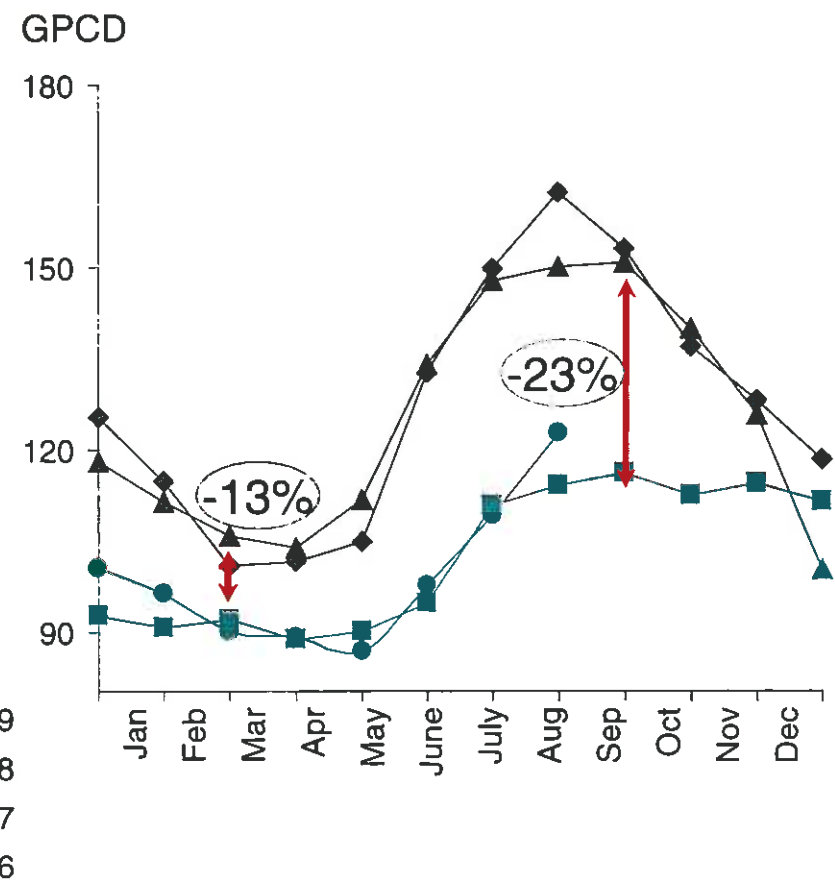
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## Slightly higher reductions achieved in Metro area counties

**GA EPD data for  
15 Metro ATL counties**



**Cobb County usage data  
(per capita)**



Note: Analysis shown for 55 county area due to data availability; 3-month rolling average per capita use shown  
Source: GA EPD data from former 55 county Level 4 drought response area; Cobb County Water System data

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## Appendix

# A special thanks to Technical Advisors who donated their time and resources to the Task Force

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- **AECOM**
- **Arcadis**
- **Brown and Caldwell**
- **CH2M Hill**
- **Golder & Associates**
- **Jordan Jones and Goulding**
- **MACTEC Engineering in partnership with Tanner and Associates, Tommy Craig, Schnabel Engineering and B&E Jackson Engineers**
- **Post Buckley Shue & Jernigan**
- **University of North Carolina Environmental Finance Center**

and

- **The Boston Consulting Group (Atlanta office) for coordination of Technical Advisor Teams and overall process facilitation**

## Ability to close gap

# How to interpret the supply gap

## Interpretation of overall gap value

**Total gap- sum of deficit counties- would be ~280 MGD. Net gap of ~250 would assume that the “surplus” water could serve deficit counties**

- This would require infrastructure that may not currently be in place and may require resolution of water treatment issues to ensure that blended water supplies will meet all safe drinking water requirements

**Gap is expressed in AAD- Average Annual Day terms, not in peak terms**

- During high demand months, a 250 MGD gap is equivalent to a 300 MGD "peak month" gap (AAD gap \* 1.2 peaking factor)
- To ensure summer months are covered, critical areas need ~1.5x the AAD deficit

**Interpretation of ruling's 230 MGD river withdrawal limit is best estimate- ruling is not clear on this point**

## Interpretation of specific figures

**Surplus/Deficit per county would change if EPD permitted withdrawals were re-allocated**

- Lake dependant counties could share in river allocation, given some modification to withdrawal/storage/treatment infrastructure

**Cobb and Paulding figures are combined to avoid any assumption regarding Cobb's future water sales**

**Allatoona withdrawals are subject of current litigation, and are also subject to change**

**Preliminary Estimates**

# Detail of options for Metro District: shown on pgs 13 - 15 (I)

Option	Cost Efficiency (\$/MG)	Capital Cost (\$M)	Capital expense (\$/MG)	Operating expense (\$/MG)	Yield (MGD)	Timing	Type
Water restrictions	10	0	0	11	7	2012	Conserve
Rain sensors	60	6	48	12	3	2012	Conserve
Spray rinse valves	115	1	127	85	0.3	2012	Conserve
Conservation pricing	125	14	35	90	6	2012	Conserve
GW for non-potable use	155	8	29	126	15	2015	Capture
Multi family sub-metering	165	6	88	0	2	2012	Conserve
Cooling towers	170	6	137	55	3	2012	Conserve
Tussahaw Creek reservoir expansion	260	64	175	85	20	2020	Capture
Lawrenceville GW system	300	5	46	254	6	2015	Capture
Dog river reservoir expansion	300	230	263	37	48	2020	Capture
Showerheads and faucets	300	8	636	424	1	2012	Conserve
Spalding county GW system	325	7	64	261	6	2015	Capture
Bartow county GW system	345	11	86	259	7	2015	Capture
Suwanee GW system	375	10	110	265	5	2015	Capture
Palmetto GW system	375	3	82	293	2	2015	Capture
Toilet retrofits	375	25	1,493	204	1	2012	Conserve
Big Haynes Creek reservoir expansion	390	270	315	75	47	2020	Capture
Lake Burton transfer	417	362	397	20	50	2020	Control
Generic Forsyth reservoir	510	660	411	99	88	2020	Capture
Richland creek reservoir (larger)	580	620	425	155	80	2020	Capture
Etowah River Dam No. 1 reservoir expansion	615	350	468	147	41	2020	Capture
Glades reservoir	620	800	516	104	85	2020	Capture

**Yield: ~400 MGD**  
**Capital expense: \$2.3B**  
**Wtd. Avg. \$/MG: ~410**

Note: Expected 2020 yield is shown for conservation options  
Source: Technical Advisor Panel estimates

## Detail of options for Metro District: shown on pgs 13 - 15 (II)

Option	Cost Efficiency (\$/MG)	Capital Cost (\$M)	Capital expense (\$/MG)	Operating expense (\$/MG)	Yield (MGD)	Timing	Type
Lake Hartwell transfer	683	1,108	607	76	100	2020	Control
Fulton Bear Creek reservoir	700	95	578	122	9	2020	Capture
Richland creek reservoir (planned)	725	340	532	193	35	2020	Capture
Indirect potable reuse (6 county)	950	2,800	610	340	252	2015	Conserve
Newton Bear Creek reservoir	780	225	616	164	20	2020	Capture
Tennessee basin transfer	893	2,193	481	412	250	2020	Control
Lawrenceville ASR	900	19	260	640	4	2015	Capture
Hard Labor Creek reservoir	1,000	625	835	165	41	2020	Capture
Small Quarry	1,010	95	651	359	15	2015	Capture
Residential clothes washers	1,050	14	107	72	1	2012	Conserve
West Point Lake transfer	1,110	1,203	659	451	100	2020	Control
Large Quarry	1,200	750	1,174	26	35	2015	Capture
Leak detection	1,200	17	69	1,131	27	2012	Conserve
Generic Gwinnett reservoir	1,300	965	1,058	242	50	2020	Capture
South GA GW system	1,600	2,650	726	874	200	2020	Capture
Direct potable reuse	1,700	5,600	1,218	482	252	2015	Conserve
Floyd/Bartow ASR	1,840	450	1,233	607	20	2015	Capture
Non-potable reuse	2,000	111	2,027	0	3	2015	Conserve
Savannah desalination plant	6,000	13,730	3,762	2,238	200	2020	Capture
Gwinnett septic conversion	6,600	480	5,260	1,354	5	2020	Capture
Forsyth septic conversion	6,600	336	6,137	477	3	2020	Capture
Hall septic conversion	6,700	408	5,589	1,104	4	2020	Capture
Dredging Morgan Falls	TBD	TBD	TBD	TBD	TBD	2020	Capture
Grey water reuse retrofit	15,000	3,300	7,862	7,138	23	2012	Conserve
Pipeline replacement	51,000	1,184	51,000	0	3	2012	Conserve

Note: Expected 2020 yield is shown for conservation options

Source: Technical Advisor Panel estimates

## Detail of options for 2012 Metro District: shown on pg 16

Option	Cost Efficiency (\$/MG)	Capital Cost (\$M)	Capital expense (\$/MG)	Operating expense (\$/MG)	Yield (MGD)	Type
Water restrictions	10	0	0	11	5	Conserve
Rain sensors	60	6	48	12	5	Conserve
Spray rinse valves	115	1	127	85	0.7	Conserve
Conservation pricing	125	14	35	90	6	Conserve
Multi family sub-metering	165	6	88	0	2	Conserve
Cooling towers	170	6	137	55	3	Conserve
Showerheads and faucets	300	8	636	424	3	Conserve
Toilet retrofits	375	25	1,493	204	2	Conserve
Residential clothes washers	1,050	14	107	72	0.2	Conserve
Leak detection	1,200	17	69	1,131	9	Conserve
Grey water reuse retrofit	15,000	3,300	7,862	7,138	5	Conserve
Pipeline replacement	51,000	1,184	51,000	0	1	Conserve

Source: Technical Advisor Panel estimates

144200-01 TF Mtg 2-23 Nov-v22.ppt

# Detail of options for 2015 Metro District: shown on pg 17

Option	Cost Efficiency (\$/MG)	Capital Cost (\$M)	Capital expense (\$/MG)	Operating expense (\$/MG)	2015 District Yield	Type
Water restrictions	10	0	0	11	6	Conserve
Rain sensors	60	6	48	12	4	Conserve
Spray rinse valves	115	1	127	85	0.5	Conserve
Conservation pricing	125	14	35	90	6	Conserve
GW for non-potable use	155	8	29	126	15	Capture
Multi family sub-metering	165	6	88	0	2	Conserve
Cooling towers	170	6	137	55	3	Conserve
Lawrenceville GW system	300	5	46	254	6	Capture
Showerheads and faucets	300	8	636	424	2	Conserve
Spalding county GW system	325	7	64	261	6	Capture
Bartow county GW system	345	11	86	259	7	Capture
Suwanee GW system	375	10	110	265	5	Capture
Palmetto GW system	375	3	82	293	2	Capture
Toilet retrofits	375	25	1,493	204	2	Conserve
Lawrenceville ASR	900	19	260	640	4	Capture
Indirect potable reuse (6 county)	950	2,800	610	340	252	Conserve
Small Quarry	1,010	95	651	359	8	Capture
Residential clothes washers	1,050	14	107	72	0.4	Conserve
Large Quarry	1,200	750	1,030	170	35	Capture
Leak detection	1,200	17	69	1,131	18	Conserve
Direct potable reuse	1,700	5,600	1,218	482	252	Conserve
Floyd/Bartow ASR	1,840	450	1,233	607	20	Capture
Non-potable reuse	2,000	111	2,027	0	3	Conserve
Grey water reuse retrofit	15,000	3,300	7,862	7,138	23	Conserve
Pipeline replacement	51,000	1,184	51,000	0	2	Conserve

Yield: ~330 MGD  
Capital cost: \$3.0B  
Wtd. Avg. \$/MG: 800

Source: Technical Advisor Panel estimates

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# Overview of key options: Conserve

## Conserve

- **Conservation efficiency programs (eg, fixture retrofits)**
- Reuse
- Pricing
- Loss Reduction

# Efficiency measures considered (I)

	Measures	Method of Implementation	Rationale	Key Challenges	Timing
1a	Toilet retrofits	Increased incentive rebate program	<ul style="list-style-type: none"> <li>Provide consumer with choice to participate in program</li> </ul>	<ul style="list-style-type: none"> <li>Ensuring compliance with program and whether rebate increase will achieve anticipated increase in participation</li> </ul>	3 year program, 100% completion by 2012
		Direct install program	<ul style="list-style-type: none"> <li>Optimize penetration in market</li> </ul>	<ul style="list-style-type: none"> <li>Added enforcement cost to utility to ensure compliance with program</li> </ul>	
		Retrofit on resale	<ul style="list-style-type: none"> <li>Expedite adoption rate via resale market and optimize penetration</li> </ul>	<ul style="list-style-type: none"> <li>Utility liability for direct installs</li> <li>Objection from home owners needing to retrofit homes prior to sale</li> </ul>	
1b	Showerheads and faucets	Increased incentive rebate program	<ul style="list-style-type: none"> <li>Provide consumer with choice to participate in program</li> </ul>	<ul style="list-style-type: none"> <li>Ensuring compliance with program and whether rebate increase will achieve anticipated increase in participation</li> </ul>	3 year program, 100% completion by 2012
		Direct install program	<ul style="list-style-type: none"> <li>Optimize penetration in market</li> </ul>	<ul style="list-style-type: none"> <li>Added enforcement cost to utility to ensure compliance with program</li> <li>Utility liability for direct installs</li> </ul>	
1c	Residential clothes washers	Washer rebate program	<ul style="list-style-type: none"> <li>Provide consumer with incentive to participate in program</li> </ul>	<ul style="list-style-type: none"> <li>Extremely difficult to get participation</li> <li>Added rebate cost to utility to provide increased incentive</li> </ul>	10 year program, ~30% completion by 2012
		Washer program with increased rebate	<ul style="list-style-type: none"> <li>Increase adoption rate and penetration in market</li> </ul>	<ul style="list-style-type: none"> <li>Ensuring compliance with program and whether rebate increase will achieve anticipated increase in participation</li> </ul>	
2a	Multi-family metering	Retrofit 50% of existing non-submetered complexes	<ul style="list-style-type: none"> <li>Retrofit existing homes in addition to new development to capture major savings</li> </ul>	<ul style="list-style-type: none"> <li>Ensuring compliance with program and whether rebate increase will achieve anticipated increase in participation</li> </ul>	3 year program, 100% completion by 2012
		Retrofit 100% of existing non-submetered complexes	<ul style="list-style-type: none"> <li>Optimize penetration in market</li> </ul>	<ul style="list-style-type: none"> <li>Objection from apartment complexes, building owners, and other stakeholders</li> </ul>	

## Efficiency measures considered (II)

Measures	Method of Implementation	Rationale	Key Challenges	Timing
3a Spray rinse valves	Valve rebate program	<ul style="list-style-type: none"> <li>Provide consumer with choice to participate in program</li> </ul>	<ul style="list-style-type: none"> <li>Ensuring compliance with program</li> </ul>	3 year program, 100% completion by 2012
	Direct install program	<ul style="list-style-type: none"> <li>Optimize penetration in market</li> <li>Improve business processes in long-term</li> </ul>	<ul style="list-style-type: none"> <li>Added enforcement cost to utility to ensure compliance with program</li> <li>Utility liability for direct installs</li> </ul>	
3b Cooling towers	Cooling tower audits	<ul style="list-style-type: none"> <li>Provide consumer with choice to participate in program</li> </ul>	<ul style="list-style-type: none"> <li>Added enforcement cost to utility to ensure compliance with program</li> </ul>	3 year program, 100% completion by 2012
	Cooling tower standards	<ul style="list-style-type: none"> <li>Optimize penetration in market</li> <li>Improve business processes in long-term</li> </ul>	<ul style="list-style-type: none"> <li>Utility liability for direct installs</li> <li>Objection from commercial community</li> </ul>	
4a Watering restrictions	No daytime watering	<ul style="list-style-type: none"> <li>Reduce discretionary outdoor water usage</li> </ul>	<ul style="list-style-type: none"> <li>Ensuring compliance with program</li> <li>Added enforcement cost to utility to ensure compliance with program</li> <li>Compromise on beautification of greenspace</li> </ul>	3 year program, 100% completion by 2012
	1 day/week schedule			
4b Rain sensor irrigation	Retrofit 25% of existing systems without rain sensors	<ul style="list-style-type: none"> <li>Retrofit existing irrigation systems in addition to new irrigation systems to capture more savings</li> </ul>	<ul style="list-style-type: none"> <li>Ensuring compliance with program</li> <li>Added enforcement cost to utility to ensure compliance with program</li> </ul>	3 year program, 100% completion by 2012
	Retrofit 50% of existing systems without rain sensors	<ul style="list-style-type: none"> <li>Increase penetration in market</li> </ul>		

# Cost/benefit estimates of water efficiency programs

		Incremental water savings to programs in current District Plan						
Measure	Method of Implementation	Penetration (%)	Yield in 2035 (MGD)	Yield in 2012 (MGD)	Total cost <sup>2</sup> (\$M)	Avg unit cost <sup>1</sup> (\$/MG)	Timing	
1a Toilet retrofits	Current rebate program (baseline)	10%	—	—	—	—	3 year implementation program	
	Increased incentive rebate program	20%	1.4	2.4	\$7.4	~ \$400		
	Direct install program	100%	12.5	13.5	\$69.3	~ \$350		
1b Showerheads and faucets	Current give-away program (baseline)	15%	—	—	—	—	3 year implementation program	
	Increased incentive rebate program	25%	1.2	2.5	\$3.7	~ \$350		
	Direct install program	100%	10.0	11.3	\$40.5	~ \$250		
1c Residential clothes washers	No current program (baseline)	0%	—	—	—	—	3 year implementation program	
	Washer rebate program	5%	0.6	0.2	\$12.4	~ \$1100		
	Increased washer rebates	15%	1.9	0.6	\$34.2	~ \$1000		
2a Multi-family metering	Current ordinance program (baseline)	0%	—	—	—	—	3 year implementation program	
	Retrofit 50% existing homes	50%	1.7	1.7	\$5.1	~ \$160		
	Retrofit 100% existing homes	100%	3.3	3.3	\$10.2	~ \$170		

1. Based upon 50 years of lifetime yield for all measures, yield by 2012 2. Total cost in 2010 dollars  
Source: Technical Advisory Panel analysis

# Cost/benefit estimates of water efficiency programs

		Incremental water savings to programs in current District Plan				Avg unit Cost (\$/MG)	Timing
Measure	Method of Implementation	Penetration (%)	Yield in 2035 (MGD)	Yield in 2012 (MGD)	Total cost <sup>2</sup> (\$M)		
3a	Spray rinse valves	Current education program (baseline)	10%	—	—	—	3 year implementation program
		Rebate program	25%	0.3	0.7	\$0.4	
		Direct install program	100%	1.8	2.2	\$3.0	
3b	Cooling towers	No current program (baseline)	0%	—	—	—	3 year implementation program
		Cooling tower audits	25%	2.7	2.7	\$8.4	
		Cooling tower standards	50%	5.4	5.4	\$16.8	
4a	Water restrictions	Current 3 days/week schedule (baseline)	0%	—	—	—	3 year implementation program
		No daytime watering	5%	7.2	4.9	\$1.5	
		1 day/week schedule	15%	21.5	14.6	\$3.0	
4b	Rain sensor irrigation	Current state law (baseline)	0%	—	—	—	3 year implementation program
		Retrofit 25% existing irrigation systems	25%	3.0	5.2	\$5.1	
		Retrofit 50% existing irrigation systems	50%	5.9	8.1	\$10.3	

1. Based upon 50 years of lifetime yield for all measures, yield by 2012 2. Total cost in 2010 dollars  
Source: Technical Advisory Panel analysis

# Detailed cost estimates of water efficiency programs

	Measure	Method of Implementation	Total cost		Incremental cost		
			Utility (\$M)	Customer (\$M)	Utility (\$M)	Capital cost (\$M)	Operating cost (\$M)
1a	Toilet retrofits	Current rebate program	\$22.3	\$47.0	-	-	-
		Increased incentive rebate program	\$29.7	\$51.7	\$7.4	\$6.5	\$0.9
		Direct install program	\$91.6	-	\$69.3	\$43.1	\$26.2
1b	Showerheads and faucets	Current give-away program	\$16.2	\$19.5	-	-	-
		Increased incentive rebate program	\$19.9	\$21.5	\$3.7	\$2.2	\$1.5
		Direct install program	\$56.7	-	\$40.5	\$15.8	\$24.7
1c	Residential clothes washers	No current program	-	-	-	-	-
		Washer rebate program	\$12.4	\$37.2	\$12.4	\$7.4	\$5.0
		Increased washer rebates	\$34.2	\$40.9	\$34.2	\$20.5	\$13.7
2a	Multi-family metering	Current ordinance program	-	-	-	-	-
		Retrofit 50% existing homes	\$5.1	\$0.2	\$5.1	\$4.1	\$1.0
		Retrofit 100% existing homes	\$10.2	\$0.4	\$10.2	\$8.2	\$2.0

Source: Technical Advisory Panel analysis

144200-01 TF Mtg 2-23 Nov-v22.ppt

## Detailed cost estimates of water efficiency programs

Measure	Method of Implementation	Total cost		Incremental cost		
		Utility (\$M)	Customer (\$M)	Utility (\$M)	Capital cost (\$M)	Operating cost (\$M)
3a	Spray rinse valves					
	Current education program	\$1.7	\$1.7	-	-	-
	Rebate program	\$2.0	\$2.0	\$0.4	\$0.2	\$0.2
	Direct install program	\$4.7	-	\$3.0	\$1.1	\$1.9
3b	Cooling towers					
	No current program	-	-	-	-	-
	Cooling tower audits	\$8.4	\$3.4	\$8.4	\$5.0	\$3.4
	Cooling tower standards	\$16.8	\$6.7	\$16.8	\$7.1	\$9.7
4a	Water restrictions					
	Current 3 days/week schedule	-	-	-	-	-
	No daytime watering	\$1.5	-	\$1.5	-	\$1.5
	1 day/week schedule	\$3.0	-	\$3.0	-	\$3.0
4b	Rain sensor irrigation					
	Current state law (baseline)	-	-	-	-	-
	Retrofit 25% existing irrigation systems	\$5.1	-	\$5.1	\$4.1	\$1.0
	Retrofit 50% existing irrigation systems	\$10.3	-	\$10.3	\$8.2	\$2.1

Source: Technical Advisory Panel analysis

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# Toilet retrofits (I)

Method of implementation: increased incentive rebate program

**Current plan in Metro District:** current implementation is 2% per year for 5 years at \$50 rebate,

Yield	Assumption		Value	Logic
	Usage in consumption category		58 MGD	680MGD*53%(residential)*80%(indoor)*20%(toilets)
	% addressable of total usage		40%	40% of housing stock contain 5 or 3.5 gpf toilets
	% savings from conservation program		60%	Switching to 1.6 gpf toilets provides ~60% reduction
	% targeted (incremental adoption rate)		10%	10% increase in adoption rate from current program
	= Water savings (MGD)		1.4 MGD	
Cost	Cost category		Cost (\$M)	Logic
	Utility	Rebate/incentives	\$6.5	Rebate of \$75/toilet, increase of \$25 (33% increase in rebate amount)
		Equipm't/installation	-	No equipment and installation cost for utility, born by customer
		Marketing /admin	\$0.9	12% admin cost of total cost to utility (8% + 4% contingency)
		Enforcement	-	No enforcement cost
		Cost to customer	\$4.7	Cost to customer to install toilets
	Total cost to utility:		\$7.4	
Stakeholder sensitivity	Stakeholder sensitivity	Reasons	Permits required	Requires legislation
	No significant sensitivities noted	Cost-effective measures with little negative societal/environmental impact	No	No

# Toilet retrofits (II)

Method of implementation: direct install program

**Current plan in Metro District:** current implementation is 2% per year for 5 years at \$50 rebate,

Yield	Assumption		Value	Logic	
	Usage in consumption category		58 MGD	680MGD*53%(residential)*80%(indoor)*20%(toilets)	
	% addressable of total usage		40%	40% of housing stock contain 5 or 3.5 gpf toilets	
	% savings from conservation program		60%	Switching to 1.6 gpf toilets provides ~60% reduction	
	% targeted (incremental adoption rate)		90%	90% increase in adoption rate from current program	
	= Water savings (MGD)		12.5MGD		
Cost	Cost category	Cost (\$M)	Logic		
	Utility	Rebate/incentives	-	No rebate cost provided	
		Equipm't/installation	\$43.1	Installation cost at \$125/install for utility (additional cost of \$75/toilet)	
		Marketing /admin	\$26.2	25% admin cost of total utility cost (20% + 5% contingency)	
		Enforcement	-	No enforcement cost	
		Cost to customer	-	No customer cost, utility carries all cost of program	
	Total cost to utility:		\$69.3		
Stakeholder sensitivity	Stakeholder sensitivity	Reasons	Permits required	Requires legislation	
	No significant sensitivities noted	Cost-effective measures with little negative societal/environmental impact	No	No	

# Showerheads and faucets (I)

Method of implementation: increased incentive rebate program

**Current plan in Metro District:** voluntary program at current implementation level of 15% over a 10-year program period

Yield	Assumption		Value	Logic	
	Usage in consumption category		118 MGD	680MGD*53%(residential)*80%(indoor)*41%(showerhead/faucet)	
	% addressable of total usage		40%	40% of housing stock contain 2 gpm showerhead/faucets	
	% savings from conservation program		25%	Switching to 1.5 gpm retrofits provides ~25% reduction	
	% targeted (incremental adoption rate)		10%	10% increase in adoption rate from current program	
	= Water savings (MGD)		1.2 MGD		
Cost	Cost category	Cost (\$M)	Logic		
	Utility	Rebate/incentives	\$2.2	Cost of \$20 credit on first month's bill per account	
		Equipm't/installation	-	No equipment or installation cost for utility, born by customer	
		Marketing /admin	\$1.5	40% admin cost of total utility cost (25%+15% contingency)	
		Enforcement	-	No enforcement cost	
	Cost to customer		\$2.0	Cost to customer to retrofit showerheads and faucets	
	Total cost to utility:		\$3.7		
Stakeholder sensitivity	Stakeholder sensitivity	Reasons		Permits required	Requires legislation
	No significant sensitivities noted	Cost-effective measures with little negative societal/environmental impact		No	No

# Showerheads and faucets (II)

Method of implementation: direct install program

**Current plan in Metro District:** voluntary program at current implementation level of 15% over a 10-year program period

Yield	Assumption		Value	Logic	
	Usage in consumption category		118 MGD	680MGD*53%(residential)*80%(indoor)*41%(showerhead/faucet)	
	% addressable of total usage		40%	40% of housing stock contain 2 gpm showerhead/faucets	
	% savings from conservation program		25%	Switching to 1.5 gpm retrofits provides ~25% reduction	
	% targeted (incremental adoption rate)		85%	85% increase in adoption rate from current program	
	= Water savings (MGD)		10 MGD		
Cost	Cost category	Cost (\$M)	Logic		
	Utility	Rebate/incentives	-	No rebate cost provided	
		Equipm't/installation	\$24.7	Installation at \$45/install for utility, plus \$20 credit on customer first month bill	
		Marketing /admin	\$15.8	50% admin cost of total utility cost	
		Enforcement	-	No enforcement cost	
		Cost to customer	-	No customer cost, utility carries all cost of program	
	Total cost to utility:		\$40.5		
Stakeholder sensitivity	Stakeholder sensitivity	Reasons	Permits required	Requires legislation	
	No significant sensitivities noted	Cost-effective measures with little negative societal/environmental impact	No	No	

# Residential clothes washers (I)

Method of implementation: washer rebate program

**Current plan in Metro District:** no current program

Yield	Assumption		Value	Logic	
	Usage in consumption category		52 MGD	680MGD*53%(residential)*80%(indoor)*18%(laundry)	
	% addressable of total usage		60%	60% of housing stock contains high usage washers	
	% savings from conservation program		40%	Switching to efficient washers provides ~40% reduction	
	% targeted (incremental adoption rate)		5%	5% increase in adoption rate from current program	
	= Water savings (MGD)		0.6 MGD		
Cost	Cost category	Cost (\$M)	Logic		
	Utility	Rebate/incentives	\$7.4	Cost of \$100 per rebate	
		Equipm't/installation	-	No equipment or installation cost for utility, born by customer	
		Marketing /admin	\$5.0	40% admin cost of total utility cost (25% + 15% contingency)	
		Enforcement	-	No enforcement cost	
	Cost to customer		\$37.2	Total cost of washer at \$300 each, additional cost to customer = \$200 each	
	Total cost to utility:		\$12.4		
Stakeholder sensitivity	Stakeholder sensitivity	Reasons		Permits required	Requires legislation
	No significant sensitivities noted	Cost-effective measures with little negative societal/environmental impact		No	No

# Residential clothes washers (II)

Method of implementation: increased washer rebate program

**Current plan in Metro District:** no current program

Yield	Assumption		Value	Logic	
	Usage in consumption category		52 MGD	680MGD*53%(residential)*80%(indoor)*18%(laundry)	
	% addressable of total usage		60%	60% of housing stock contains high usage washers	
	% savings from conservation program		40%	Switching to efficient washers provides ~40% reduction	
	% targeted (incremental adoption rate)		15%	15% increase in adoption rate from current program	
	= Water savings (MGD)		1.9 MGD		
Cost	Cost category	Cost (\$M)	Logic		
	Utility	Rebate/incentives	\$20.5	Cost of \$200 per rebate	
		Equipm't/installation	-	No equipment or installation cost for utility, born by customer	
		Marketing /admin	\$13.7	40% admin cost of total utility cost (25% + 15% contingency)	
		Enforcement	-	No enforcement cost	
	Cost to customer		\$40.9	Total cost of washer at \$300 each, additional cost to customer = \$100 each	
	Total cost to utility:		\$34.2		
Stakeholder sensitivity	Stakeholder sensitivity	Reasons		Permits required	Requires legislation
	No significant sensitivities noted	Cost-effective measures with little negative societal/environmental impact		No	No

# Multi-family sub-metering (I)

Method of implementation: retrofit 50% of remaining non-submetered homes

**Current plan in Metro District:** current program is local ordinance to install sub-meters in all new multi-family buildings

Yield	Assumption		Value	Logic	
	Usage in consumption category		88 MGD	680MGD*13%(multi-family)	
	% addressable of total usage		25%	25% of buildings not sub-metered	
	% savings from conservation program		15%	Switching to submetering provides ~15% reduction	
	% targeted (incremental adoption rate)		50%	50% increase in adoption rate from current program	
	= Water savings (MGD)		1.7 MGD		
Cost	Cost category	Cost (\$M)	Logic		
	Utility	Rebate/incentives	-	No cost of rebate	
		Equipm't/installation	\$4.1	Retrofit cost of \$50,000 per complex (with replacement every 15 years)	
		Marketing /admin	\$1.0	20% admin cost of total utility cost (15% + 5% contingency)	
		Enforcement	-	No enforcement cost	
		Cost to customer	\$0.2	Customer cost of \$2,500 per complex	
	Total cost to utility:		\$5.1		
Stakeholder sensitivity	Stakeholder sensitivity	Reasons	Permits required	Requires legislation	
	No significant sensitivities noted	Cost-effective measures with little negative societal/environmental impact	No	No	

# Multi-family sub-metering (II)

Method of implementation: retrofit 100% of remaining non-submetered homes

**Current plan in Metro District:** current program is local ordinance to install sub-meters in all new multi-family buildings

Yield	Assumption		Value	Logic	
	Usage in consumption category		88 MGD	680MGD*13%(multi-family)	
	% addressable of total usage		25%	25% of buildings not sub-metered	
	% savings from conservation program		15%	Switching to submetering provides ~15% reduction	
	% targeted (incremental adoption rate)		100%	100% increase in adoption rate from current program	
	= Water savings (MGD)		3.3 MGD		
Cost	Cost category	Cost (\$M)	Logic		
	Utility	Rebate/incentives	-	No cost of rebate	
		Equipm't/installation	\$8.2	Retrofit cost of \$50,000 per complex (with replacement every 15 years)	
		Marketing /admin	\$2.0	20% admin cost of total utility cost (15% + 5% contingency)	
		Enforcement	-	No enforcement cost	
		Cost to customer	\$0.4	Customer cost of \$2,500 per complex	
	Total cost to utility:		\$10.2		
Stakeholder sensitivity	Stakeholder sensitivity	Reasons	Permits required	Requires legislation	
	No significant sensitivities noted	Cost-effective measures with little negative societal/environmental impact	No	No	

# Spray rinse valves (I)

Method of implementation: increased incentive rebate program

**Current plan in Metro District:** current education program only, with an implementation level of ~10% over a 10-year program

Yield	Assumption		Value	Logic	
	Usage in consumption category		14 MGD	680MGD*25%(commercial)*80%(indoor)*10% (rinsing usage)	
	% addressable of total usage		40%	40% of commercial kitchens/restaurants eligible	
	% savings from conservation program		35%	Switching to pre-rinse spray valves provides ~35% reduction	
	% targeted (incremental adoption rate)		15%	15% increase in adoption rate from current program	
	= Water savings (MGD)		0.3 MGD		
Cost	Cost category		Cost (\$M)	Logic	
	Utility	Rebate/incentives	\$0.2	Rebate of \$50/valve	
		Equipm't/installation	-	No equipment and installation cost for utility, born by customer	
		Marketing /admin	\$0.2	40% admin cost of total cost to utility	
		Enforcement	-	No enforcement cost	
	Cost to customer		\$0.3	Cost to customer to install spray rinse valves	
	Total cost to utility:		\$0.4		
Stakeholder sensitivity	Stakeholder sensitivity	Reasons		Permits required	Requires legislation
	No significant sensitivities noted	Cost-effective measures with little negative societal/environmental impact		No	No

# Spray rinse valves (II)

Method of implementation: direct install program

**Current plan in Metro District:** current education program only, with an implementation level of ~10% over a 10-year program

Yield	Assumption		Value	Logic	
	Usage in consumption category		14 MGD	680MGD*25%(commercial)*80% (indoor)*10%(rinsing usage)	
	% addressable of total usage		40%	40% of commercial kitchens/restaurants eligible	
	% savings from conservation program		35%	Switching to pre-rinse spray valves provides ~35% reduction	
	% targeted (incremental adoption rate)		90%	90% increase in adoption rate from current program	
	= Water savings (MGD)		1.8 MGD		
Cost	Cost category	Cost (\$M)	Logic		
	Utility	Rebate/incentives	-	No rebate cost provided	
		Equipm't/installation	\$1.1	Installation cost at \$200/install for utility	
		Marketing /admin	\$1.9	50% admin cost of total utility cost	
		Enforcement	-	No enforcement cost	
		Cost to customer	-	No customer cost, utility carries all cost of program	
	Total cost to utility:		\$3.0		
Stakeholder sensitivity	Stakeholder sensitivity	Reasons	Permits required	Requires legislation	
	No significant sensitivities noted	Cost-effective measures with little negative societal/environmental impact	No	No	

# Cooling towers (I)

Method of implementation: cooling tower audits program

**Current plan in Metro District:** no current program in place

Yield	Assumption		Value	Logic	
	Usage in consumption category		34 MGD	680MGD*25%(commercial)*20%(cooling towers)	
	% addressable of total usage		80%	80% of cooling towers are eligible	
	% savings from conservation program		40%	Increase from 2 to 5 cycles of concentration gives ~40% reduction	
	% targeted (incremental adoption rate)		25%	25% increase in adoption rate from current program	
	= Water savings (MGD)		2.7 MGD		
Cost	Cost category	Cost (\$M)	Logic		
	Utility	Rebate/incentives	-	No rebate cost provided	
		Equipm't/installation	\$5.0	Installation cost for utility	
		Marketing /admin	\$3.4	Cost for increased monitoring and auditing of cooling towers	
		Enforcement	-	No enforcement cost	
	Cost to customer		\$3.4	Customer cost to improve cooling process with higher cycles of concentration	
	Total cost to utility:		\$8.4		
Stakeholder sensitivity	Stakeholder sensitivity	Reasons	Permits required	Requires legislation	
	No significant sensitivities noted	Cost-effective measures with little negative societal/environmental impact	No	No	

# Cooling towers (II)

Method of implementation: cooling tower standards program

**Current plan in Metro District:** no current program in place

Yield	Assumption		Value	Logic
	Usage in consumption category		34 MGD	680MGD*25%(commercial)*20%(cooling towers)
	% addressable of total usage		80%	80% of cooling towers are eligible
	% savings from conservation program		40%	Increase from 2 to 4 cycles of concentration gives ~40% reduction
	% targeted (incremental adoption rate)		50%	50% increase in adoption rate from current program
	= Water savings (MGD)		5.4 MGD	
Cost	Cost category		Cost (\$M)	Logic
	Utility	Rebate/incentives	-	No rebate cost provided
		Equipm't/installation	\$7.1	Installation cost for utility
		Marketing /admin	-	No marketing/admin cost
		Enforcement	\$9.7	Cost of increased monitoring and enforcement to ensure standards
		Cost to customer	\$6.7	Customer cost to improve cooling process with higher cycles of concentration
	Total cost to utility:		\$16.8	
	Stakeholder sensitivity	Stakeholder sensitivity	Reasons	Permits required
No significant sensitivities noted		Cost-effective measures with little negative societal/environmental impact	No	No

# Watering restrictions (I)

Method of implementation: no daytime watering

**Current plan in Metro District:** current outdoor water use schedule since 2003 restricts watering to 3 days / week for all residential/commercial users

Yield	Assumption		Value	Logic	
	Usage in consumption category		143 MGD	1100MGD*[(53%(res.)*20%(outdoor)+25%(com.)*10%(outdoor)]	
	% addressable of total usage		100%	100% of outdoor water usage potentially addressable	
	% savings from conservation program		5%	Watering restriction able to provide ~5% reduction	
	% targeted (incremental adoption rate)		100%	100% adoption rate from current program	
	= Water savings (MGD)		7.2 MGD		
Cost	Cost category	Cost (\$M)	Logic		
	Utility {	Rebate/incentives	-	No rebate cost	
		Equipm't/installation	-	No equipment or installation cost	
		Marketing /admin	-	No marketing/admin cost	
		Enforcement	\$1.5	Enforcement cost of \$100k per provider for the top 15 providers	
	Cost to customer		-	No customer cost	
	Total cost to utility:		\$1.5		
Stakeholder sensitivity	Stakeholder sensitivity	Reasons	Permits required	Requires legislation	
	No significant sensitivities noted	Cost-effective measures with little negative societal/environmental impact	No	No	

# Watering restrictions (II)

Method of implementation: 1 day/week watering schedule

**Current plan in Metro District:** current outdoor water use schedule since 2003 restricts watering to 3 days / week for all residential/commercial users

Yield	Assumption		Value	Logic	
	Usage in consumption category		143 MGD	1100MGD*[(53%(res.)*20%(outdoor)+25%(com.)*10%(outdoor)]	
	% addressable of total usage		100%	100% of outdoor water usage potentially addressable	
	% savings from conservation program		15%	Watering restriction able to provide ~15% reduction	
	% targeted (incremental adoption rate)		100%	100% adoption rate from current program	
	= Water savings (MGD)		21.5MGD		
Cost	Cost category	Cost (\$M)	Logic		
	Utility	Rebate/incentives	-	No rebate cost	
		Equipm't/installation	-	No equipment or installation cost	
		Marketing /admin	-	No marketing/admin cost	
		Enforcement	\$3.0	Enforcement cost of \$200k per provider for the top 15 providers	
		Cost to customer	-	No customer cost	
	Total cost to utility:		\$3.0		
Stakeholder sensitivity	Stakeholder sensitivity	Reasons	Permits required	Requires legislation	
	No significant sensitivities noted	Cost-effective measures with little negative societal/environmental impact	No	No	

# Rain sensor irrigation (I)

Method of implementation: retrofit 25% of existing irrigation systems

**Current plan in Metro District:** current program is state law requiring rain shut-off sensors installed on all new irrigation systems for residential/commercial

Yield	Assumption		Value	Logic
	Usage in consumption category		88 MGD	680MGD*[(53%(res.)*20%(outdoor)+25%(com.)*10%(outdoor)]
	% addressable of total usage		90%	90% of irrigation systems do not yet have rain sensors
	% savings from conservation program		15%	Installing rain sensor irrigation systems provides ~15% reduction
	% targeted (incremental adoption rate)		25%	25% increase in adoption rate from current program
	= Water savings (MGD)		3.0 MGD	
Cost	Cost category		Cost (\$M)	Logic
	Utility	Rebate/incentives	-	No cost of rebate
		Equipm't/installation	\$4.1	Retrofit cost of \$100 per irrigation system
		Marketing /admin	\$1.0	20% admin cost of total utility cost (15% + 5% contingency)
		Enforcement	-	No enforcement cost
		Cost to customer	-	No customer cost
	Total cost to utility:		\$5.1	
Stakeholder sensitivity	Stakeholder sensitivity	Reasons	Permits required	Requires legislation
	No significant sensitivities noted	Cost-effective measures with little negative societal/environmental impact	No	No

# Rain sensor irrigation (II)

Method of implementation: retrofit 50% of existing irrigation systems

**Current plan in Metro District:** current program is state law requiring rain shut-off sensors installed on all new irrigation systems for residential/commercial

Yield	Assumption		Value	Logic	
	Usage in consumption category		88 MGD	680MGD*[(53%(res.)*20%(outdoor)+25%(com.)*10%(outdoor)]	
	% addressable of total usage		90%	90% of irrigation systems do not yet have rain sensors	
	% savings from conservation program		15%	Installing rain sensor irrigation systems provides ~15% reduction	
	% targeted (incremental adoption rate)		50%	50% increase in adoption rate from current program	
	= Water savings (MGD)		5.9 MGD		
Cost	Cost category	Cost (\$M)	Logic		
	Utility	Rebate/incentives	-	No cost of rebate	
		Equipm't/installation	\$8.2	Retrofit cost of \$100 per irrigation system	
		Marketing /admin	\$2.1	20% admin cost of total utility cost (15% + 5% contingency)	
		Enforcement	-	No enforcement cost	
		Cost to customer	-	No customer cost	
	Total cost to utility:		\$10.3		
Stakeholder sensitivity	Stakeholder sensitivity	Reasons	Permits required	Requires legislation	
	No significant sensitivities noted	Cost-effective measures with little negative societal/environmental impact	No	No	

# Overview of key options: Conserve

## Conserve

- Conservation efficiency programs (eg, fixture retrofits)
- **Reuse**
- Pricing
- Loss Reduction

# Water reuse options considered (I)

	Description of solution	Rationale	Key challenges	Timing (years)
1 <b>Indirect potable reuse</b>	<i>Expand</i> current indirect potable reuse, which is recapturing treated wastewater discharges downstream from original point of discharge to replenish drinking water supplies– then pumping water to upstream communities critically impacted by ruling	<ul style="list-style-type: none"> <li>• Already practiced on the Chattahoochee, but can be maximized in this need-based solution to directly address the gap in critically impacted counties</li> <li>• No negative impact on downstream users who use indirect potable reuse</li> </ul>	<ul style="list-style-type: none"> <li>• Regional cooperation and financing</li> <li>• Hall and Forsyth Counties may need to find alternate solutions since this option is much more costly for those two counties</li> <li>• Public education and acceptance</li> <li>• Assessing any impacts on water quality / temperature</li> </ul>	~4-5
2 <b>Direct potable reuse</b>	Treat wastewater to extremely high standards, then bring it directly back to the drinking water supply system without any dilution with nature	<ul style="list-style-type: none"> <li>• Reduces surface water demands</li> <li>• No negative impact on downstream users who use indirect potable reuse</li> <li>• Avoid pumping and piping costs associated with indirect reuse (ie, don't have to build additional conveyance network and pumping infrastructure)</li> </ul>	<ul style="list-style-type: none"> <li>• No precedent – currently not practiced in the US</li> <li>• There is no regulatory framework in place such as agreed upon treatment standards to implement option</li> <li>• Public perception and acceptance is questionable- would require very high treatment standards</li> </ul>	~3-4

Source: Technical Advisory Panel analysis;

144200-01 TF Mtg 2-23 Nov-v22.ppt

## Water reuse options considered (II)

	Description of solution	Rationale	Key challenges	Timing (years)
3 <b>Non-potable reuse</b>	<p>Use high quality treated wastewater for non-potable uses such as irrigation of golf courses, parks</p> <p>Use secondary-quality treated wastewater for use in cooling plant processes</p>	<ul style="list-style-type: none"> <li>Reduces use of potable water for non-potable purposes</li> </ul>	<ul style="list-style-type: none"> <li>Disruption caused by a dual distribution system construction in developed areas may be unacceptable</li> <li>Limited number of potential large users (of cooling plant water) and very uncertain demand which limits potential yield</li> </ul>	~3-7
4 <b>Grey water reuse</b>	<p>Localized purple pipes to directly reuse grey water (non-toilet household water such as shower and sink water) for non-potable reuse such as toilets</p>	<ul style="list-style-type: none"> <li>Reuse of grey water for toilets can reduce demand on potable water</li> </ul>	<ul style="list-style-type: none"> <li>Some plumbing codes may not allow purple pipes to be installed in homes</li> <li>Potential health risk (ie. cross connections)</li> <li>Poor maintenance by home owners and lack of public oversight could result in water quality issues and concerns</li> </ul>	Localized implementation at 10% of households/year

Source: Technical Advisory Panel analysis;

144200-01 TF Mtg 2-23 Nov-v22.ppt

# Detailed cost estimates for water reuse options

		Capital Cost					Operating Cost			
		Option	Pump & pipe (\$M)	Water treatment (\$M)	Storage space (\$M)	Infra-structure (\$M)	Total (\$M)	Pumping cost (\$M)	O&M cost (\$M)	Total (\$M)
1	Indirect potable reuse	6-county solution	\$1,370	\$1250 <sup>1</sup>	\$71	\$33	\$2,800	\$400	\$1,100 <sup>1</sup>	\$1,500
		4-county solution (excl Hall, Forsyth)	\$1,000	\$900 <sup>1</sup>	\$71	\$24	\$2,000	\$200	\$950 <sup>1</sup>	\$1,150
2	Direct potable reuse	Direct potable reuse	\$810	\$4,700	\$71	\$14	\$5,600	\$200	\$2,200	\$2,400
3	Non-potable reuse (irrigation)	Irrigation of all outdoor usage	\$14,400	-	-	-	\$14,400	-	\$400	\$400
		For golf courses, parks only	\$111	-	-	-	\$111	\$1	-	\$1
4	Grey water reuse	Retrofit on existing homes	-	-	-	\$3,300	\$3,300	-	\$6,800	\$6,800

1. Includes estimate of additional treatment cost above and beyond EPD requirements based on feedback from water providers  
All estimates have been rounded to the nearest tenth, numbers may not add up due to rounding errors

Source: Technical Advisory Panel analysis;

144200-01 TF Mtg 2-23 Nov-v22.ppt

# Assessment of implementation ease for water re-use options

	Requires legislation?	Requires permitting?	Legal uncertainty?	Stakeholder sensitivity? <sup>1</sup>
1 Indirect potable reuse	No	Yes	No	5
2 Direct potable reuse	No	Yes	No	1
3 Non-potable reuse	No	Yes	No	2
4 Grey water reuse	Yes	No	No	1

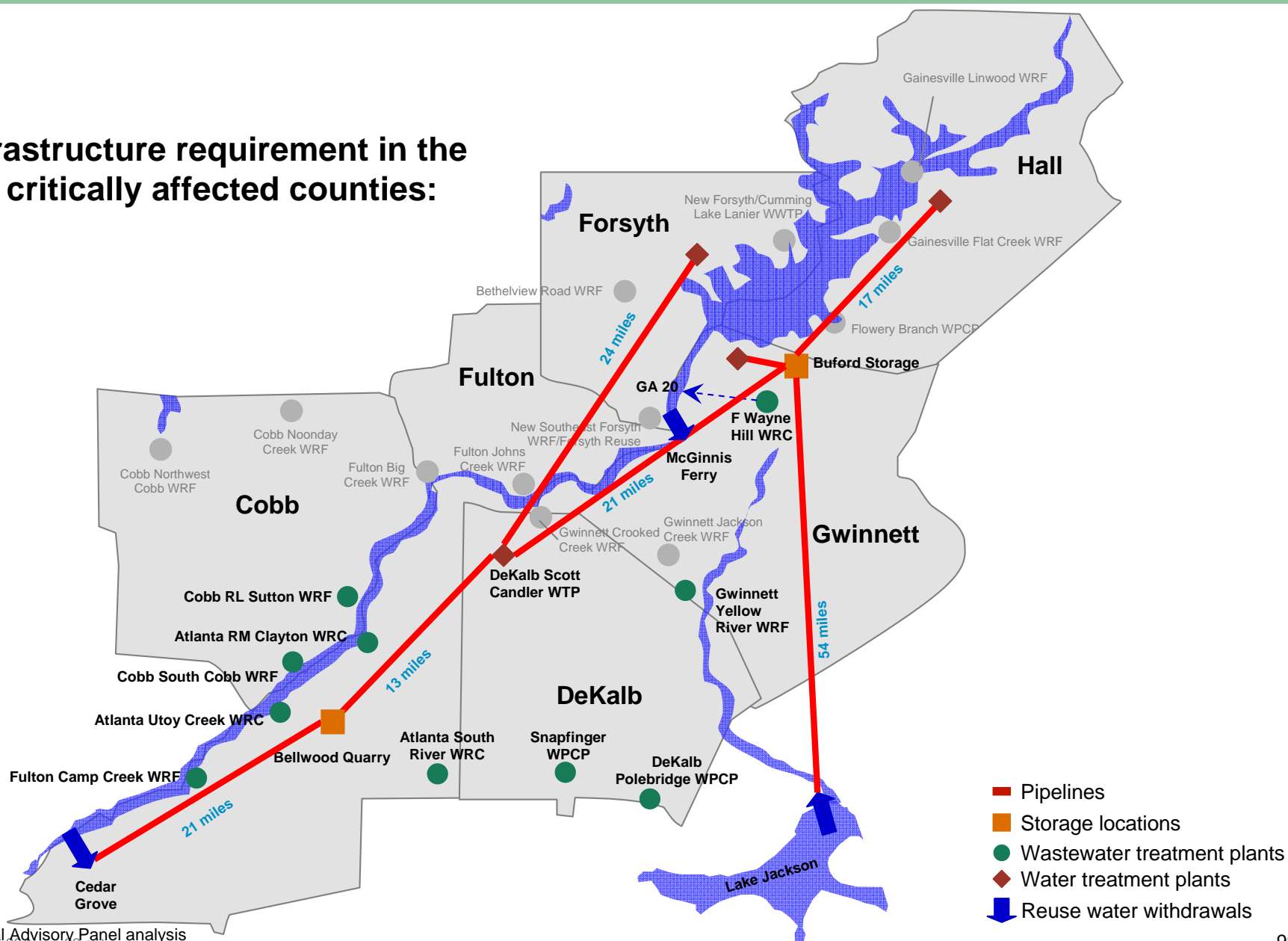
1. 1 = "highly contentious" to 5 = "no significant sensitivities noted"

Source: Technical Advisory Panel analysis;

144200-01 TF Mtg 2-23 Nov-v22.ppt

# Indirect potable reuse: *infrastructure requirement*

**Infrastructure requirement in the 6 critically affected counties:**



Source: Technical Advisory Panel analysis  
144200-01 TF Mtg 2-23 Nov-V22.ppt

## Estimates of indirect potable reuse cost/benefit by region

Region	Average yield (MGD)	Total cost <sup>1</sup> (\$B)	Cost (\$/MG)
Hall County and Forsyth County	47	0.9	1,118
Gwinnett, DeKalb, Fulton and Cobb County	205	3.2	~860
<hr/>			
Total of all 6 counties	252	4.3 <sup>2</sup>	~950 <sup>2</sup>

1. Total cost in 2010 dollars 2. Includes estimate of additional treatment cost above and beyond EPD requirements based on feedback from water professionals  
Source: Technical Advisory Panel analysis

## Non-potable reuse: *top 10 irrigation users*

### Top 10 irrigation users (golf course and parklands) in 6 county system

County	Pipelines (size in inches)	Capital cost (\$M)	Peak reuse demand <sup>1</sup>
Gwinnett	10 miles (18")	\$24.5	2 MGD
Forsyth	24 miles (18")	\$63.5	3 MGD
	3 miles (12")		
Hall	5 miles (18")	\$12	2 MGD
Fulton	7 miles (18")	\$17	2 MGD
<b>Total</b>		<b>\$117M</b>	<b>9 MGD</b>

Equivalent to \$111M in  
2010 dollars (PV terms)

Equivalent to 3 AAD-MGD  
(use peaking factor of 3  
for irrigation use)

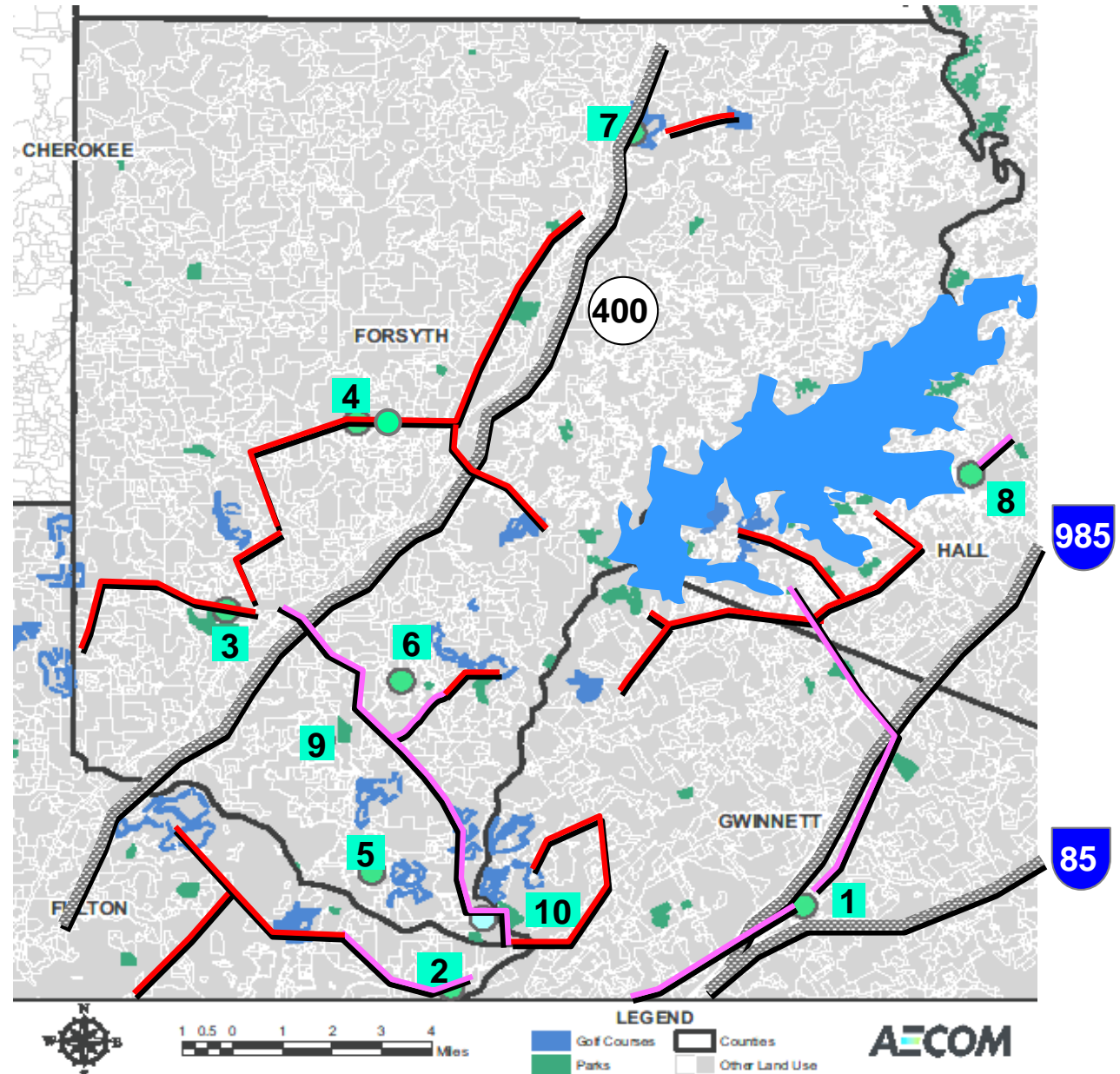
1. Peak demand is seasonal high months of June to August  
Source: Technical Advisory Panel analysis;  
144200-01 TF Mtg 2-23 Nov-v22.ppt

# Non-potable reuse: *infrastructure requirement*

## Water Reclamation Plants

- |    |   |
|----|---|
| 1  | F Wayne Hill WRC                        |
| 2  | Cauley Creek WRF                        |
| 3  | Fowler WRF                              |
| 4  | Cumming WRF                             |
| 5  | Dick Creek WRF                          |
| 6  | Windermere WRF                          |
| 7  | Hamptons WRF                            |
| 8  | Flowery Branch WRF                      |
| 9  | Laurel Springs WRF                      |
| 10 | Skake Rag WRF ( <i>planning stage</i> ) |

- |  |                      |
|--|----------------------|
|  | Existing Reuse Mains |
|  | Possible Reuse Mains |



# Overview of key options: Conserve

## Conserve

- Conservation efficiency programs (eg, fixture retrofits)
- Reuse
- **Pricing**
- Loss Reduction

## Pricing option considered

Option	Description	Rationale	Key Challenges	Timing (years)
Residential conservation pricing	Institute steeper residential increasing block rate structures by increasing marginal prices at high consumption levels, with the intent of reducing outdoor water use.	<ul style="list-style-type: none"> <li>Shifts financial burden from essential uses towards non-essential uses, promoting conservation while keeping minimum level of services affordable</li> <li>Economically efficient approach relative to non-pricing measures</li> <li>Readily enforceable—minimal enforcement costs</li> </ul>	<ul style="list-style-type: none"> <li>Less effective for wealthy communities, as compared with non-pricing measures</li> <li>Less effective where non-essential demand and/or seasonal peaking are lower</li> <li>Utility revenue stream will be more unstable, varying with seasonal demand</li> <li>Impacts urban agriculture industry viability</li> </ul>	1–3

# Six criteria used to rank utility conservation potential

Utilities ranked from 1 (high) to 3 (low) on each criterion; weighted average for overall ranking

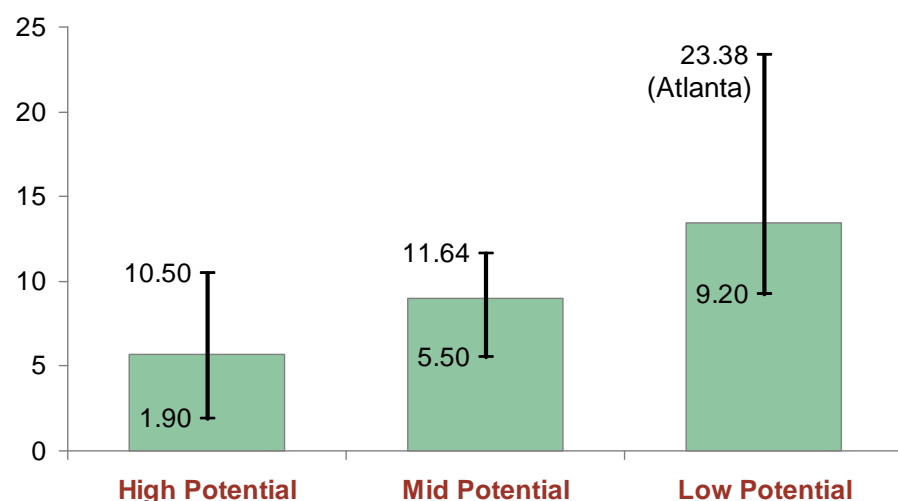
Criteria	Logic	Weight (%)
<b>1 Marginal price of water</b>	Utilities with lower marginal prices have greater conservation potential <ul style="list-style-type: none"> <li>• MP at 14,000 GPM for combined (indoor/outdoor) rate structures</li> <li>• MP at 10,000 GPM for irrigation rate structures</li> </ul>	24
<b>2 Financial incentive for demand reduction</b>	Utilities that provide smaller financial incentives for reduction in use have greater conservation potential. Usage reduction scenarios: <ul style="list-style-type: none"> <li>• 60% reduction (15,000 to 6,000 GPM, combined rate structures)</li> <li>• 100% reduction (10,000 to 0 GPM, irrigation rate structures)</li> </ul> Indicators evaluated: <ul style="list-style-type: none"> <li>• % change in total bill</li> <li>• Absolute (\$) change in total bill</li> </ul>	21 21
<b>3 Demand seasonality</b>	Utilities with greater peaking ratio (ratio of summer use to winter use) have greater conservation potential	19
<b>4 Rate structure type</b>	Preferred rank order: <ul style="list-style-type: none"> <li>• Increasing block &gt; seasonal rates &gt; uniform rates &gt; decreasing rates</li> </ul>	11
<b>5 Median household income</b>	Communities with higher income have lower conservation potential	2
<b>6 Poverty level</b>	Communities with lower poverty have lower conservation potential	2

**Ranking used to categorize utilities into three groups based on relative capacity to improve pricing signals**

# Utilities categorized into three groups based on relative capacity to improve pricing signals

## Comparison of key rate structure characteristics across groups

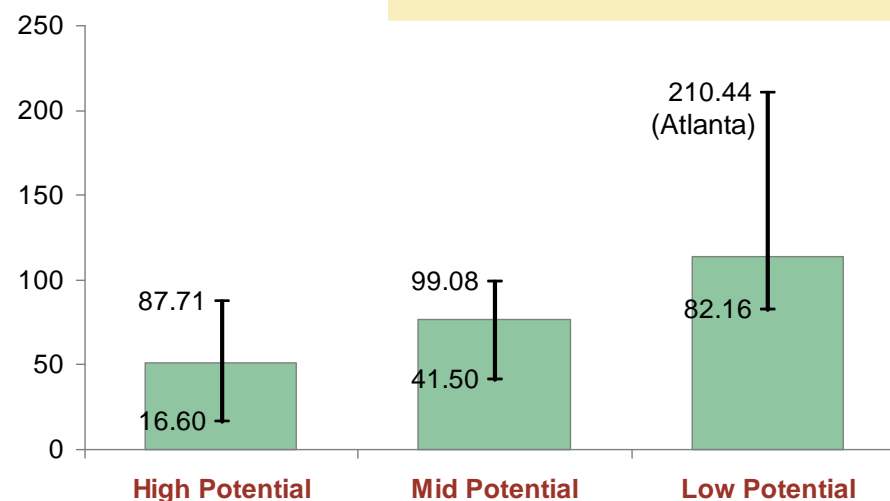
Average Marginal Price  
@ 14K<sup>1</sup> GPM (\$)



Max	0.4	3.4	1.1	Pop Served (Millions)
Min	21	21	21	# Utilities

Significant variability in absolute marginal price levels for outdoor consumption

Average reduction in  
total bill<sup>2</sup> (\$)

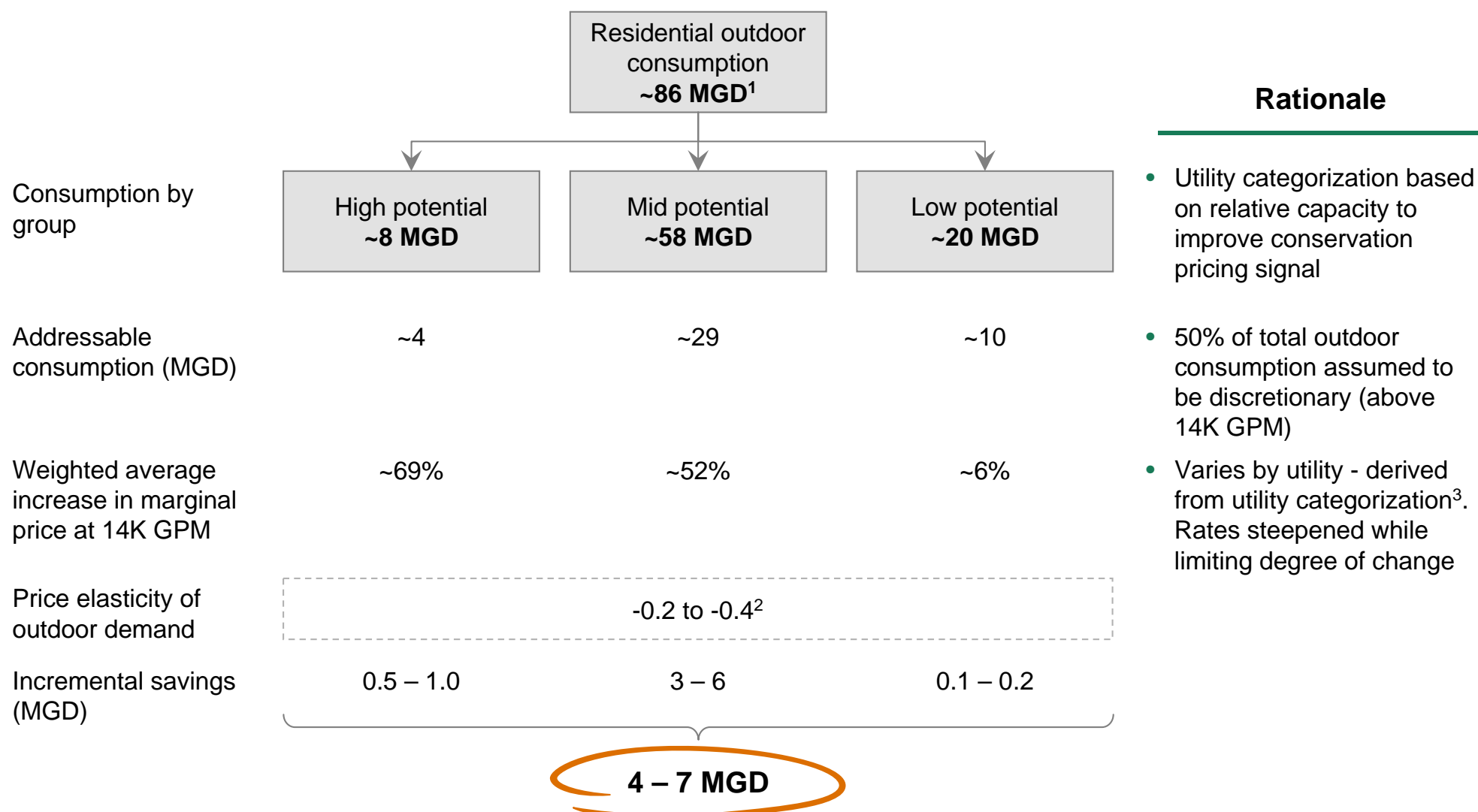


0.4	3.4	1.1	Pop Served (Millions)
21	21	21	# Utilities

Significant variability in rate structure steepness across utilities

1. Pertains to combined water and sewer rate structures 2. Total bill savings for 33% reduction in consumption (15K to 10K GPM)

# Approach to estimate residential outdoor water savings through pricing



1. Estimated using per capita outdoor water consumption from Metro water plan (May 2009), Table 3-2 and data on population served by each utility from GEFA/UNC Rate Survey (May 2009)

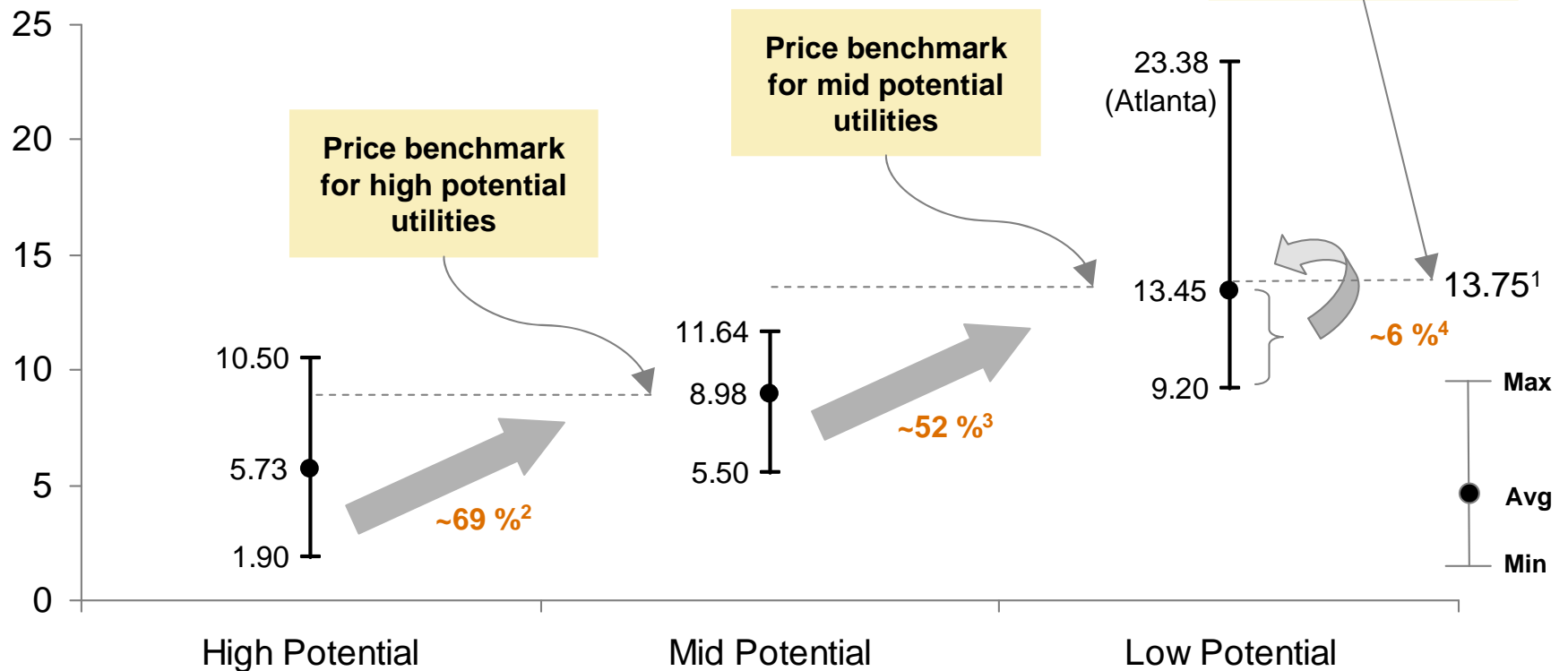
2. Water and Wastewater pricing, EPA 832-F-03-027; Olmstead et al, Comparing price and non-price approaches to urban water conservation; Metro plan assumptions; TAP estimates

3. Assumes Marg. Price (MP) of utilities at 14K GPM would reach the avg. of their peers in the next category. MP for low pot. utilities assumed to reach 75th percentile within the category

Note: Numbers may not add up due to rounding errors; GPM – Gallons Per Month; Source: Technical Advisor Panel Analysis

# Degree of marginal price increase for each utility based on categorization

Marginal Price  
@ 14K GPM (\$)



**Premise: Steepen rates while limiting degree of change**

1. 75th percentile of all prices in the low potential category 2. Marginal price increase for high potential group varies from 0 – 370%, with a weighted average of 69% 3. Marginal price increase for mid potential group varies from 15 – 145%, with a weighted average of 52% 4. Marginal price increase for low potential group varies from 0 – 50%, with a weighted average of 6%  
Source: Technical Advisor Panel

# Pricing: general recommendations

- 1 Increase marginal prices of residential outdoor water by raising rates of utilities with high conservation potential to be more in line with their higher priced peers in the District**
  - Performance Indicator: Marginal price at 14,000 gallons per month
  - Timeframe: 1 - 3 years
- 2 Improve customer awareness through effective billing practices**
  - Communicate historical water use and marginal rates on monthly customer bill
  - Bill at least on a monthly basis to send more immediate price signals
  - Use utility billing data to target communication to irrigators
- 3 Adopt billing best-practices**
  - Distinguish between different customer classes within your billing system
  - Require separate irrigation meters for all in-ground irrigation systems
  - Sub-meter multi –family residential and non-residential customers
  - Institute a program for customers who cannot afford bills (address affordability issues)

# Overview of key options: Conserve

## Conserve

- Conservation efficiency programs (eg, fixture retrofits)
- Reuse
- Pricing
- **Loss Reduction**

# Loss reduction options considered (I)

	Description of solution	Rationale	Key challenges	Timing
1 <b>Leak abatement</b>	<p>Expedited leak abatement program compared to current plan, targeting lower loss rate goal</p> <ol style="list-style-type: none"> <li>1. Leak detection component to detect and repair active leaks in water pipelines</li> <li>2. Valve exercising component to make sure valves are functioning properly, as they are used to isolate pipeline breaks and prevent water flow through those breaks</li> <li>3. Pressure management component to use pressure sustaining valves to reduce water line breaks by reducing pressure of water during low usage periods (ie. at night when most water breaks occur)</li> </ol>	Targeted and cost effective solutions to actively reduce water loss through leaks and breaks as they are occurring in the system	<ul style="list-style-type: none"> <li>• Need regulatory framework to ensure all utilities conduct water audits to AWWA/IWA standards and have robust leak abatement program</li> <li>• Need accurate utility-level data for tailored loss reduction program and goals vs. arbitrary benchmarks</li> <li>• Funding for programs</li> </ul>	Savings to begin immediately
2 <b>Pipeline replacement</b>	Ongoing capital program for water distribution pipeline repair and replacement to rehabilitate old pipes	Ongoing repair and replacement program can prevent future leaks, resulting in less investment on leak detection programs	<ul style="list-style-type: none"> <li>• High cost of pipeline replacement program</li> </ul>	Savings to begin immediately

# Assessment of implementation ease for loss reduction options

	Requires legislation?	Requires permitting?	Legal uncertainty?	Stakeholder sensitivity? <sup>1</sup>
1 Leak abatement	No	No	No	5
2 Pipeline replacement	No	No	No	5

1. 1 = "highly contentious" to 5 = "no significant sensitivities noted"

Source: Technical Advisory Panel analysis;

144200-01 TF Mtg 2-23 Nov-v22.ppt

# Loss reduction actions required

## **Every water system should conduct water loss assessments to IWA/AWWA standards**

- Audits would improve consistency of non-revenue loss data and terminology, and enable better comparison of this benchmark across utilities and over time to assess progress
- The utilization of standardized audits can be phased in with larger utilities complying within 3 years

## **Every water system should develop a 'real' water loss reduction program**

- Program can include utilization of portable and permanent leak detection devices, valve exercising, pressure management, and pipeline replacement

## **Every water system should also develop a lost revenue recovery program**

- Program can include metering techniques (meter testing and replacement)
- Utility should commit personnel to maintain meter system to accurately capture real vs. apparent losses

## **A technical assistance program should be developed to provide guidance to water utilities for leak abatement programs**

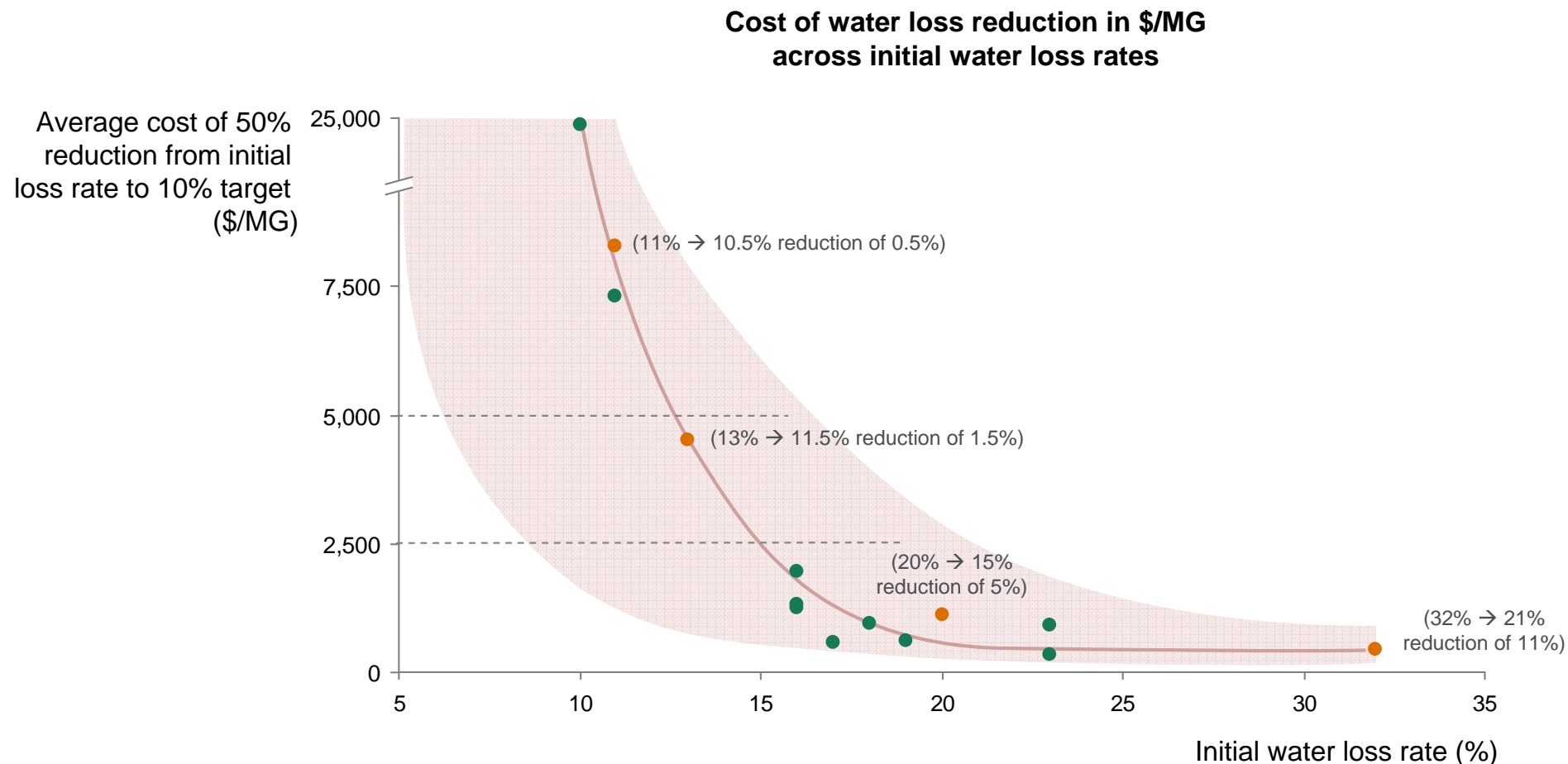
- Technical guidance should be developed and utilities given time to create and implement a program based on utility size or service population

## **A funding program should be developed to provide financial assistance for capital-intensive projects**

- Require GEFA to prioritize use of Clean Water and Drinking Water State Revolving Funds for projects that reduce water loss

# Cost curve for loss reduction is non-linear

Loss reduction avg cost of ~\$5,000/MG at loss rate of 13%, but only ~\$2,500/MG at rate of 15%



Source: Metro North Georgia District Water Plan (May 2009) data provided by ARC,

144200-01 TF Mtg 2-23 Nov-v22.ppt

# Detailed cost estimates for leak abatement programs: leak detection and valve exercising

## Leak detection

Population	6,000,000	persons
Population per metered unit	3	persons
# of meters	2,000,000	meters
Miles of water main	36,000	miles
# of crew persons per mile	0.003	Persons
Estimate of persons to perform leak detection	107	Persons
Estimate cost per person	\$35	\$/hour
Hours per year	2,000	hours/year
Man-hours per year	\$7,466,667	per year
PV of total cost:	\$130,018,169	

## Valve exercising

Population	6,000,000	persons
Population per metered unit	3	persons
# of meters	2,000,000	meters
Miles of water main	36,000	miles
# of crew persons per mile	0.002	Persons
Estimate of persons to perform valve exercising	80	Persons
Estimate cost per person	\$35	\$/hour
Hours per year	2,000	hours/year
Man-hours per year	\$5,600,000	per year
PV of total cost	\$97,513,627	

## Pressure management

Population	6,000,000	persons
# households	2,000,000	household
HHs/pressure sustaining valve	5,000	HH/PSV
# of PSVs	400	valves
Unit cost of PSV	\$50,000	per valve
Total cost of PSV	\$20,000,000	
PV of installing PSVs over 10-year period	\$17,060,406	
Service cost for PSVs	\$1,000,000	per year
PV of service/maintenance cost	\$17,413,148	
PV of total cost	\$34,473,553	

**Water savings in 2035: 20 MGD**

**Cost efficiency: ~ \$1,400/MG**

**Water savings in 2035: 7 MGD**

**Cost efficiency: ~ \$2,100/MG**

**Water savings in 2035: 14 MGD**

**Cost efficiency: ~ \$374/MG**

**Average water savings: 27 MGD**

**Cost efficiency: ~ \$1,200/MG**

# Detailed cost estimates for pipeline replacement

Estimate of water savings	Value	Units
Current Daily Use	680	MGD
% Water Savings	0.5%	%
Water Savings	3.4	MGD
Average Savings at 25 years	5	MGD
Average Savings over 25 years (0 at begin, 5 at 2035)	2.5	MGD
<b>Estimate of cost</b>		
Estimate of Large Transmission Mains		
Miles of Transmission Mains/mg	3	Miles/MGD
Annual Water Use	680	MGD
Total Miles of Transmission Mains	2,267	Miles
Estimated Value of Transmission Mains/Mile	\$1,500,000	\$/Mile
Estimated Value of Transmission Mains	\$3,400,000,000	\$
Rehabilitation Costs per year as %	2%	%
Rehabilitation Costs per year	\$68,000,000	\$
PV of Annual Rehabilitation Costs	\$1,184,094,043	\$
Cost/water savings Ratio		
Averaged over 25 years	\$51,341	\$/MG

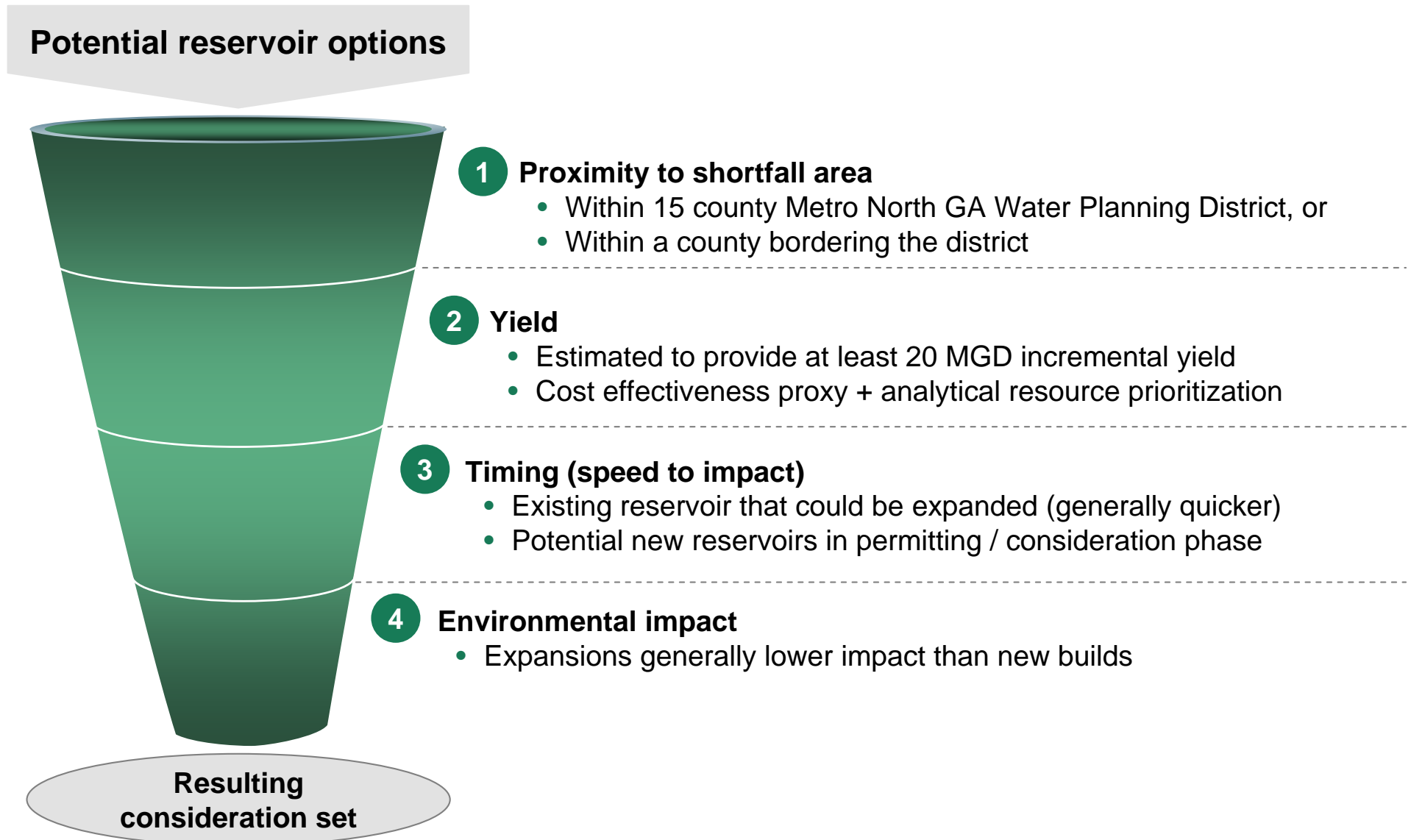
Use upper bound  
of \$3,000,000/mile

# Overview of key options: Capture

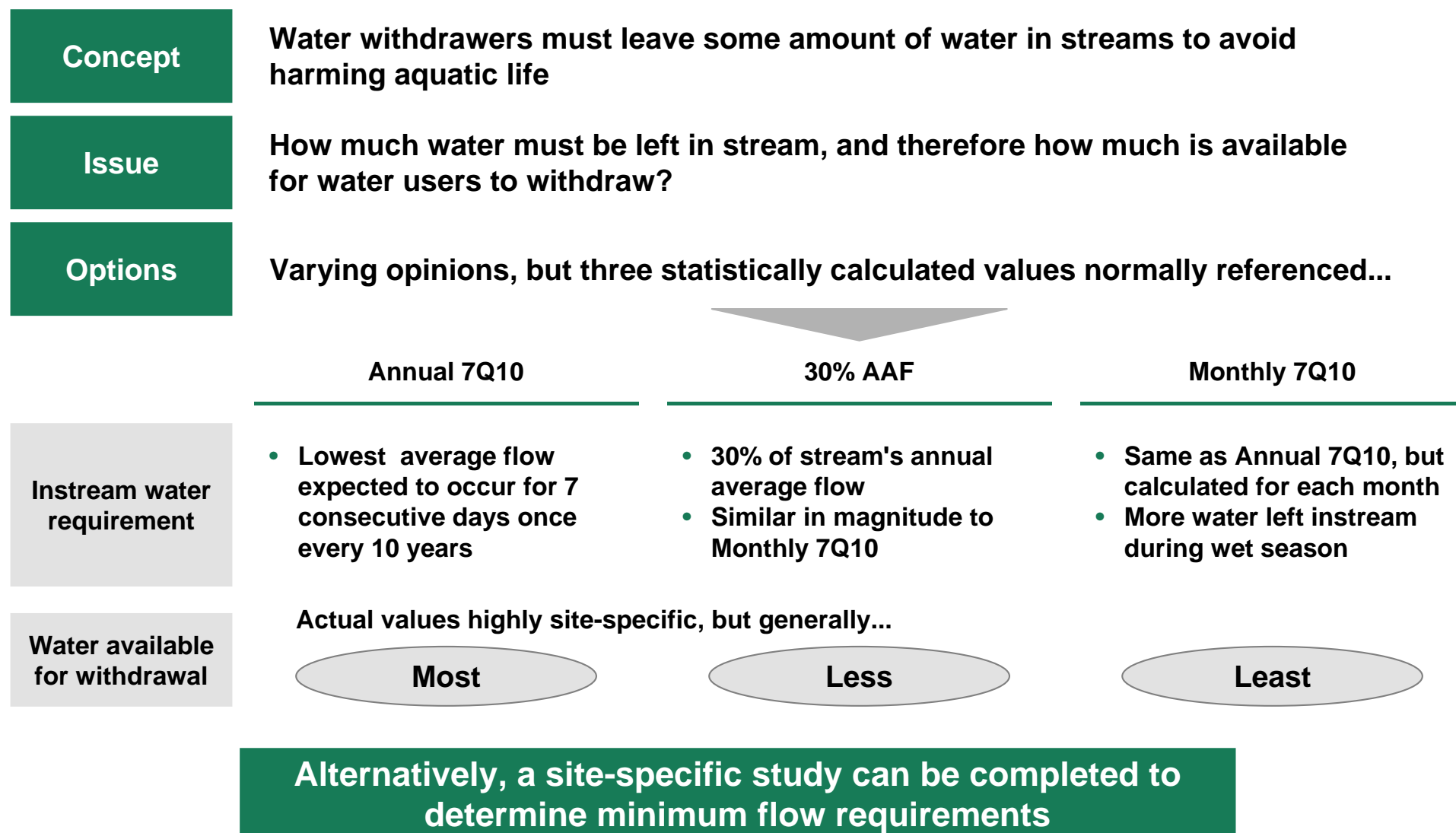
## Capture

- **Reservoirs and quarries**
- Groundwater and ASR
- Desalination
- Water quality / treatment

# Four primary filters used to identify *reservoir* sites for detailed cost/ benefit analysis



# Specific "instream flow" policy dictates amount of water available to withdraw from streams



# Reservoirs: *assumptions*

## Yield

**For existing reservoirs that do not currently incorporate pumped storage, evaluate increased yield achieved by adding capability where feasible**

**For reservoirs in permitting/planning, evaluate incremental yield achieved by building higher dam or using lower instream flow requirement**

**All yields estimated via sophisticated modeling software, based on "usable storage" levels, and minimum instream flow as indicated per option**

## Costs

**Wherever applicable, cost of conveyance from reservoir to a new distribution network was estimated using standardized, across-team assumptions**

**Costs include 30% contingency factor for dam structures**

**No cost included for potential water quality compatibility concerns with distribution system interconnections**

# Reservoir options considered (I)

Expand	Option	Description	Rationale	Key challenges	Timing (years)
	1 Big Haynes Creek Reservoir	Add pumped storage from Yellow River (when surplus available in this larger nearby river, pump into reservoir for storage rather than allowing it to flow downstream unused); Rockdale county water treatment plant (WTP) treat and sell extra yield to Gwinnett	Not an interbasin transfer (IBT), not a long distance movement of water, not an interstate basin, significant new yield, increased water reuse, existing purchase connection between counties	Public acceptance of indirect wastewater reuse	8-12
	2 Dog River Reservoir	Raise dam height, add pumped storage from Chattahoochee River; Douglas county WTP treat and sell extra yield to Cobb County	Not an IBT, not a long distance movement of water, reasonable new yield, increased water reuse, existing purchase connection between counties	Corps of Engineers (COE) permit for reservoir expansion, Public acceptance of indirect reuse of wastewater, interstate stream	8-12
	3 Tussahaw Creek Reservoir	Add pumped storage from Jackson Lake (at Newton/ Butts/ Jasper lines); Henry Co treat and sell extra yield to DeKalb County	Not an IBT, not an interstate stream, existing purchase connection between counties	Limited new yield, long distance movement of water, new use of Lake Jackson (Federal Energy Regulatory Commission (FERC) and Georgia Power approval)	8-12
	4 Etowah River Dam 1 NRCS Reservoir	Raise dam height, convert from flood control to water supply, pump yield to Forsyth County WTP	Existing reservoir, not an IBT	COE permit for new water supply reservoir, interstate stream, limited yield	8-12

Source: Technical Advisory Panel

144200-01 TF Mtg 2-23 Nov-v22.ppt

## Reservoir options considered (II)

Build	Option	Description	Rationale	Key challenges	Timing (years)
	5 Newton County Bear Creek Reservoir	Build reservoir, add pumped storage from Jackson Lake, Newton Co sell 20 MGD from Cornish Creek to Gwinnett	Not an IBT, not an interstate stream	Limited new yield, long distance, new use of Lake Jackson (FERC and Georgia Power approval, COE permit for new reservoir)	8-12
	6 Hard Labor Creek Reservoir	Build reservoir, pumped storage from Apalachee, new WTP, pipeline to Gwinnett, sell excess water to Gwinnett	Reservoir permitted, dam designed, not an IBT, significant new yield, strong local support	Long distance movement of water	8-12
	7 South Fulton Bear Creek Reservoir	Build reservoir, pumped storage from Chattahoochee, new WTP, pipeline to Atlanta, sell excess water to South Fulton and City of Atlanta	Not an IBT, significant new yield, local government support, increase water reuse, existing purchase connection between counties	Public acceptance of indirect wastewater reuse, interstate stream, COE permit for new reservoir, City of Atlanta opposition	8-12
	8 Hall County Glades Reservoir	Build reservoir, pumped storage from Chattahoochee, new WTP, half yield to Gainesville, half to Gwinnett	No new IBT, very significant yield, local support, land owned by local government, located to serve several governments	COE permit for reservoir, interstate basin, long distance movement of water	8-12
	9 Paulding County Richland Creek Reservoir (#1)	Build reservoir, pumped storage from Etowah, pipe to Paulding Co WTP	Significant new yield, reservoir land purchased, strong local government support	COE permit for reservoir, potential IBT, interstate basin	10-12
	10 Paulding County Richland Creek Reservoir (#2)	Build larger reservoir, pumped storage from Etowah, new WTP, sell excess yield to Cobb and/or Bartow counties	Very significant new yield	COE permit for new reservoir, potential IBT, interstate basin	10-12

Source: Technical Advisory Panel

144200-01 TF Mtg 2-23 Nov-v22.ppt

## Reservoir options considered (III)

	Option	Description	Rationale	Key challenges	Timing (years)
Build	11 New reservoir NW of Forsyth	Build reservoir to supply Forsyth County, pumping raw water to the Forsyth WTP	Very significant new yield, no IBT	COE permit for new reservoir, interstate stream, EPD approval of instream flow	8-12
	12 New reservoir E of Gwinnett	Build reservoir with pumped storage east of Gwinnett County, pumping raw water to Gwinnett WTP	Significant new yield	Potential IBT, potential interstate stream, long distance movement of water, COE permit for new reservoir, EPD approval of instream flow	8-12
Dredge	13 Dredge Bull Sluice Lake (behind Morgan Falls dam)	Dredge Bull Sluice Lake (behind Morgan Falls Dam) to create additional storage and provide incremental yield to existing water treatment plants	Increase capacity of Bull Sluice Lake; some additional yield for Cobb County, City of Atlanta	Limited new yield, environmental permitting; access to land (purchase or lease) for dewatering/loading; local resident impacts (heavy truck traffic, noise); damage to public roads, wildlife impacts; 2.75 years of field operations; significant permitting time	8-12
Quarries	14 Convert 'small' quarry (~3 BG) to water storage	Add pumped storage from any sizeable stream, pump raw water to an existing WTP	No reservoir needed, may help augment localized storage needs	Limited new yield, few inactive quarries available in proximity to area of shortfall	8-12
	15 Convert 'large' quarry (~15 BG) to water storage	Add pumped storage from any sizeable stream within 10 miles, pump raw water 10 miles to an existing WTP	No reservoir needed, significant new yield	Long distance movement of water, only one 'large' quarry in area and it is still active, significant acquisition cost likely	8-12

Source: Technical Advisory Panel

144200-01 TF Mtg 2-23 Nov-v22.ppt

# Reservoir options submitted by Task Force

Source	Option	Yield (MGD)	Comparison to options considered by TAP team
<b>GSWCC</b>	Expand Raccoon Creek #8	11	Similar location/costs, lower yield than Richland Creek options Could it be implemented more quickly?
	Expand Ellijay River #1	10	No direct impact to affected counties w/o adding high transport costs
	Expand Talking Rock Creek #13	2	No direct impact to affected counties w/o adding high transport costs
	Expand Etowah River #1	24	Included in detailed analysis set
<b>Habersham EMC</b>	Build Habersham Reservoir	TBD (max <99)	Impounding a major stream not likely to be permitted Costs higher (longer transport), yields lower (in-stream vs. off-stream pump storage from same source) than Hall County Glades Reservoir

Source: "Inventory and Assessment of USDA/Soil and Water Conservation District Watershed Dams" (Mar 16, 2009); email communications from GSWCC and Habersham EMC

# Detailed cost estimates for options (I)

Team: Reservoirs

	Option	Capital Cost				Annual Operating Cost				Total cost <sup>2</sup> (\$M)
		Pump & pipe (\$M)	Water treatment (\$M)	Other capital costs <sup>1</sup> (\$M)	Total (\$M)	Annual Pumping (Power) (\$M)	Annual O&M (\$M)	Annual res. maint (\$M)	Total (\$M)	
Expand	Big Haynes Creek	0	117	108	225	0.9	0.1	0.5	1.5	262
	Dog River (30% AAF)	0	119	112	231	0.7	0.2	0.5	1.4	267
	Dog River (A7Q10)	391	438	122	951	8.9	0.4	0.5	9.8	1,202
	Tussahaw Creek	0	54	10	64	0.6	0.1	0.5	1.2	95
	Etowah River Dam #1	91	102	158	351	3.5	0.3	0.5	4.3	460
Build	Newton County Bear Creek	163	54	8	225	1.7	0.1	0.5	2.3	285
	Hard Labor Creek	249	103	274	626	4.1	0.2	0.5	4.8	750
	South Fulton Bear Creek (30% AAF)	0	27	68	95	0.1	0.1	0.5	0.6	110
	South Fulton Bear Creek (A7Q10)	332	300	87	719	5.6	0.2	0.5	6.3	882
	Hall County Glades (30% AAF)	355	201	226	782	6.8	0.3	0.5	7.6	978
	Hall County Glades (A7Q10)	364	226	213	803	7.2	0.3	0.5	8.0	1,008
	Richland Creek	114	89	138	341	4.0	0.2	0.5	4.7	462
	Richland Creek (larger)	171	185	260	616	7.8	0.3	0.5	8.6	837

1. Includes pre-construction, reservoir system infrastructure, and environmental mitigation costs 2. Indicates total cost in 2010\$ over the life of the project, discounted at 3%  
All estimates have been rounded to the nearest tenth, numbers may not add up due to rounding errors 5. Highly uncertain acquisition costs for a large, active quarry

## Backup

# Detailed cost estimates for options (II)

Team: Reservoirs

	Option	Capital Cost			Annual Operating Cost				
		Pump & pipe (\$M)	Water treatment (\$M)	Other capital costs <sup>1</sup> (\$M)	Total (\$M)	Annual Pumping (Power) (\$M)	Annual O&M (\$M)	Annual res. maint (\$M)	Total cost <sup>2</sup> (\$M)
Generic	Reservoir NW of Forsyth (30% AAF)	161	202	294	657	5.3	0.3	0.5	815
	Reservoir NW of Forsyth (A7Q10)	161	206	283	650	5.3	0.3	0.5	806
	Reservoir E of Gwinnett (30% AAF)	497	122	343	962	7.1	0.3	0.5	1,170
	Reservoir E of Gwinnett (A7Q10)	497	122	252	871	7.1	0.3	0.5	1,073
Quarry	'Small' quarry	37	23	34	95	1.1	0.1	0.5	140
	'Large' quarry	78	95	77 - 577 <sup>5</sup>	250 – 750	3.6	0.2	0.5	360 – 860
Dredge	Morgan Falls dam (Bull Sluice Lake)	Estimates are pending further analysis; potential yields could be highly sensitive to Buford Dam operations assumptions, which the Task Force lacks at this time'							

1. Includes pre-construction, reservoir system infrastructure, and environmental mitigation costs 2. Indicates total cost in 2010\$ over the life of the project, discounted at 3%  
All estimates have been rounded to the nearest tenth, numbers may not add up due to rounding errors 5. Highly uncertain acquisition costs for a large, active quarry

# Qualitative estimates of implementation ease (I)

Team: Reservoirs

	Option	Requires legislation?	Requires permitting?	Legal uncertainty?	Stakeholder sensitivity <sup>1</sup>
<b>Expand</b>	Big Haynes Creek	No	Yes	Yes	4
	Dog River	No	Yes	Yes	3
	Tussahaw Creek	No	Yes	Yes	2
	Etowah River Dam #1	No	Yes	Yes	3
<b>Build</b>	Newton County Bear Creek	No	Yes	Yes	3
	Hard Labor Creek	No	Yes	Yes	5
	South Fulton Bear Creek	Yes (SDS restriction)	Yes	Yes	2
	Hall County Glades	Yes (IBT)	Yes	Yes	2
	Richland Creek	Yes (IBT)	Yes	Yes	2
	Richland Creek (larger)	Yes (IBT)	Yes	Yes	2

1. 1 = "highly contentious" to 5 = "no significant sensitivities noted"

Note: Estimates based on 50 year project life for reservoirs and quarries, 25 year for dredging

# Qualitative estimates of implementation ease (II)

Team: Reservoirs

	Option	Requires legislation?	Requires permitting?	Legal uncertainty?	Stakeholder sensitivity <sup>1</sup>
Generic	Reservoir NW of Forsyth	No	Yes	Yes	2
	Reservoir E of Gwinnett	Yes (IBT)	Yes	Yes	2
Quarries	'Small' quarry	No	Yes	Yes	5
	'Large' quarry	No	Yes	Yes	4

1. 1 = "highly contentious" to 5 = "no significant sensitivities noted"  
 Note: Estimates based on 50 year project life

# Big Haynes Creek Reservoir

## Reservoirs: expansion

### Yield

Instream flow assumption	Yield (MGD)	Cost (\$/MG)	Timing (years)		
			Pre-const	Const	Overall <sup>1</sup>
A7Q10	47	305	2-4	6-8	8-12

### Costs

Instream flow	Capital Cost				Annual Operating Cost				
	Pump & pipe (\$M)	Water treatment (\$M)	Other capital costs <sup>2</sup> (\$M)	Total (\$M)	Annual Pumping (Power) (\$M)	Annual O&M (\$M)	Annual res. maint (\$M)	Total (\$M)	Total cost <sup>3</sup> (\$M)
A7Q10	0	117	108	225	0.9	0.1	0.5	1.5	262

### Stakeholder sensitivity

Stakeholder sensitivity	Reasons	Permits required	Requires legislation
Some minor sensitivities	Minimal concern, mainly over public acceptance of indirect wastewater reuse	Water withdrawal Drinking water	No

1. Includes 1 year for reservoir to fill with water 2. Includes pre-construction, reservoir system infrastructure, and environmental mitigation costs 3. Indicates total cost in 2010\$ over the life of the project, discounted at 3% 4. "Annual reservoir maintenance"

All estimates have been rounded to the nearest tenth, numbers may not add up due to rounding errors

# Dog River Reservoir

## Reservoirs: expansion

### Yield

Instream flow assumption	Yield (MGD)	Cost (\$/MG)	Timing (years)		
			Pre-const	Const	Overall <sup>1</sup>
30% AAF	48	300	2-4	6-8	8-12
A7Q10	206	320	2-4	6-8	8-12

### Costs

Instream flow	Capital Cost				Annual Operating Cost				
	Pump & pipe (\$M)	Water treatment (\$M)	Other capital costs <sup>2</sup> (\$M)	Total (\$M)	Annual Pumping (Power) (\$M)	Annual O&M (\$M)	Annual res. maint <sup>4</sup> (\$M)	Total (\$M)	Total cost <sup>3</sup> (\$M)
30% AAF	0	119	112	231	0.7	0.2	0.5	1.4	267
A7Q10	391	438	122	951	8.9	0.4	0.5	9.8	1,202

### Stakeholder sensitivity

Stakeholder sensitivity	Reasons	Permits required	Requires legislation
Some significant sensitivities	Interstate stream, some concern over public acceptance of indirect wastewater reuse	Water withdrawal Drinking water Safe dams 404	No

1. Includes 1 year for reservoir to fill with water 2. Includes pre-construction, reservoir system infrastructure, and environmental mitigation costs 3. Indicates total cost in 2010\$ over the life of the project, discounted at 3% 4. "Annual reservoir maintenance"

All estimates have been rounded to the nearest tenth, numbers may not add up due to rounding errors

# Tussahaw Creek Reservoir

## Reservoirs: expansion

### Yield

Instream flow assumption	Yield (MGD)	Cost (\$/MG)	Timing (years)		
			Pre-const	Const	Overall <sup>1</sup>
A7Q10	20	260	2-4	6-8	8-12

### Costs

Instream flow	Capital Cost				Annual Operating Cost				
	Pump & pipe (\$M)	Water treatment (\$M)	Other capital costs <sup>2</sup> (\$M)	Total (\$M)	Annual Pumping (Power) (\$M)	Annual O&M (\$M)	Annual res. maint <sup>4</sup> (\$M)	Total (\$M)	Total cost <sup>3</sup> (\$M)
A7Q10	0	54	10	64	0.6	0.1	0.5	1.2	95

### Stakeholder sensitivity

Stakeholder sensitivity	Reasons	Permits required	Requires legislation
Contentious	Long movement of water, new use of Jackson Lake, requires FERC and GA Power approval	Water withdrawal Drinking water	No

1. Includes 1 year for reservoir to fill with water 2. Includes pre-construction, reservoir system infrastructure, and environmental mitigation costs 3. Indicates total cost in 2010\$ over the life of the project, discounted at 3% 4. "Annual reservoir maintenance"

All estimates have been rounded to the nearest tenth, numbers may not add up due to rounding errors

# Etowah River Dam #1 Reservoir

## Reservoirs: expansion

### Yield

Instream flow assumption	Yield (MGD)	Cost (\$/MG)	Timing (years)		
			Pre-const	Const	Overall <sup>1</sup>
Site-specific study	40	615	2-4	6-8	8-12

### Costs

Instream flow	Capital Cost				Annual Operating Cost				
	Pump & pipe (\$M)	Water treatment (\$M)	Other capital costs <sup>2</sup> (\$M)	Total (\$M)	Annual Pumping (Power) (\$M)	Annual O&M (\$M)	Annual res. maint <sup>4</sup> (\$M)	Total (\$M)	Total cost <sup>3</sup> (\$M)
Site-specific study	91	102	158	351	3.5	0.3	0.5	4.3	460

### Stakeholder sensitivity

Stakeholder sensitivity	Reasons	Permits required	Requires legislation
Some significant sensitivities	COE permit for new reservoir, EPD approval of instream flow, interstate stream, limited yield	Water withdrawal Drinking water Safe dams 404	No

1. Includes 1 year for reservoir to fill with water 2. Includes pre-construction, reservoir system infrastructure, and environmental mitigation costs 3. Indicates total cost in 2010\$ over the life of the project, discounted at 3% 4. "Annual reservoir maintenance"

All estimates have been rounded to the nearest tenth, numbers may not add up due to rounding errors

# Newton County Bear Creek Reservoir

Reservoirs: new build

## Yield

Instream flow assumption	Yield (MGD)	Cost (\$/MG)	Timing (years)		
			Pre-const	Const	Overall <sup>1</sup>
M7Q10	20	780	2-4	6-8	8-12

## Costs

Instream flow	Capital Cost				Annual Operating Cost				
	Pump & pipe (\$M)	Water treatment (\$M)	Other capital costs <sup>2</sup> (\$M)	Total (\$M)	Annual Pumping (Power) (\$M)	Annual O&M (\$M)	Annual res. maint <sup>4</sup> (\$M)	Total (\$M)	Total cost <sup>3</sup> (\$M)
M7Q10	163	54	8	225	1.7	0.1	0.5	2.3	285

## Stakeholder sensitivity

Stakeholder sensitivity	Reasons	Permits required	Requires legislation
Some significant sensitivities	Long distance movement of water, new use of Lake Jackson (FERC and Georgia Power Co. approval , COE permit for new reservoir	Water withdrawal Drinking water Safe dams 404	No

1. Includes 1 year for reservoir to fill with water 2. Includes pre-construction, reservoir system infrastructure, and environmental mitigation costs 3. Indicates total cost in 2010\$ over the life of the project, discounted at 3% 4. "Annual reservoir maintenance"

All estimates have been rounded to the nearest tenth, numbers may not add up due to rounding errors

# Hard Labor Creek Reservoir

Reservoirs: new build

## Yield

Instream flow assumption	Yield (MGD)	Cost (\$/MG)	Timing (years)		
			Pre-const	Const	Overall <sup>1</sup>
Site-specific study	40	1,000	2-4	6-8	8-12

## Costs

Instream flow	Capital Cost				Annual Operating Cost				
	Pump & pipe (\$M)	Water treatment (\$M)	Other capital costs <sup>2</sup> (\$M)	Total (\$M)	Annual Pumping (Power) (\$M)	Annual O&M (\$M)	Annual res. maint <sup>4</sup> (\$M)	Total (\$M)	Total cost <sup>3</sup> (\$M)
Site-specific study	249	103	274	626	4.1	0.2	0.5	4.8	750

## Stakeholder sensitivity

Stakeholder sensitivity	Reasons	Permits required	Requires legislation
Some minor sensitivities	Long distance movement of water	Drinking water	No

1. Includes 1 year for reservoir to fill with water 2. Includes pre-construction, reservoir system infrastructure, and environmental mitigation costs 3. Indicates total cost in 2010\$ over the life of the project, discounted at 3% 4. "Annual reservoir maintenance"

All estimates have been rounded to the nearest tenth, numbers may not add up due to rounding errors

# South Fulton Bear Creek Reservoir

Reservoirs: new build

	Instream flow assumption	Yield (MGD)	Cost (\$/MG)	Timing (years)		
				Pre-const	Const	Overall <sup>1</sup>
Yield	30% AAF	10	700	2-4	6-8	8-12
	A7Q10	135	350	2-4	6-8	8-12

	Capital Cost				Annual Operating Cost				
	Instream flow	Pump & pipe (\$M)	Water treatment (\$M)	Other capital costs <sup>2</sup> (\$M)	Total (\$M)	Annual Pumping (Power) (\$M)	Annual O&M (\$M)	Annual res. maint <sup>4</sup> (\$M)	Total (\$M)
Costs	30% AAF	0	27	68	95	0.1	0.1	0.5	0.6
	A7Q10	332	300	87	719	5.6	0.2	0.5	6.3

Stakeholder sensitivity	Stakeholder sensitivity	Reasons	Permits required	Requires legislation
	Contentious	Public acceptance of indirect wastewater reuse, interstate stream, COE permit for new reservoir, EPD approval of instream flow, City of Atlanta opposition	Water withdrawal Drinking water Safe dams 404	Yes (SDS restriction)

1. Includes 1 year for reservoir to fill with water 2. Includes pre-construction, reservoir system infrastructure, and environmental mitigation costs 3. Indicates total cost in 2010\$ over the life of the project, discounted at 3% 4. "Annual reservoir maintenance"

All estimates have been rounded to the nearest tenth, numbers may not add up due to rounding errors

# Hall County Glades Reservoir

Reservoirs: new build

## Yield

Instream flow assumption	Yield (MGD)	Cost (\$/MG)	Timing (years)		
			Pre-const	Const	Overall <sup>1</sup>
30% AAF	85	620	2-4	6-8	8-12
A7Q10	100	550	2-4	6-8	8-12

## Costs

Instream flow	Capital Cost				Annual Operating Cost				
	Pump & pipe (\$M)	Water treatment (\$M)	Other capital costs <sup>2</sup> (\$M)	Total (\$M)	Annual Pumping (Power) (\$M)	Annual O&M (\$M)	Annual res. maint <sup>4</sup> (\$M)	Total (\$M)	Total cost <sup>3</sup> (\$M)
30% AAF	355	201	226	782	6.8	0.3	0.5	7.6	978
A7Q10	364	226	213	803	7.2	0.3	0.5	8.0	1,008

## Stakeholder sensitivity

Stakeholder sensitivity	Reasons	Permits required	Requires legislation
Contentious	COE permit for reservoir, interstate basin, EPD approval of instream flow, long distance movement of water	Water withdrawal Drinking water Safe dams 404	Yes (IBT)

1. Includes 1 year for reservoir to fill with water 2. Includes pre-construction, reservoir system infrastructure, and environmental mitigation costs 3. Indicates total cost in 2010\$ over the life of the project, discounted at 3% 4. "Annual reservoir maintenance"

All estimates have been rounded to the nearest tenth, numbers may not add up due to rounding errors

# Richland Creek Reservoir

Reservoirs: new build

## Yield

Instream flow assumption	Yield (MGD)	Cost (\$/MG)	Timing (years)		
			Pre-const	Const	Overall <sup>1</sup>
A7Q10	48	300	2-4	6-8	8-12

## Costs

Instream flow	Capital Cost				Annual Operating Cost				
	Pump & pipe (\$M)	Water treatment (\$M)	Other capital costs <sup>2</sup> (\$M)	Total (\$M)	Annual Pumping (Power) (\$M)	Annual O&M (\$M)	Annual res. maint <sup>4</sup> (\$M)	Total (\$M)	Total cost <sup>3</sup> (\$M)
A7Q10	114	89	138	341	4.0	0.2	0.5	4.7	462

## Stakeholder sensitivity

Stakeholder sensitivity	Reasons	Permits required	Requires legislation
Contentious	COE permit for reservoir, potential IBT, interstate basin, EPD approval of instream flow	Water withdrawal Drinking water Safe dams 404	Yes (IBT)

1. Includes 1 year for reservoir to fill with water 2. Includes pre-construction, reservoir system infrastructure, and environmental mitigation costs 3. Indicates total cost in 2010\$ over the life of the project, discounted at 3% 4. "Annual reservoir maintenance"

All estimates have been rounded to the nearest tenth, numbers may not add up due to rounding errors

# Richland Creek Reservoir (Larger)

Reservoirs: new build

## Yield

Instream flow assumption	Yield (MGD)	Cost (\$/MG)	Timing (years)		
			Pre-const	Const	Overall <sup>1</sup>
A7Q10	48	300	2-4	6-8	8-12

## Costs

Instream flow	Capital Cost				Annual Operating Cost				Total cost <sup>3</sup> (\$M)
	Pump & pipe (\$M)	Water treatment (\$M)	Other capital costs <sup>2</sup> (\$M)	Total (\$M)	Annual Pumping (Power) (\$M)	Annual O&M (\$M)	Annual res. maint <sup>4</sup> (\$M)	Total (\$M)	
A7Q10	171	185	260	616	7.8	0.3	0.5	8.6	837

## Stakeholder sensitivity

Stakeholder sensitivity	Reasons	Permits required	Requires legislation
Contentious	COE permit for reservoir, potential IBT, interstate basin, EPD approval of instream flow	Water withdrawal Drinking water Safe dams 404	Yes (IBT)

1. Includes 1 year for reservoir to fill with water 2. Includes pre-construction, reservoir system infrastructure, and environmental mitigation costs 3. Indicates total cost in 2010\$ over the life of the project, discounted at 3% 4. "Annual reservoir maintenance"

All estimates have been rounded to the nearest tenth, numbers may not add up due to rounding errors

# New Reservoir NW of Forsyth

Reservoirs: new build

## Yield

Instream flow assumption	Yield (MGD)	Cost (\$/MG)	Timing (years)		
			Pre-const	Const	Overall <sup>1</sup>
30% AAF	85	510	2-4	6-8	8-12
A7Q10	90	500	2-4	6-8	8-12

## Costs

Instream flow	Capital Cost				Annual Operating Cost				Total cost <sup>3</sup> (\$M)
	Pump & pipe (\$M)	Water treatment (\$M)	Other capital costs <sup>2</sup> (\$M)	Total (\$M)	Annual Pumping (Power) (\$M)	Annual O&M (\$M)	Annual res. maint <sup>4</sup> (\$M)	Total (\$M)	
30% AAF	161	202	294	657	5.3	0.3	0.5	6.1	815
A7Q10									

## Stakeholder sensitivity

Stakeholder sensitivity	Reasons	Permits required	Requires legislation
Contentious	COE permit for new reservoir, interstate stream, EPD approval of instream flow	Water withdrawal Drinking water Safe dams 404	No

1. Includes 1 year for reservoir to fill with water 2. Includes pre-construction, reservoir system infrastructure, and environmental mitigation costs 3. Indicates total cost in 2010\$ over the life of the project, discounted at 3% 4. "Annual reservoir maintenance"

All estimates have been rounded to the nearest tenth, numbers may not add up due to rounding errors

# New Reservoir E of Gwinnett

Reservoirs: new build

## Yield

Instream flow assumption	Yield (MGD)	Cost (\$/MG)	Timing (years)		
			Pre-const	Const	Overall <sup>1</sup>
30% AAF	50	1,275	2-4	6-8	8-12
A7Q10	50	1,175	2-4	6-8	8-12

## Costs

Instream flow	Capital Cost				Annual Operating Cost				Total cost <sup>3</sup> (\$M)
	Pump & pipe (\$M)	Water treatment (\$M)	Other capital costs <sup>2</sup> (\$M)	Total (\$M)	Annual Pumping (Power) (\$M)	Annual O&M (\$M)	Annual res. maint <sup>4</sup> (\$M)	Total (\$M)	
30% AAF	497	122	343	962	7.1	0.3	0.5	7.9	1,170
A7Q10									

## Stakeholder sensitivity

Stakeholder sensitivity	Reasons	Permits required	Requires legislation
Contentious	Potential IBT, potential interstate stream, long distance movement of water, COE permit for new reservoir, EPD approval of instream flow	Water withdrawal Drinking water Safe dams 404	Yes (IBT)

1. Includes 1 year for reservoir to fill with water 2. Includes pre-construction, reservoir system infrastructure, and environmental mitigation costs 3. Indicates total cost in 2010\$ over the life of the project, discounted at 3% 4. "Annual reservoir maintenance"

All estimates have been rounded to the nearest tenth, numbers may not add up due to rounding errors

# Quarry options

Reservoirs: convert quarries

## Yield

Size of quarry	Yield (MGD)	Cost (\$/MG)	Timing (years)		
			Pre-const	Const	Overall <sup>1</sup>
Small (~3 BG)	5	1,000	2-4	6-8	8-12
Large (~15 BG)	35	600 - 1,200	2-4	6-8	8-12

## Costs

Size of quarry	Capital Cost				Annual Operating Cost				
	Pump & pipe (\$M)	Water treatment (\$M)	Other capital costs <sup>2</sup> (\$M)	Total (\$M)	Annual Pumping (Power) (\$M)	Annual O&M (\$M)	Annual res. maint <sup>4</sup> (\$M)	Total (\$M)	Total cost <sup>3</sup> (\$M)
Small	37	23	34	95	1.1	0.1	0.5	1.7	140
Large	78	95	77 – 577	250 – 750	3.6	0.2	0.5	4.3	360 - 860

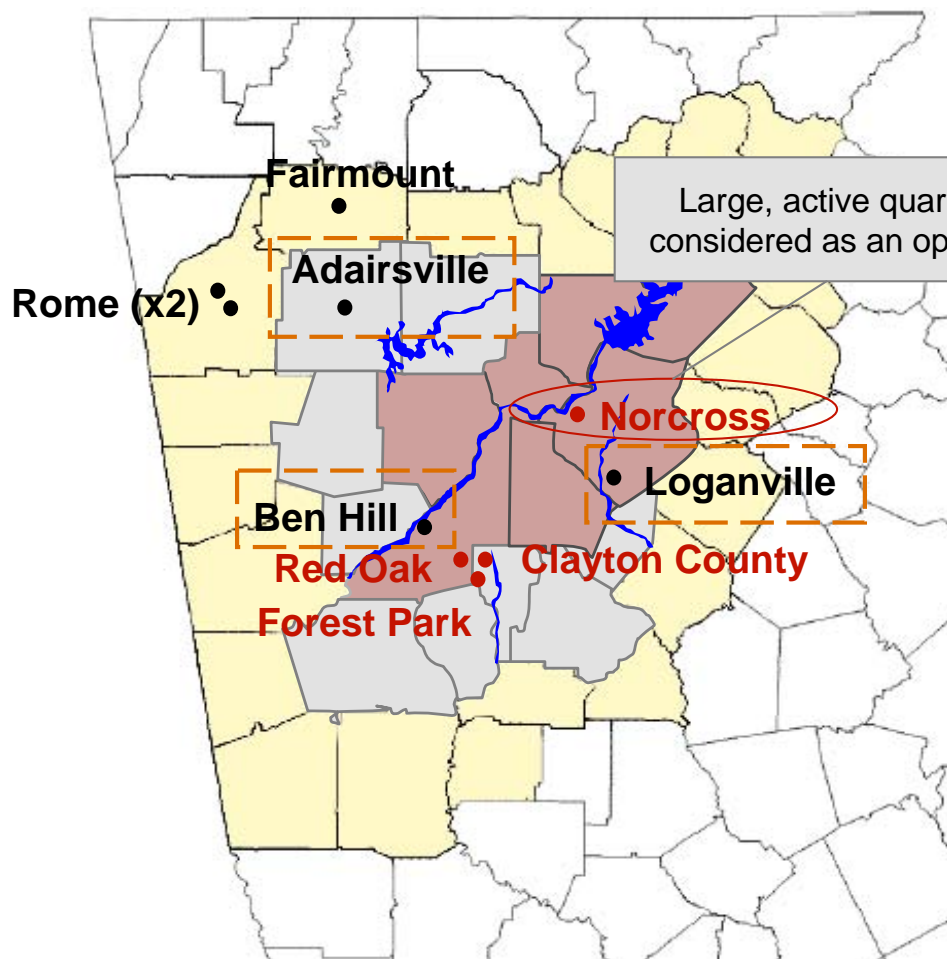
## Stakeholder sensitivity

Stakeholder sensitivity	Reasons	Permits required	Requires legislation
Some minor sensitivities	Potential long distance movement of water, highly uncertain acquisition costs of active quarries	Water withdrawal Drinking water	No

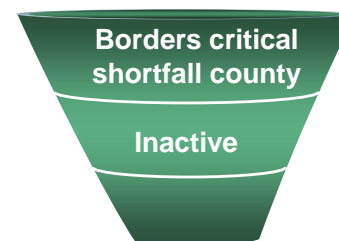
1. Includes 1 year for reservoir to fill with water 2. Includes pre-construction, reservoir system infrastructure, and environmental mitigation costs 3. Indicates total cost in 2010\$ over the life of the project, discounted at 3% 4. "Annual reservoir maintenance"

All estimates have been rounded to the nearest tenth, numbers may not add up due to rounding errors

# Three small, inactive quarries within Metro area could provide 5-25 MGD yield at cost of \$1,000-1,500/ MG



Filtering for inactive status + proximity to critical shortfall area suggests 3 potential options



3 Quarries

2 – 8 MGD Estimated yield per quarry

~5 – 25 MGD Total small quarry potential

- MNGWPD<sup>2</sup> counties
- Critical shortfall county
- Inactive ("abandoned") quarries
- Active quarries

1. In development for water storage use by City of Atlanta 2. Metropolitan North Georgia Water Planning District  
Source: EPD - Metropolitan Atlanta abandoned quarries (greater than 50 acres); City of Atlanta DWM - Atlanta Area Quarry Inventory

# Overview of key options: Capture

## Capture

- Reservoirs and quarries
- **Groundwater and ASR**
- Desalination
- Water quality / treatment

# ASR/Groundwater: *context*

## Ground Water System

### What is an aquifer?

- A geological formation containing water which supplies wells and springs.

### What is groundwater?

- Water contained within an aquifer

### How is groundwater used?

- Over 50% of the US population uses ground water as their primary water source
- Many cities use ground water as primary supply or to augment other supply sources

### Is groundwater used in Georgia?

- Groundwater serves ~20% of all GA water use
- Largest uses are irrigation, public supply (drinking, household use, etc), and industrial

### Is groundwater used in Metro North Georgia?

- Groundwater <1% of Metro public supply use
- Regional geology not conducive to large yield, but does provide some yield in localized areas

## Aquifer Storage and Recovery

### What is ASR?

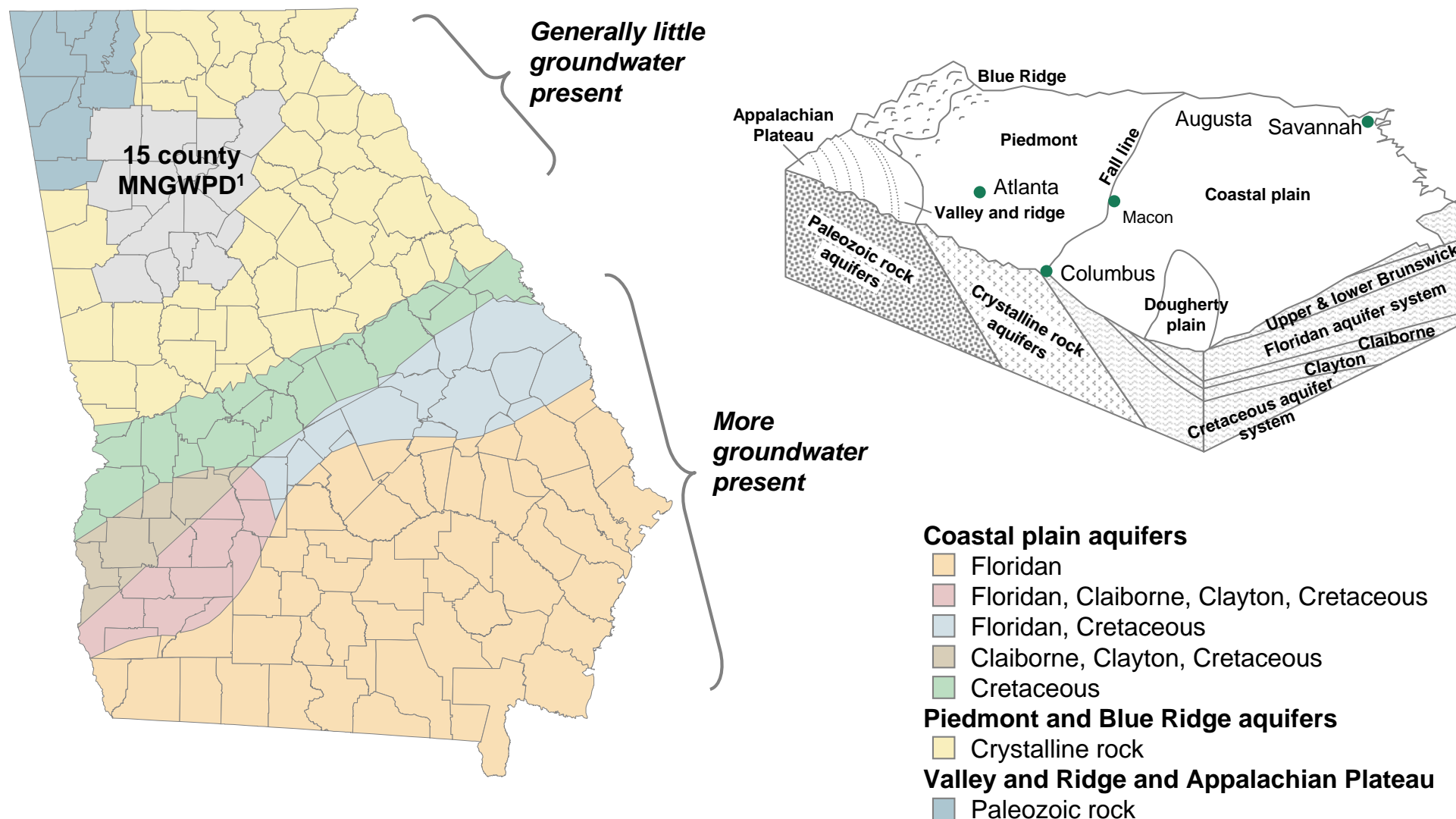
- A system designed to inject surplus water into an aquifer for extraction at a later time
- Can be thought of as an underground reservoir without evaporative losses and with minimal environmental impacts

### How is ASR used?

- When water is available (periods of high flow or off-peak demand), excess water is injected into the aquifer
- During peak demand periods, water is recovered to augment supply
- Note: water would be treated both before injection and after recovery in Georgia
- There are currently ~95 ASR well fields in operation in 20 US states
- Etowah Water Bank, currently in development in Rome, GA, is an example of ASR

# Major aquifers in Georgia

Geologic formations in south GA generally contain more abundant groundwater



1. Metropolitan North Georgia Water Planning District

# Description of options in consideration

## Topic: Aquifer Storage and Recovery (ASR) / Groundwater (I)

Groundwater	Option	Description	Rationale	Key challenges	Timing (years)
	1 Lawrenceville	New groundwater supply system in Lawrenceville (Gwinnett)	Hydrogeologic investigations completed, 6 existing wells ready for permitting; 6 new well sites available (70-350 gallons per minute (gpm))	EPD permitting; many wells in industrial or highly developed areas; minor volatile organic compounds (VOC's) locally present in groundwater	~3
	2 Suwanee to Gainesville corridor	New groundwater supply system in Suwanee to Gainesville Corridor (Hall County)	Area contains unique geologic environment that locally contains marbles; generally highly solutioned and provide very high yields (200-400 gpm); some existing wells produce up to 1 MGD; option plans for 12 wells, 5 MGD total	EPD permitting; by nature, wells in marbles very turbid; may require additional treatment; potential for land subsidence if over pumped	~3
	3				
	4 Spalding County, near Griffin	New groundwater supply system in Spalding county, reduce upper Chattahoochee withdrawals	Unique geologic environment near Griffin would allow for very productive well fields (100-600 gpm); existing water supply and finished water lines in area	EPD permitting; many existing wells and new well sites are in industrial areas, pumping during summer of 2000 showed low levels of VOC's	~3
	5 Bartow County	New groundwater supply system in Bartow county, provide additional water to Bartow, Cobb, Paulding counties	Geology of the Valley and Ridge had provided extremely high yielding wells, ranging up to 3,000 gpm (4.3 MGD); new wells for Emerson are promising; within 15 county Metro region	EPD permitting; potential for land subsidence if not properly managed; could require extensive development to remove turbidity from the system	~4
	South Fulton (Palmetto)	New groundwater supply system in South Fulton (Palmetto), reduce upper Chattahoochee withdrawals	Many high yielding wells (80-400 gpm) have been drilled for industrial uses; none of the wells have been used or tested for drinking water	EPD permitting; retrofitting wells to drinking water standards; existing wells are privately owned	~4

Source: Technical Advisory Panel

# Description of options in consideration

## Topic: Aquifer Storage and Recovery (ASR) / Groundwater (II)

	Option	Description	Rationale	Key challenges	Timing (years)
Groundwater	6 Large, south GA supply system	Develop large (~200 MGD) groundwater supply system in south GA, create new water authority to manage supply, Metro area buy water	High yield aquifers in SW GA; well field development will financially benefit rural GA	Public perception (Atlanta taking water), possible basin transfer issues.	8-10
	7 Non-potable groundwater supply	Use localized groundwater systems for non-potable uses in Gwinnett, Hall, Forsyth such as irrigation, cooling facilities, industrial process water	Replace use of treated water with groundwater for non-potable applications; process has been operating for decades, with great success, by those unable to receive adequate service from government-mandated central water suppliers	Resistance to invest in individual well system. Irrigation use is seasonal, so demand in summer is reduced.	~3
ASR	8 ASR northwest of Metro area	Install ASR system northwest of Metro area; provide additional yield directly to Metro area counties (Cobb, Bartow, Paulding), pump water to existing WTP's	Develop ASR well field in Floyd and/or Bartow Counties; store off-peak treated water; reduces evaporative loss from reservoirs; meet peak demand requirements	Public perception (Atlanta taking water), permitting; requires feasibility testing in NW Georgia; ultimately yield is based on excess water supply available to recharge ASR well field	4-6
	9 ASR in Lawrenceville area	Install ASR system in Lawrenceville to provide additional yield directly to Gwinnett	Use ASR to supplement recharge in the Lawrenceville system; store off-peak treated water; provide water to Gwinnett County	Permitting due to well head protection issues (physical security of wells against tampering); public perception of contamination issues (VOC's)	2-4

Source: Technical Advisory Panel

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# Detailed cost estimates for options

Team: Aquifer Storage and Recovery (ASR) / groundwater

	Option	Capital Cost				Annual Operating Cost			
		Pump & pipe (\$M)	Water treatment (\$M)	Other capital costs (\$M)	Total (\$M)	Annual Pumping (Power) (\$M)	Annual O&M (\$M)	Other annual costs (\$M)	Total cost <sup>2</sup> (\$M)
Ground-water	Lawrenceville groundwater	3.9	0.3	0.3	4.5	0.5	0.6	0.1	35
	Gainesville groundwater	9.5	0.3	0.4	10.2	0.4	0.5	0.1	35
	Spalding county groundwater	6.3	0.3	0.5	7.2	0.5	0.6	0.1	35
	Bartow groundwater	9.5	0.5	1.0	11.0	0.5	0.7	0.1	45
	Palmetto groundwater	2.6	0.3	0.4	3.2	0.2	0.2	0.1	15
	South GA groundwater	2,535	10	102	2,647	50	37	37	5,840
	Groundwater for non-potable use in Metro area	n/a	n/a	8	8	1	0	0	35
ASR	ASR northwest of Metro area	350	n/a <sup>1</sup>	100	450	2.9	5.5	0	670
	ASR to augment Lawrenceville groundwater	3.9	n/a <sup>1</sup>	15	19	0.7	1.1	0	65

1. Option would use available capacity at existing WTP's 2. Indicates total cost in 2010\$ over the life of the project, discounted at 3%  
All estimates have been rounded to the nearest tenth, numbers may not add up due to rounding errors

# Qualitative estimates of implementation ease

## Topic: Aquifer Storage and Recovery (ASR) / groundwater

	Option	Requires legislation?	Requires permitting?	Legal uncertainty?	Stakeholder sensitivity <sup>3</sup>
<b>Ground-water</b>	Lawrenceville groundwater	No <sup>1</sup>	Yes	No	4
	Gainesville groundwater	No <sup>1</sup>	Yes	No	4
	Spalding county groundwater	No <sup>1</sup>	Yes	No	4
	Bartow groundwater	No <sup>1</sup>	Yes	No	4
	Palmetto groundwater	No <sup>1</sup>	Yes	No	4
	South GA groundwater	Yes, to enact water authority	Yes	Yes	2
	Groundwater for non-potable use in Metro area	No <sup>1</sup>	Yes	No	4
<b>ASR</b>	ASR northwest of Metro area	No <sup>2</sup>	Yes	Yes	3
	ASR to augment Lawrenceville groundwater	No <sup>1</sup>	Yes	Yes	4

1. No change in laws required, but presence of VOC's would add time and cost to permitting process 2. May require political involvement due to perceived water rights issues 3. 1 = "highly contentious" to 5 = "no significant sensitivities noted"

Note: Estimates based on 50 year project life

# Lawrenceville groundwater

## Yield

Yield (MGD)	Cost (\$/MG)	Timing (years)		
		Pre-const	Const	Overall
~6	300	2	1	3

## Costs

Capital Cost				Annual Operating Cost				
Pump & pipe (\$M)	Water treatment (\$M)	Other capital costs (\$M)	Total (\$M)	Annual Pumping (Power) (\$M)	Annual WTP cost (\$M)	Annual O&M (\$M)	Total (\$M)	Total cost <sup>1</sup> (\$M)
3.9	0.3	0.3	4.5	0.5	0.6	0.1	1.1	35

## Stakeholder sensitivity

Stakeholder sensitivity	Reasons	Permits required	Requires legislation
Some minor sensitivities	Many wells in industrial or highly developed areas, minor Volatile Organic Compounds locally present in ground water	Water withdrawal Drinking water	No

1. Indicates total cost in 2010\$ over the life of the project, discounted at 3%  
 All estimates have been rounded to the nearest tenth, numbers may not add up due to rounding errors  
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# Gainesville groundwater

## Yield

Yield (MGD)	Cost (\$/MG)	Timing (years)		
		Pre-const	Const	Overall
~5	375	2	1	3

## Costs

Capital Cost				Annual Operating Cost				
Pump & pipe (\$M)	Water treatment (\$M)	Other capital costs (\$M)	Total (\$M)	Annual Pumping (Power) (\$M)	Annual WTP cost (\$M)	Annual O&M (\$M)	Total (\$M)	Total cost <sup>1</sup> (\$M)
9.5	0.3	0.4	10.2	0.4	0.5	0.1	0.9	35

## Stakeholder sensitivity

Stakeholder sensitivity	Reasons	Permits required	Requires legislation
Some minor sensitivities	Potential development of land subsidence if over pumped	Water withdrawal Drinking water	No

1. Indicates total cost in 2010\$ over the life of the project, discounted at 3%  
 All estimates have been rounded to the nearest tenth, numbers may not add up due to rounding errors  
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# Spalding County groundwater

## Yield

Yield (MGD)	Cost (\$/MG)	Timing (years)		
		Pre-const	Const	Overall
~6	325	2	1	3

## Costs

Capital Cost				Annual Operating Cost				
Pump & pipe (\$M)	Water treatment (\$M)	Other capital costs (\$M)	Total (\$M)	Annual Pumping (Power) (\$M)	Annual WTP cost (\$M)	Annual O&M (\$M)	Total (\$M)	Total cost <sup>1</sup> (\$M)
6.3	0.3	0.5	7.2	0.5	0.6	0.1	1.1	35

## Stakeholder sensitivity

Stakeholder sensitivity	Reasons	Permits required	Requires legislation
Some minor sensitivities	Potential low level Volatile Organic Compounds present in ground water	Water withdrawal Drinking water	No

1. Indicates total cost in 2010\$ over the life of the project, discounted at 3%  
 All estimates have been rounded to the nearest tenth, numbers may not add up due to rounding errors  
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# Bartow groundwater

## Yield

Yield (MGD)	Cost (\$/MG)	Timing (years)		
		Pre-const	Const	Overall
~7	345	3	1	4

## Costs

Capital Cost				Annual Operating Cost				
Pump & pipe (\$M)	Water treatment (\$M)	Other capital costs (\$M)	Total (\$M)	Annual Pumping (Power) (\$M)	Annual WTP cost (\$M)	Annual O&M (\$M)	Total (\$M)	Total cost <sup>1</sup> (\$M)
9.5	0.5	1.0	11.0	0.5	0.7	0.1	1.3	45

## Stakeholder sensitivity

Stakeholder sensitivity	Reasons	Permits required	Requires legislation
Some significant sensitivities; some chance of delayed implementation	Potential for development of land subsidence if not properly managed	Water withdrawal Drinking water	No

1. Indicates total cost in 2010\$ over the life of the project, discounted at 3%  
 All estimates have been rounded to the nearest tenth, numbers may not add up due to rounding errors  
 144200-01 TF Mtg 2-23 Nov-v22.ppt

# Palmetto groundwater

## Yield

Yield (MGD)	Cost (\$/MG)	Timing (years)		
		Pre-const	Const	Overall
~2	375	3	1	4

## Costs

Capital Cost				Annual Operating Cost				
Pump & pipe (\$M)	Water treatment (\$M)	Other capital costs (\$M)	Total (\$M)	Annual Pumping (Power) (\$M)	Annual WTP cost (\$M)	Annual O&M (\$M)	Total (\$M)	Total cost <sup>1</sup> (\$M)
2.6	0.3	0.4	3.2	0.2	0.2	0.1	0.4	15

## Stakeholder sensitivity

Stakeholder sensitivity	Reasons	Permits required	Requires legislation
Some minor sensitivities	Requires retrofitting wells to drinking water standards, existing wells privately owned	Water withdrawal Drinking water	No

1. Indicates total cost in 2010\$ over the life of the project, discounted at 3%  
All estimates have been rounded to the nearest tenth, numbers may not add up due to rounding errors  
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# South GA groundwater

## Yield

Yield (MGD)	Cost (\$/MG)	Timing (years)		
		Pre-const	Const	Overall
~200	1,600	2-3	3-10	5-13

## Costs

Capital Cost				Annual Operating Cost				
Pump & pipe (\$M)	Water treatment (\$M)	Other capital costs (\$M)	Total (\$M)	Annual Pumping (Power) (\$M)	Annual WTP cost (\$M)	Annual O&M (\$M)	Total (\$M)	Total cost <sup>1</sup> (\$M)
2,535	10	102	2,647	50	37	37	124	5,840

## Stakeholder sensitivity

Stakeholder sensitivity	Reasons	Permits required	Requires legislation
Contentious	Potential opposition from existing ground water users (agriculture, industry, municipalities), interbasin transfer, sustainable yields subject to results of ongoing EPD modeling efforts	Water withdrawal Drinking water	Yes (IBT)

1. Indicates total cost in 2010\$ over the life of the project, discounted at 3%  
All estimates have been rounded to the nearest tenth, numbers may not add up due to rounding errors  
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# Groundwater for non-potable use

## Yield

Yield (MGD)	Cost (\$/MG)	Timing (years)		
		Pre-const	Const	Overall
~15	155	2	1	3

## Costs

Capital Cost				Annual Operating Cost				
Pump & pipe (\$M)	Water treatment (\$M)	Other capital costs (\$M)	Total (\$M)	Annual Pumping (Power) (\$M)	Annual WTP cost (\$M)	Annual O&M (\$M)	Total (\$M)	Total cost <sup>1</sup> (\$M)
n/a	n/a	8	8	1	0	0	1	35

## Stakeholder sensitivity

Stakeholder sensitivity	Reasons	Permits required	Requires legislation
No significant sensitivities noted		Water withdrawal	No

1. Indicates total cost in 2010\$ over the life of the project, discounted at 3%  
 All estimates have been rounded to the nearest tenth, numbers may not add up due to rounding errors  
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# ASR NW of Metro area

## Yield

Yield (MGD)	Cost (\$/MG)	Timing (years)		
		Pre-const	Const	Overall
~20	1,840	1-2	2-4	4-6

## Costs

Capital Cost				Annual Operating Cost				
Pump & pipe (\$M)	Water treatment (\$M)	Other capital costs (\$M)	Total (\$M)	Annual Pumping (Power) (\$M)	Annual WTP cost (\$M)	Annual O&M (\$M)	Total (\$M)	Total cost <sup>1</sup> (\$M)
350	n/a <sup>2</sup>	100	450	2.9	5.5	0	8.5	670

## Stakeholder sensitivity

Stakeholder sensitivity	Reasons	Permits required	Requires legislation
Some significant sensitivities	Concerns over "contaminating" ground water sources with surface water	Water withdrawal Drinking water	No

1. Indicates total cost in 2010\$ over the life of the project, discounted at 3% 2. Utilize existing WTP capacity  
All estimates have been rounded to the nearest tenth, numbers may not add up due to rounding errors

# ASR to augment Lawrenceville groundwater

## Yield

Yield (MGD)	Cost (\$/MG)	Timing (years)		
		Pre-const	Const	Overall
~4	900	1	2-4	3-5

## Costs

Capital Cost				Annual Operating Cost				
Pump & pipe (\$M)	Water treatment (\$M)	Other capital costs (\$M)	Total (\$M)	Annual Pumping (Power) (\$M)	Annual WTP cost (\$M)	Annual O&M (\$M)	Total (\$M)	Total cost <sup>1</sup> (\$M)
3.9	n/a <sup>2</sup>	15	19	0.7	1.1	0	1.8	65

## Stakeholder sensitivity

Stakeholder sensitivity	Reasons	Permits required	Requires legislation
Some significant sensitivities	Concerns over "contaminating" ground water sources with surface water	Water withdrawal Drinking water	No

1. Indicates total cost in 2010\$ over the life of the project, discounted at 3% 2. Utilize existing WTP capacity  
All estimates have been rounded to the nearest tenth, numbers may not add up due to rounding errors

# Capture

## Capture

- Reservoirs and quarries
- Groundwater and ASR
- **Desalination**
- Water quality / treatment

# Savannah desalination plant

## Yield

Yield (MGD)	Cost (\$/MG)	Timing (years)		
		Pre-const	Const	Overall
~200	6,000	2-3	3-8	5-10

## Costs

Capital Cost				Annual Operating Cost				
Pump & pipe (\$M)	Water treatment (\$M)	Other capital costs (\$M)	Total (\$M)	Annual Pumping (Power) (\$M)	Annual WTP cost (\$M)	Annual O&M (\$M)	Total (\$M)	Total cost <sup>1</sup> (\$M)
9,100	4,600	30	13,730	31	275	n/a	305	21,600

## Stakeholder sensitivity

Stakeholder sensitivity	Reasons	Permits required	Requires legislation
Contentious	Potentially highly sensitive: costly option, possible environmental concerns of disposing highly concentrated saline waste product	Drinking water Other	Yes (IBT)

1. Indicates total cost in 2010\$ over the life of the project, discounted at 3%  
 All estimates have been rounded to the nearest tenth, numbers may not add up due to rounding errors  
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# Capture

## Capture

- Reservoirs and quarries
- Groundwater and ASR
- Desalination
- **Water quality / treatment**

# Water quality/treatment options considered

## Topic: Water quality/treatment

Option	Description	Rationale	Key Challenges	Timing (years)
Septic to sewer conversion	Conversion of septic systems to sewer in critical Metro North counties (Gwinnett, Forsyth and Hall)	<ul style="list-style-type: none"> <li>Reduction in consumptive water use i.e. quicker return of wastewater to treatment plants and ultimately back into the system</li> </ul>	<ul style="list-style-type: none"> <li>High cost of implementation</li> </ul>	8–10

# Cost, yield and timing estimates for options

Topic: Water quality/treatment

Option	Yield (MGD)	\$/MG	Timing (yrs)			Stakeholder Sensitivity <sup>2</sup>
			Pre- const.	Const.	Total	
Conversion of septic systems to sewer in Gwinnett county	5	6,600 <sup>1</sup>	1	8 – 10	10	3
Conversion of septic systems to sewer in Forsyth county	3	6,600 <sup>1</sup>	1	8 – 10	10	3
Conversion of septic systems to sewer in Hall county	4	6,700 <sup>1</sup>	1	8 - 10	10	3

1. Does not include wastewater treatment cost 2. Rated from 1 – 5 where 1 = Highly sensitive; unlikely to be implemented, 5 = No major stakeholder challenge anticipated

# Septic to sewer conversion options

Topic: water quality/treatment

Yield	Timing (years)				
	County	Yield (MGD)	Cost (\$/MG)		
				Pre-construction	Construction
	Gwinnett	5	6,600	1	8 – 10
	Forsyth	3	6,600	1	8 – 10
	Hall	4	6,700	1	8 – 10

Costs	Capital Cost				
	County	Pump & Pipe Infrastructure (\$M)	Water treatment (\$M)	Total (\$M)	Annual O&M (\$M)
	Gwinnett	480	0	480	2.4
	Forsyth	336	0	336	1.7
	Hall	408	0	408	2.9

Stakeholder sensitivity	Stakeholder sensitivity	Reasons		Permits required	Requires legislation
	Some significant sensitivity	Economics to implement the option are not justified unless population density is significant		No	No

1. Indicates total cost in 2010\$ over the life of the project, discounted at 3%  
Estimates have been rounded to the nearest integer, numbers may not add up due to rounding errors

# Control

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## Control: water transfers

## Water transfer options considered (I)

Option	Description	Rationale	Key Challenges	Timing (years)
Lake Burton transfer	Transfer water from Lake Burton in the Savannah basin to the main Gwinnett County water treatment plant on Lake Lanier for distribution into the Gwinnett County system	<ul style="list-style-type: none"> <li>• Potential source of water supply to Metro North counties</li> <li>• Mountainous watershed produces high unit runoff</li> <li>• Relatively low environmental impacts to existing water body</li> <li>• Access to relatively high quality water of Lake Burton</li> </ul>	<ul style="list-style-type: none"> <li>• Requires legislative approval to allow transfer of water from outside Metro district</li> <li>• Significant increase to flow volumes in Raper Creek</li> <li>• Lake drawdown may potentially affect high value areas</li> <li>• FERC licensing required for use of GA Power reservoir</li> <li>• Requires legislative approval to allow transfer of water from outside Metro district</li> </ul>	8–10
Lake Hartwell transfer	Transfer water from Lake Hartwell in the Savannah basin to the main Gwinnett County water treatment plant on Lake Lanier for distribution into the Gwinnett County system	<ul style="list-style-type: none"> <li>• Potential source of water supply to Metro North counties</li> <li>• Relatively low environmental impacts to existing water body</li> <li>• Access to relatively high quality water of Lake Hartwell</li> </ul>	<ul style="list-style-type: none"> <li>• Potential opposition by South Carolina &amp; downstream communities</li> <li>• Requires permit to withdraw water</li> <li>• Requires legislative approval to allow transfer of water from outside Metro district</li> </ul>	8–10

## Water transfer options considered (II)

Option	Description	Rationale	Key Challenges	Timing (years)
Tennessee basin transfer	Transfer water from the Tennessee basin to the Metro Water district as a long term supply source	<ul style="list-style-type: none"> <li>• Potential alternate water supply to the entire Metro district</li> <li>• Sustainable, reliable supply from closest, largest fresh water source available</li> </ul>	<ul style="list-style-type: none"> <li>• Requires legislative approval to allow transfer of water from outside Metro district</li> <li>• Legal access must be confirmed</li> <li>• Significant transport distance, capital costs</li> </ul>	8–10
West Point Lake transfer	Transfer water from West Point Lake to a new regional water treatment plant located near Union City, Fulton County. Gwinnett could obtain finished water from DeKalb and Fulton Counties' connections	<ul style="list-style-type: none"> <li>• Potential source of water supply to multiple counties in Metro district</li> <li>• Use of water from an existing lake would create fewer environmental impacts and would have high reliability</li> </ul>	<ul style="list-style-type: none"> <li>• Long distance pumping 'uphill' to Atlanta area</li> </ul>	8–10

# Qualitative assessment of implementation ease for transfer options

Option	Need Legislation	Need Permitting	Need EIS	Legal Uncertainty	Stakeholder Sensitivity <sup>1</sup>
Lake Burton transfer	Yes	Yes	Yes	Yes	1
Lake Hartwell transfer	Yes	Yes	Yes	Yes	1
Tennessee basin transfer	Yes	Yes	Yes	Yes	1
West Point Lake transfer	No	Yes	Yes	Yes	1

1. Rated from 1 – 5 where 1 = Highly sensitive; unlikely to be implemented, 5 = No major stakeholder challenge anticipated

## Detailed cost estimates for transfer options

Option	Capital Cost			Annual Operating Cost			Total cost <sup>2</sup> (\$M)
	Transport Infrastructure <sup>1</sup> (\$M)	Water treatment (\$M)	Total (\$M)	Annual Pumping (Power) (\$M)	Annual O&M (\$M)	Total (\$M)	
Lake Burton transfer	362	0	362	0.6	0.1	0.7	380
Lake Hartwell transfer	1108	0	1,108	5	0.2	5	1,246
Tennessee basin transfer	1,701	492	2,193	29	69	98	4,075
West Point Lake transfer	828	375	1,203	4	28	32	2,027

Note: 1. Includes pump and pipe, intake and storage costs associated with transporting water 2. Indicates total cost in 2010\$ over the life of the project, discounted at 3%  
Estimates have been rounded to the nearest integer, numbers may not add up due to rounding errors

# Lake Burton transfer

## Topic: Integrated supply management

Yield	Timing (years)							
	Scenario	Yield (MGD)	Cost (\$/MG)	Pre-construction	Construction	Overall		
	No return flow	50	416	3 – 5	5	8 – 10		
	With return flow	50	729	3 – 5	5	8 – 10		
Costs	Capital Cost			Annual Operating Cost				
	Scenario	Transport Infrastructure <sup>1</sup> (\$M)	Water treatment (\$M)	Total (\$M)	Annual Pumping Power (\$M)	Annual O&M (\$M)	Total (\$M)	Total cost <sup>2</sup> (\$M)
	No return flow	362	0	362	0.6	0.1	0.7	380
	With return flow	626	0	626	1	0.5	1.5	670
Stakeholder sensitivity	Stakeholder sensitivity	Reasons			Permits required	Requires legislation		
	Highly contentious	Risk of litigation from South Carolina and other downstream communities, Interbasin transfer required, Potential for significant environmental impact			Yes, FERC license for use of GA Power lake	Yes, to allow transfer from outside the Metro district		

1. Includes Includes pump and pipe, intake and storage costs associated with transporting water 2. Indicates total cost in 2010\$ over the life of the project, discounted at 3%  
Estimates have been rounded to the nearest integer, numbers may not add up due to rounding errors

# Lake Hartwell transfer

## Topic: Integrated supply management

Yield	Timing (years)							
	Scenario	Yield (MGD)	Cost (\$/MG)	Pre-construction	Construction	Overall		
	No return flow	100	683	3 – 5	5	8 – 10		
	With return flow	100	1,073	3 – 5	5	8 – 10		
Costs	Capital Cost			Annual Operating Cost				
	Scenario	Transport Infrastructure <sup>1</sup> (\$M)	Water treatment (\$M)	Total (\$M)	Annual Pumping Power (\$M)	Annual O&M (\$M)	Total (\$M)	Total cost <sup>2</sup> (\$M)
	No return flow	1,110	0	1,110	5.2	0.2	5.4	1,250
	With return flow	1,730	0	1,730	8.5	0.5	9	1,960
Stakeholder sensitivity	Stakeholder sensitivity	Reasons			Permits required	Requires legislation		
	Highly contentious	Risk of litigation from South Carolina and other downstream communities, Interbasin transfer required, Potential for significant environmental impact			Yes	Yes, to allow transfer from outside the Metro district		

1. Includes Includes pump and pipe, intake and storage costs associated with transporting water 2. Indicates total cost in 2010\$ over the life of the project, discounted at 3%  
Estimates have been rounded to the nearest integer, numbers may not add up due to rounding errors

# Tennessee basin transfer

## Topic: Integrated supply management

Yield	Timing (years)						
	Yield (MGD)	Cost (\$/MG)	Pre-construction	Construction	Overall		
	250	893	3 - 5	5	8 - 10		
Costs	Capital Cost			Annual Operating Cost			
	Transport Infrastructure <sup>1</sup> (\$M)	Water treatment (\$M)	Total (\$M)	Annual Pumping Power (\$M)	Annual O&M (\$M)	Total (\$M)	Total cost <sup>2</sup> (\$M)
	1,701	492	2193	29	69	98	4,075
Stakeholder sensitivity	Stakeholder sensitivity	Reasons			Permits required	Requires legislation	
	Highly contentious	Legal access to water needs to be confirmed, Interbasin transfer required			Yes	Yes, to allow transfer from outside the Metro area	

1. Includes pump and pipe, intake and storage costs associated with transporting water 2. Indicates total cost in 2010\$ over the life of the project, discounted at 3%  
Estimates have been rounded to the nearest integer, numbers may not add up due to rounding errors; Costs do not account for return of water to originating basin

# West Point Lake transfer

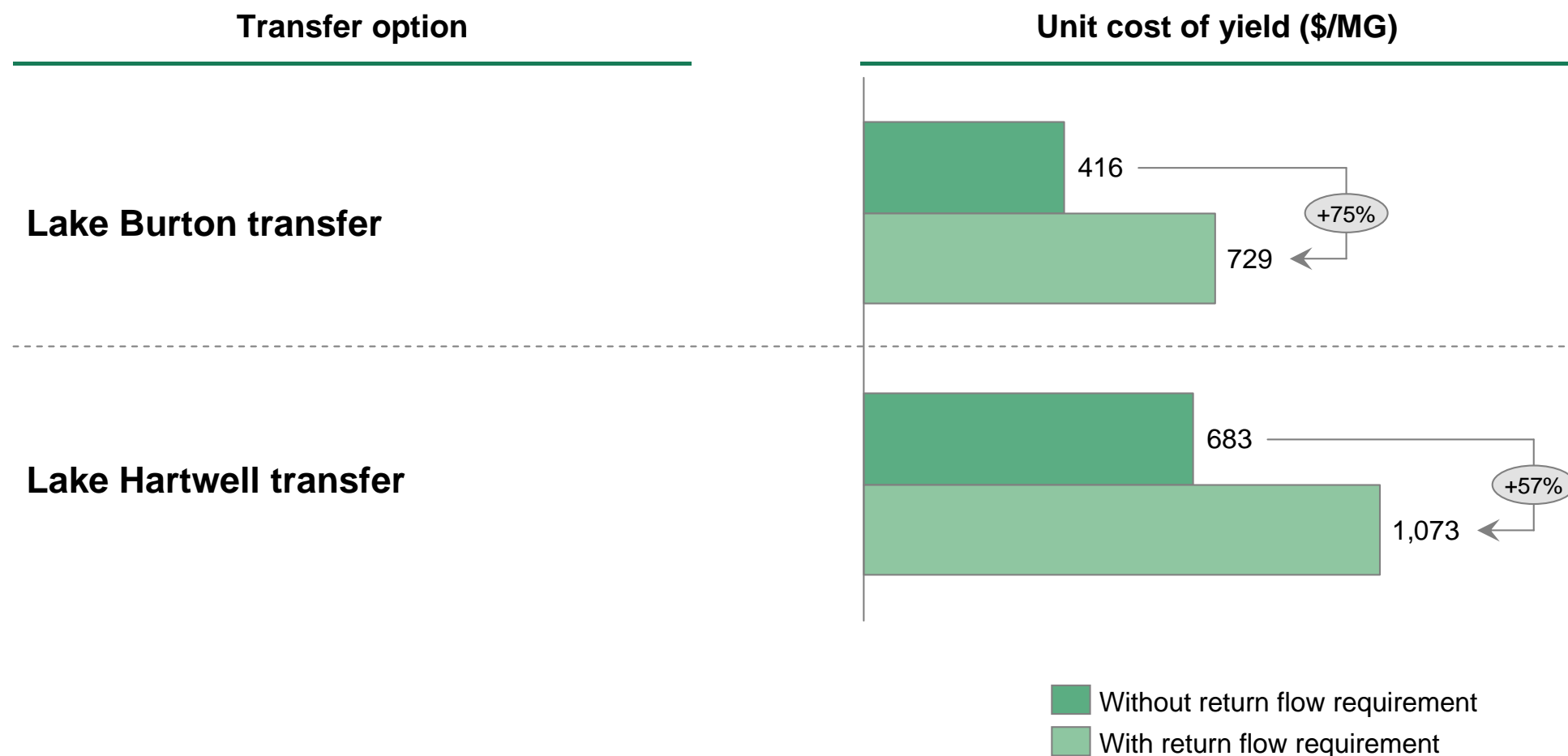
## Topic: Integrated supply management

Yield	Timing (years)						
	Yield (MGD)	Cost (\$/MG)	Pre-construction	Construction	Overall		
	100	1,111	3 - 5	5	8 - 10		
Costs	Capital Cost			Annual Operating Cost			
	Transport Infrastructure <sup>1</sup> (\$M)	Water treatment (\$M)	Total (\$M)	Annual Pumping Power (\$M)	Annual O&M (\$M)	Total (\$M)	Total cost <sup>2</sup> (\$M)
	828	375	1,203	4.5	28	32	2,027
Stakeholder sensitivity	Stakeholder sensitivity	Reasons			Permits required	Requires legislation	
	Highly contentious	Interbasin transfer may be required depending on final destination, Potential for significant environmental impact			Yes	No- would be <i>intra</i> basin transfer	

1. Includes pump and pipe, intake and storage costs associated with transporting water 2. Indicates total cost in 2010\$ over the life of the project, discounted at 3%  
Estimates have been rounded to the nearest integer, numbers may not add up due to rounding errors; Costs do not account for return of water to originating basin

# Unit costs for transfers sensitive to return flow policy

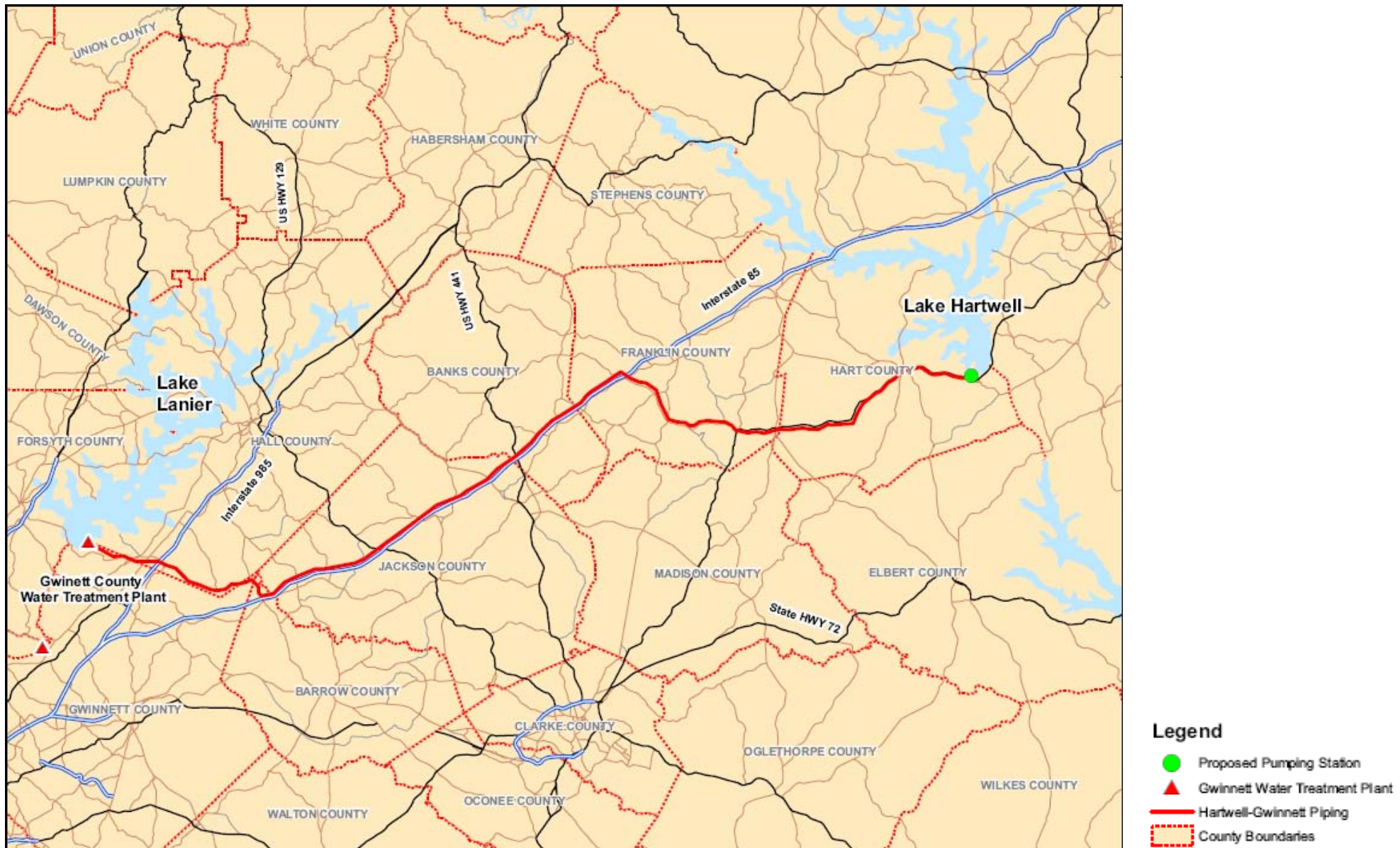
Unit costs increase over 50% with mandated return flow requirement to originating basin



Source: Technical Advisor Panel estimates

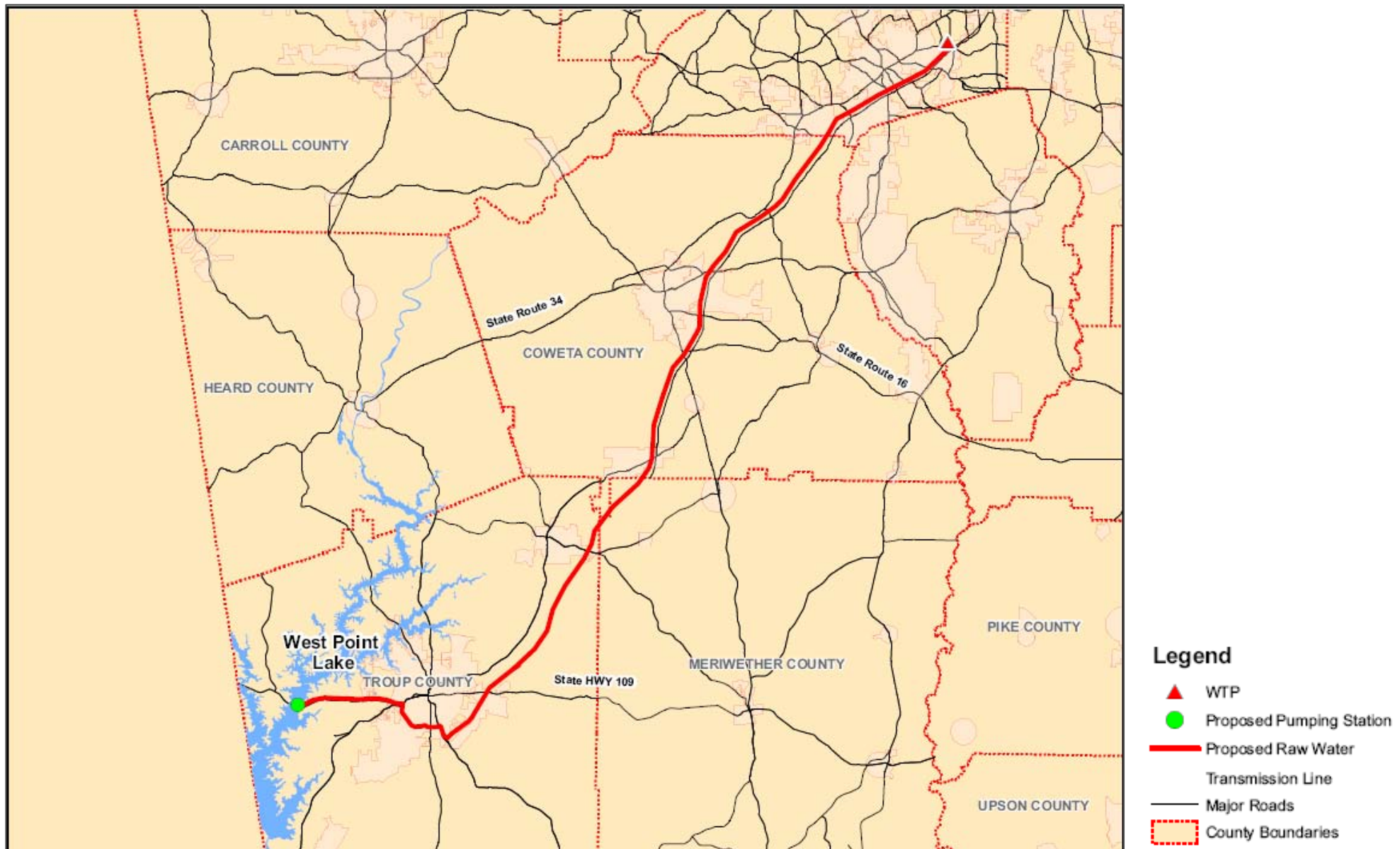
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# Illustration of option: Transfer from Lake Hartwell to Gwinnett WTP



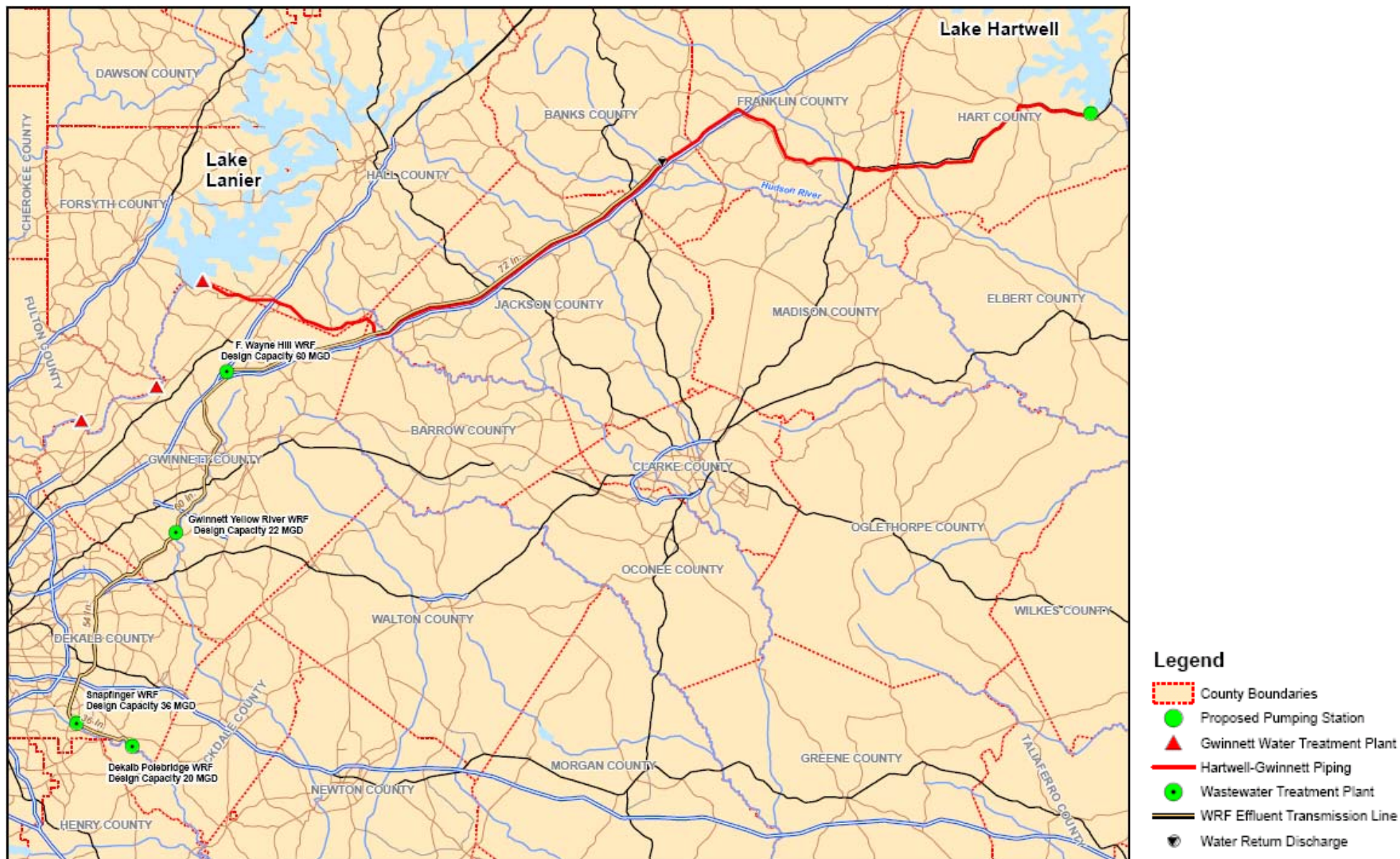
Source: Technical Advisory Panel  
144200-01 TF Mtg 2-23 Nov-v22.ppt

# Illustration of option: Transfer from West Point Lake to Fulton county

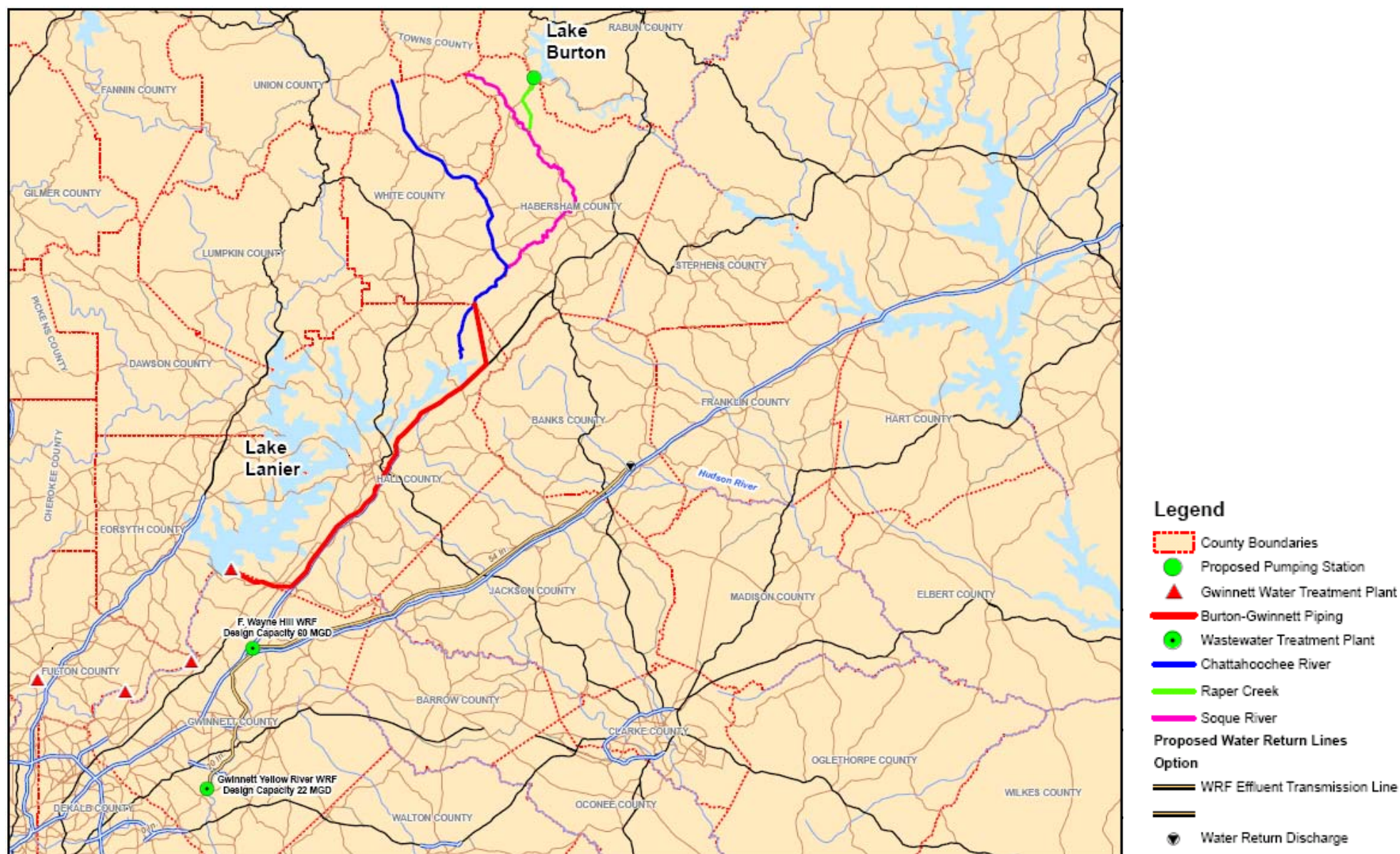


Source: Technical Advisory Panel  
144200-01 TF Mtg 2-23 Nov-v22.ppt

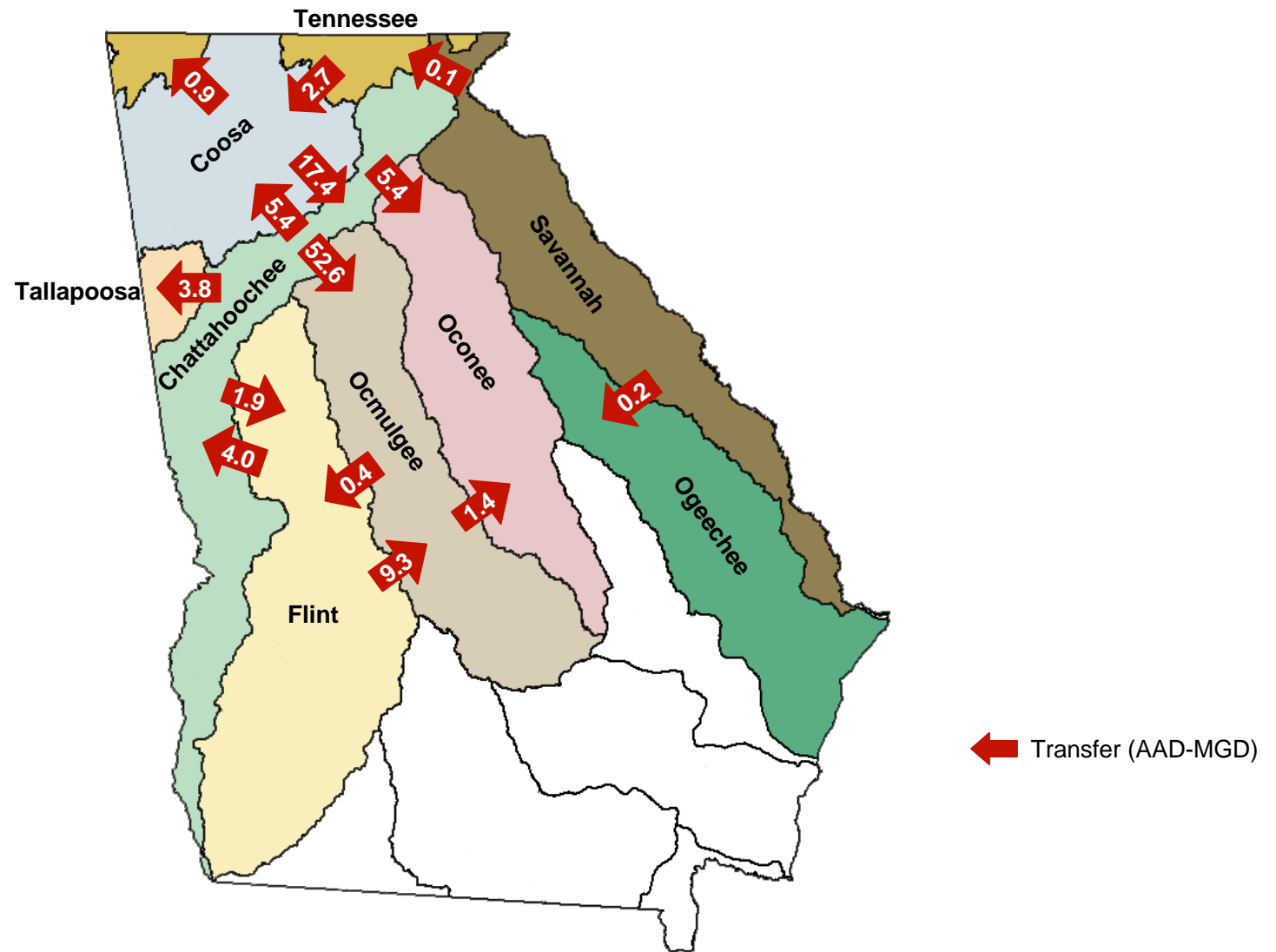
# Illustration of option: Return of water to originating basin for Lake Hartwell transfer under mandated return flow req.



# Illustration of option: Return of water to originating basin for Lake Burton transfer under mandated return flow req.



# Existing interbasin transfers in Georgia



Note: An interbasin transfer of water is any surface water which is withdrawn from one major river basin and discharged, sold to, or otherwise utilized in another major river basin  
 Source: Environmental Protection Division (EPD) Data for 2008

## Backup

## Major (> 1 AAD-MGD) interbasin water transfers in Georgia

Water system transferring	Basin transfer	Net Transfer (AAD-MGD)	Water system receiving transfer	County receiving transfer
DeKalb County	Chattahoochee to Ocmulgee	37.2	S. DeKalb	DeKalb, Rockdale, Henry
Gwinnett County	Chattahoochee to Ocmulgee	15.3	Gwinnett Co., Rockdale Co., Walton Co., City of Loganville	Gwinnett, Rockdale, Walton
City of Gainesville	Chattahoochee to Oconee	5.0	E. Hall County	Hall
City of Atlanta	Chattahoochee to Flint	1.6	Union City, Fayette Co., Clayton Co.	Fulton, Fayette, Clayton
Carroll Co...Auth.	Chattahoochee to Tallapoosa	3.6	Haralson Co. WSA, Cities of Temple, Mt. Zion and Villa Rica	Carroll, Haralson
Cobb Co...Auth.	Coosa to Chattahoochee	16.6	SE. Cobb Co., Douglas Co., Paulding Co., Lockheed	Cobb, Douglas, Paulding
Clayton County	Flint to Ocmulgee	5.7	Clayton Co.	Clayton
City of Griffin	Flint to Ocmulgee	3.6	E. Spalding Co.	Spalding
Forsyth County	Chattahoochee to Coosa	3.3	NW Forsyth Co., Etowah Water & Sewer Authority	Forsyth, Dawson
City of Cumming	Chattahoochee to Coosa	1.3	NW Forsyth Co.	Forsyth
Newnan Water System	Flint to Chattahoochee	4.0	Coweta Co., City of Newnan	Coweta
Eastside Utilities	Tennessee to Coosa	2.3	Dalton Utilities	Whitfield

Source: Environmental Protection Division (EPD) Data for 2008

144200-01 TF Mtg 2-23 Nov-v22.ppt

## Backup

## Minor (< 1 AAD-MGD) interbasin water transfers in Georgia

Water system transferring	Basin transfer	Net Transfer (AAD-MGD)	Water system receiving transfer	County receiving transfer
Atlanta-Fulton County	Chattahoochee to Coosa	0.7	N. Fulton Co.	Fulton
City of Dahlonega	Chattahoochee to Coosa	0.1	West Lumpkin County	Lumpkin
City of LaGrange	Chattahoochee to Flint	0.2	City of Greenville	Meriwether
City of Social Circle	Ocmulgee to Oconee	0.5	East Social Circle	Walton
Etowah Water Auth.	Coosa to Chattahoochee	0.8	East Dawson Co.	Dawson
Douglas Co....Auth.	Chattahoochee to Tallapoosa	0.1	City of Villa Rica	Carroll
Heard Co....Auth.	Chattahoochee to Tallapoosa	0.1	City of Ephesus	Heard
Henry Co....Auth.	Ocmulgee to Flint	0.4	City of Hampton, Bear Creek LAS	Henry
City of Union Point	Savannah to Ogeechee	0.2	City of Union Point	Greene
Dalton Utilities	Coosa to Tennessee	0.9	West Whitfield Co.	Whitfield
City of LaFayette	Tennessee to Coosa	0.4	City of LaFayette	Walker
Monroe Utility Network	Ocmulgee to Oconee	0.9	City of Monroe, Walton Co.	Walton
Gwinnett County	Chattahoochee to Oconee	0.4	Walton Co., Cities of Auburn, Braselton and Loganville	Barrow, Walton, Jackson
City of Atlanta	Chattahoochee to Flint	0.1	Fayette County	Fayette
DeKalb County	Chattahoochee to Ocmulgee	0.1	Henry Co. Water & Sewerage Authority	Henry
Clayton-Rabun Co. W&SA	Savannah to Tennessee	0.1	City of Clayton/North Loop	Rabun

Source: Environmental Protection Division (EPD) Data for 2008

144200-01 TF Mtg 2-23 Nov-v22.ppt

# Agenda

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**Prioritization discussion related**

## Summary of Economic criteria used in analyses

Criterion	Definition, units	What this tells us
Yield: MGD (AAD)	MGD saved or supplied, in Avg Annual Day terms	Options' contribution to supply gap
Cost-efficiency: \$/MG	<b>2010 \$ cost per million gallons "saved"</b> <ul style="list-style-type: none"> <li>Includes capital expense, operating expense over project lifetime, discounted to 2010 at 3% real rate</li> <li>Total 2010 \$ costs divided by total MG yielded over project</li> </ul>	<b>Relative cost efficiency of different types of solutions</b> <ul style="list-style-type: none"> <li>Normalized for timing of costs, enabling comparison of capital intensive options with low capital cost options</li> </ul>
Capital required: \$M	\$M of capital expense (in 2010\$)	Degree of near-term budget demands

## Option evaluation process and Technical Assumptions

# Explanation of option analysis process

## **Staff and technical advisors defined set of relevant options**

- Referred to TF input, existing options from GA / Metro area and case studies of other areas
- Individual sub-teams iteratively revised / augmented option set throughout process
- Teams created key assumptions (locations, distances, etc) to enable cost estimation

## **Sub-teams generated initial cost / benefit estimates**

- Estimated *incremental* yield for each option (ie, yield not yet incorporated in Metro Plan)
- Estimated approximate costs bottom-up (eg, pump horsepower required, transport distance, etc)
- Capital and operating costs estimated over project lives, discounted back to 2010

## **Teams applied standard cost metrics across teams where possible, eg**

- Cost per mile for pipe infrastructure, Cost per horsepower required for pumping stations, Cost per capacity for water treatment plants....(full list on following pages)

## **Full technical advisor team conducted "peer review" of all estimates**

- Sub-teams presented findings to full advisory panel, as well as to water professionals
- Assumptions underlying costs, yields challenged and refined
- Developed consensus that estimates are directionally correct + reasonably accurate given constraints

**Result is yield, cost estimates that are comparable- though not precise, as actual design and implementation analysis were not conducted**

# Standard cost assumptions used by all teams

## Capital expenses (I)

Category	Standard used			Assumptions
<b>Intakes</b>	$\$375,000 \times (Q^{0.7})$ , where Q = flow rate (MGD)			<ul style="list-style-type: none"> <li>Built-in contingency factor of 1.5</li> <li>Includes structure cost only</li> <li>Pumps estimated separately</li> <li>Cost has been calibrated for mid-2010 dollars</li> </ul>
<b>Pump stations</b>	$\$33,314 \times (HP^{0.68})$ , where HP = pump horsepower			<ul style="list-style-type: none"> <li>May include single or multiple pumping stations</li> <li>Cost calibrated for mid-2010 dollars</li> <li>Includes all associated costs (pumps, housing, motors, design oversight, etc)</li> <li>Based on South Central TX Regional Water Plan construction cost data</li> </ul>
<b>Pipeline</b>	Diameter (in)	Cost/lineal foot	Cost/mile	<ul style="list-style-type: none"> <li>All costs in mid-2010 Dollars</li> <li>ENR Construction Cost Index (CCI) in October 2009: 8,596.31</li> <li>Assumed CCI for mid 2010: 8,770</li> <li>Cost per lineal foot = <math>(CCI/653) \times D^{1.085}</math></li> <li>Built-in contingency factor of 1.5</li> <li>Accounts for distance calculated "as the crow flies"</li> <li>Includes "right of way" cost contingency</li> </ul>
	10	245	1,290,000	
	12	299	1,580,000	
	18	464	2,450,000	
	24	633	3,340,000	
	30	807	4,260,000	
	36	983	5,190,000	
	42	1,163	6,140,000	
	48	1,344	7,100,000	
	60	1,712	9,040,000	
	72	2,086	11,020,000	
	84	2,466	13,020,000	
	96	2,851	15,050,000	

# Standard cost assumptions used by all teams

## Capital expenses (II)

Category	Standard used		Assumptions
<b>Capacity</b>	Peaking factor = 1.5x average annual day		<ul style="list-style-type: none"> <li>For treatment structures</li> <li>For transmission or raw water withdrawal facilities use appropriate factors</li> <li>Treatment facilities designed for peak day capacity</li> </ul>
<b>Distance</b>	Calculate distances "as the crow flies". For remote areas, use factor of 1.2 or as required		<ul style="list-style-type: none"> <li>Pipeline contingency factor of 1.5 includes allotment for distance</li> </ul>
<b>Pump &amp; WTP refurb</b>	30% of original capital expense in Year 25		<ul style="list-style-type: none"> <li>Major refurbishment of pumping stations and Water Treatment Plants required every 25 years at ~1/4 to 1/3 of original cost</li> </ul>
<b>Treatment plant</b>	Q (MGD) <sup>1</sup>	w/UV (\$M)	<ul style="list-style-type: none"> <li>For standardization, use WTP w/ UV cost estimates</li> <li>2003 planning costs, updated with mid-2010 CCI</li> </ul>
	10	26.2	
	20	47.6	
	40	87.9	
	60	126.3	
	80	163.6	
	100	200.0	
	150	288.5	
	200	374.2	
	250	458.1	
	300	540.4	

1. Peak Daily Demand (MGD) of Capacity

# Standard cost assumptions used by all teams

## Operating and maintenance expenses

Category	Standard used	Assumptions
<b>Pumping costs</b>	<ul style="list-style-type: none"> <li>• \$0.07 per kWh general</li> <li>• \$0.12 per kWh peak power demand</li> <li>• 130 C factor</li> <li>• 0.75 Pump &amp; motor efficiency</li> <li>• 10% of dynamic head for minor friction loss</li> </ul>	<ul style="list-style-type: none"> <li>• Based on 2010 rates (not independently estimating inflation)</li> <li>• Higher rate used only when ALL pumping assessed to occur during peak power demand periods (very limited cases)</li> </ul>
<b>Pump and pipeline O&amp;M</b>	<ul style="list-style-type: none"> <li>• 0.50% of initial capital expense per year (pumps)</li> <li>• \$1,000 per mile per year (pipeline)</li> </ul>	<ul style="list-style-type: none"> <li>• Includes all O&amp;M expenses other than electricity</li> <li>• 2 personnel inspect 2x per year + periodic line cleaning</li> </ul>
<b>Treatment plant O&amp;M</b>	<ul style="list-style-type: none"> <li>• \$0.75 per 1,000 gallons</li> </ul>	<ul style="list-style-type: none"> <li>• Total cost for running plant (including electricity)</li> </ul>



## United States Department of the Interior

## U.S. FISH AND WILDLIFE SERVICE

247 South Milledge Avenue  
Athens, Georgia 30605West Georgia Sub Office  
P.O. Box 52560  
Ft. Benning, Georgia 31995-2560Coastal Sub Office  
4270 Norwich Street  
Brunswick, Georgia 31520

December 17, 2009

Col. Byron Jorns, District Engineer  
United States Army Corps of Engineers, Mobile  
c/o Tetra Tech, Incorporated  
107 Saint Francis Street, Suite 1403  
Mobile, Alabama 36602-9986

Dear Col. Jorns:

The U.S. Fish and Wildlife Service (Service) has reviewed the United States Army Corps of Engineers' (Corps) November 19, 2009, Notice of Intent (NOI). The purpose of the notice is to revise the scope of the Draft Environmental Impact Statement (DEIS) for updating the Water Control Manuals (WCM) for the Apalachicola-Chattahoochee-Flint (ACF) River Basin based on the recent Federal District Court ruling. These comments represent input from our Alabama, Florida, and Georgia Ecological Services Field Offices. We submit the following additional comments under the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*) and the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 *et seq.*).

Our previous comments of November 21, 2008, are still relevant and should be addressed under this revised scope. In addition, alternative sources of water supply for the Atlanta metro area need to be considered including the anticipated short and long-term impacts to surface and groundwater resources as a consequence of the revised scope. We recommend that the Corps' alternatives analysis include the cumulative effects of the proposed action and the expected proliferation of multiple surface and groundwater projects that may also affect the operation of the federal reservoirs and ultimately flows to the Apalachicola River. A prioritized list of reservoir and groundwater projects can be obtained from the Water Contingency Planning Task Force, formed by Governor Purdue in October 2009.

The Service appreciates the opportunity to comment and looks forward to continued participation as the project moves forward. If you have any further questions, please contact staff biologists Alice Lawrence at (706) 613-9493 ext. 222 or Will Duncan at (706) 613-9493 ext. 227.

Sincerely,

Sandra S. Tucker  
Field Supervisor

enclosure

cc: Jerry Ziewitz, FWS, Tallahassee, FL  
Gail Carmody, FWS, Panama City, FL  
Bill Pearson, FWS, Daphne, AL  
Dan Everson, FWS, Daphne, AL  
Stephanie Nash, FWS, Washington, D.C.  
Loretta Sutton, OEPC, Washington, D.C.



## United States Department of the Interior

### FISH AND WILDLIFE SERVICE

1601 Balboa Avenue  
Panama City, FL 32405-3721

Tel: (850) 769-0552  
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November 21, 2008

Col. Byron Jorns, District Engineer  
U.S. Army Engineer District, Mobile  
P.O. Box 2288  
Mobile, Alabama 36628-0001

Dear Col. Jorns:

The U.S. Fish and Wildlife Service (Service) is responding to your September 19, 2008, notice (73 FR 54391) soliciting scoping comments about updating the Master Water Control Manual (WCM) for the Corps' reservoir projects in the Apalachicola-Chattahoochee-Flint (ACF) River Basin of Alabama, Florida, and Georgia. We submit the following comments to assist you in identifying the resources and framing the operational alternatives that you will consider in the draft Environmental Impact Statement (EIS) for this action. These comments represent input from our Alabama, Florida, and Georgia Ecological Services Field Offices. Our authority to comment on this action derives from the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.) and the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 et seq).

It is our understanding that the WCM will specify the storage and release schedules for all five projects in the ACF system of federal dams and reservoirs: Buford Dam/Lake Lanier, West Point Dam/West Point Lake, Walter F. George Dam/Lake Eufaula, George W. Andrews Lock and Dam, and Jim Woodruff Lock and Dam/Lake Seminole. The WCM serves as the primary policy and guidance document for the Corps' water management decisions in the basin, including decisions necessitated during times of flood and drought.

We have reviewed the notice announcing the intent to prepare an EIS (73 FR 9780), the notice announcing the public scoping meetings (73 FR 54391), and the various materials pertaining to the update that are posted on the Mobile District's website. Several Service personnel attended the public scoping meetings. The proposed action is consistently labeled as an "update" of the WCM, but the nature of the update, i.e., how it may depart from current operating rules, is not yet specified. During a conference call with federal agencies on October 9, 2008, the Corps' EIS contractor said that the update would not consider changes in operations that would require changes in Congressional authorizations for the projects or a re-allocation of reservoir storage. While this statement defines a general boundary in principle for the scope of the update, it does

not reveal which water management variables are subject to change and to what degree. The relationship between current operating rules and Congressional authorizations is not documented in the materials that have been made publicly available for this scoping process.

Therefore, our first scoping comment is to request a summary of the current operating rules for each project, an explanation of their basis in Congressionally authorized purposes, and a description of how much discretion the Corps has to change the rules. We recommend posting such a summary on the District's website for use by other agencies and the public early in the WCM update work schedule. At minimum, the summary should list storage amounts, if any, that are allocated to, and releases that are designated for, the various authorized purposes at each project with appropriate documentation and narrative explanation. For example, the current rule curve for West Point implies an amount of storage available for flood control for several months a year. For other project purposes, the Corps operates the system using the multiple zone rule curves and makes discretionary releases for purposes of navigation, hydropower, water quality, infrastructure, and protected species. The balancing of the discretionary releases is not always clear to the outsider. Compiling information on storage allocations and discretionary uses of storage allows the public to consider whether any other way of operating for the flood control purpose would be consistent with the Congressional authorization. Without such information, the logic of the current operating rules is not apparent to the public, which makes meaningful participation in the scoping process more difficult. We believe that disseminating such information will also serve to diffuse the controversy that has so frequently visited ACF water management issues in recent years.

We make this very general request because we suspect that considerable enhancements are possible for fish and wildlife resources, in both the river and reservoir environments. Such enhancements may be possible with modest changes in storage and release rules throughout the basin and not be inconsistent with project authorizations. The Service encourages the Corps to facilitate a comprehensive process for determining how ecological and social benefits could be increased by modifying the operations of the ACF federal dams. We recommend folding into the WCM update a thorough evaluation of project-related flow regime alterations and the potential benefits of restoring features of the pre-project flow regimes. The approach described by Richter and Thomas (2007) would be very useful for this WCM update.

The remainder of our comments are organized in two sections. The first identifies resources, and the second identifies alternatives, that we recommend to the Corps for special consideration in the process of updating the WCM.

## **Resources**

Threatened and Endangered Species -- The ACF projects affect a large swath of aquatic habitat of fish and wildlife from the Blue Ridge to the Gulf of Mexico, a swath that supports one of the richest aquatic fauna in North America. The Corps is aware of the species and habitats protected under the ESA that are affected by ACF project operations. These species were the focus of our recent consultation for the Woodruff Dam Revised Interim Operating Plan (RIOP). The Corps should address the same ESA-protected resources for the WCM update as for the RIOP: the Gulf sturgeon (*Acipenser oxyrinchus desotoi*), Fat threeridge (*Amblema neislerii*), Chipola slabshell

(*Elliptio chipolaensis*), and Purple bankclimber mussel (*Elliptoideus sloatianus*), all of which have designated critical habitat within the action area. At this time, no species or critical habitats are proposed for protection under the ESA that occur within the action area. Since the WCM update process will span several years, we remind the Corps of the action agency's responsibility under the ESA Section 7 regulations to determine the effects of its proposed action on all listed, proposed, and candidate species and critical habitats that may be present in the action area. The Corps will need to revisit the list of threatened and endangered species periodically during the planning process and must verify the accuracy of its species/habitats list when the agency begins preparing a biological assessment. We encourage the Corps to visit our websites for current species lists and other information:

<http://www.fws.gov/panamacity/>  
<http://www.fws.gov/athens/>  
<http://www.fws.gov/daphne/>

We recommend that you include within the EIS a Biological Assessment of effects on these species and their designated critical habitats as required by the implementing regulations (50 CFR §402.12) for section 7 of the ESA. From our previous consultations with you on the releases from Woodruff Dam, your staff is already aware of the sources of information about listed species and their habitats in the action area, and also of the kinds of assessment methods that we consider most useful in evaluating potential changes in flows. Nevertheless, our staff biologists are available to assist you with developing appropriate content for the assessment. Likewise, we will coordinate with you a schedule for completing section 7 consultation in advance of your Record of Decision.

In addition, each of the three states maintains databases of rare and imperiled species that may receive protection under state laws. We encourage the Corps to contact the states directly and obtain current lists of resources of concern to the state fish and wildlife agencies that could be affected by project operations. Web addresses that provide contacts and resources information are:

Alabama: <http://www.outdooralabama.com/research-mgmt/6/>  
 Florida: <http://myfwc.com/imperiledspecies/>  
<http://www.fnai.org/>  
 Georgia: [http://www.georgiawildlife.com/rareorendangeredspecies\\_conservation.aspx](http://www.georgiawildlife.com/rareorendangeredspecies_conservation.aspx)

Finally, because populations of several federally listed species were fragmented due to reservoir development, we encourage the Corps to participate with the Service and other federal and State agencies in efforts to locate and monitor extant populations in the remaining unimpounded portions of the Chattahoochee River and its tributaries. Historically, the purple bankclimber, shiny-rayed pocketbook (*Hamiota [Lampsilis] subangulata*), Gulf moccasinshell (*Medionidus penicillatus*), and oval pigtoe (*Pleurobema pyriforme*) were all found in the Chattahoochee River. Except for a single live bankclimber found in Goat Rock Reservoir, all are now extirpated from the mainstem, and isolated populations are known to persist in only three tributaries: Uchee Creek, Sawhatchee Creek, and Kirkland Creek.

National Wildlife Refuges -- A principal resource of interest to the Service is the Eufaula National Wildlife Refuge, which is associated with the W.F. George project. The refuge is managed for migrating and wintering waterfowl, nesting wood ducks, colonial nesting birds, neotropical migrant birds, and wood storks. Recently, the refuge has hosted some of the whooping cranes that belong to the newly established eastern flock, which migrates between nesting areas in Michigan and wintering areas in Florida. Many of the shorebirds and waterfowl species rely upon the mudflats, shallows, and backwater areas of the reservoir that are within the refuge; therefore, the manner in which reservoir levels are controlled is highly relevant to wildlife habitat conditions at this refuge. In addition, the refuge pumps water from the reservoir in the fall to flood croplands located in several off-reservoir impoundments. These impoundments may attract up to 75 percent of all waterfowl on the refuge, which number about 10,000-15,000 birds in most years. Filling these impoundments is dependent on a reservoir level greater than about 185 ft above mean sea level, which is the case in mid to late October in most, but not all years.

St. Vincent National Wildlife Refuge is an island among the chain of barrier islands that forms Apalachicola Bay. Although ACF project operations influence the bay by regulating fresh water inflow coming from the Alabama and Georgia portions of the basin, the resources of principal management concern on the refuge are not directly affected by this inflow. At this time, we have no specific resources associated with St. Vincent NWR that we request the Corps to consider in the WCM update or EIS.

Reservoir Fisheries -- Sport fisheries are important recreational and economic resources in all of the federal ACF reservoirs. Important sport fish in all five reservoirs are the largemouth bass and crappie, but each reservoir supports a mix of several additional species, including walleye (Lake Lanier only), striped bass, bluegill, spotted bass, redear sunfish, and others. Based on interviews of fisheries managers and researchers in the basin, Ryder et al. (1995) identified the species considered critical in an evaluation of operating alternatives and the relative acceptability of reservoir levels for these species. The Service cooperated with the Corps for the 1998 draft EIS for ACF water allocation to develop a reservoir fisheries performance measure using the findings of Ryder et al. (1995). We recommend that the Corps update this performance measure in light of any new information developed in the past 10 years, and use it to evaluate the relative impacts on reservoir sport fisheries of alternative operating plans.

Fish Passage -- The Corps' ACF dams have impeded the migration of several migratory fish species for several decades, including the striped bass, Alabama shad, American eel, and Gulf sturgeon. It is possible that the Corps might operate the lock at Woodruff Dam in a manner that would facilitate fish passage at this downstream-most barrier in the basin. We recommend that the Corps continue to support and facilitate research on fish passage at Woodruff Dam, and other ACF federal dams as appropriate, with a goal of identifying and implementing operations that would allow riverine species to travel their historic migratory pathways. Such procedures should be incorporated in the WCM, as appropriate.

Water Quality -- We urge the Corps to closely examine the effects of reservoir operations on water quality in the WCM update, including ongoing and potential future effects to dissolved oxygen (DO), temperature, pH, conductivity, nutrient and organic material dynamics, and

various industrial and municipal discharges. In general terms, the Service is most concerned about low DO in project tailwaters and restoring a pattern of flow magnitude that over time emulates the seasonality, magnitude, frequency, duration, and rate of change of natural flows.

Low DO levels have been recorded by the Corps downstream of West Point Dam. According to monitoring data collected downstream of West Point Dam from 1999 through 2001, DO did not always exceed state standards during the monitoring periods. DO exceeded the Georgia State standard of 4 mg/L (instantaneous) for only about 35 percent of the monitoring period in 1999 (monitoring from 6/15-9/14), 30 percent of the monitoring period in 2000 (monitoring from 7/25-9/30), and 4 percent of the monitoring period in 2001 (monitoring from 6/8-10/5) (Georgia Power Company 2002). Low DO levels have been associated with minor fish and mussel kills downstream of W.F. George Dam as well (personal communication, Rob Weller, GA DNR, 11/14/2008). We recommend that the Corps make a concerted effort through this WCM update to determine how to ensure that its releases from all five ACF dams meet or exceed DO and other applicable water quality standards.

Invasive Aquatic Plants – Noxious growths of various exotic species, such as hydrilla and Eurasian milfoil, have become a constant management concern at the ACF federal reservoirs, especially at Lake Seminole and Lake Eufaula. We encourage the Corps to investigate the feasibility of occasional draw downs for controlling aquatic plants as part of this WCM update.

Floodplain Habitats – Floodplain habitats are vital to the health of the riverine and estuarine communities of the ACF Basin. Darst and Light (2008) found that floodplain forests of the Apalachicola had shorter flood durations, were drier in composition, and had 17 percent fewer trees in 2004 than in 1976. The Corps should evaluate the effects of past and proposed project operations on flood durations and floodplain habitats.

Apalachicola Bay Habitats and Fisheries – The biological organization of Apalachicola Bay is controlled largely by riverine influences on its salinity, turbidity, and sedimentation rates (Livingston 1991). We encourage the Corps to apply a spatially-explicit hydrodynamic model of the bay to assess the effects of alternative operations on salinity regimes, and in turn, on the relative distribution of salt marshes, submerged grass beds, and oyster bars in the bay.

## **Alternatives**

Minimum Releases -- A fundamental operating rule for all of the Corps ACF dams is the minimum release that will occur at any given time. Whether expressed as single year-round discharge or more variably as a function of season, reservoir inflow, storage levels, and/or other factors, a minimum release rule establishes a limit on the extent to which a reservoir may deplete river flows by rising storage levels and may be required to augment flows by dropping storage levels. We encourage the Corps to use this WCM update to comprehensively evaluate storage options in the context of the impacts of altered flow regimes at the ACF dams and the benefits of restoring more natural patterns to the monthly, daily, and instantaneous releases from the ACF dams.

The practice of hydropower “peaking” at Buford, West Point, and W.F. George dams, and to a lesser degree at Woodruff Dam, may raise and lower the river by several feet over the course of a few hours. This practice may severely limit the populations of many species by limiting the availability of specific microhabitats to very brief periods, periods too brief for the completion of essential life history functions. Although eliminating peaking altogether would best serve the habitat needs of riverine fish and wildlife, we recognize the important role that these projects play in providing electric power. Therefore, we ask the Corps to consider how providing windows of more stable flows during critical periods might increase the abundance and diversity of native fishes and other aquatic resources in project tailwaters.

Winter Drawdown -- After the localized impact of hydropower peaking on project tailwaters, probably the most significant hydrologic alteration induced by ACF reservoir operations is the annual autumn drawdown and spring refill for flood control purposes. This practice vacates about 288,000 acre feet of combined storage in Lanier, West Point, and George starting October 1 and completed by mid December causing a significant rise in river flows. Refilling this storage from mid February through May 31 to meet summer recreational demand causes a daily average depletion of about 1,400 cfs per day to the flows that would otherwise issue from W.F. George Dam. The spring refill period extends into the principal spawning season for many native fish species, including most sport fishes, and because many of these rely upon floodplain habitats for spawning and rearing, less flow in the spring means less habitat. To reduce the hydrologic alteration caused by flood control operations, we urge the Corps to consider the potential risks and benefits of reducing the magnitude of the autumn drawdown and/or of beginning the spring refill earlier, especially during dry climatic periods. Also, other alternatives to achieving flood protection should be considered.

Climate Change -- We recommend that the Corps consider how climate change may affect ACF flow regimes and how to best adapt reservoir operations to the most likely foreseeable changes. The effects of a given set of operating rules will vary depending on whether the basin’s climate becomes drier, wetter, more variable, or less variable. In particular, it is vitally important to adapt the level set as the top of conservation (TOC) pool to the long-term hydrology of the basin and the essential purposes the projects serve. In a scenario with greater variability between annual high flows and low flows, for example, it may not be feasible for these projects to simultaneously serve their existing levels of flood control protection and minimum flow support without adapting TOC levels to prevailing weather conditions. The Corps already practices this concept with occasional variances from the rule curves to store water above the TOC elevation during dry periods. We recommend that the Corps explicitly address climate-based operational flexibility in the WCM update and in the analyses of the EIS.

Consumptive Water Demands -- Similarly, the Corps should consider the impacts of increasing consumptive water demands in the basin. This is not an alternative, per se, but is a variable that an analysis of operational alternatives should incorporate along with climate-driven hydrologic variability. The EIS should quantify the relationship between increasing consumptive demands in the ACF Basin and the benefits from various project purposes. For example, what is the highest sustainable minimum release from Woodruff Dam if consumptive demands increase by 25, 50 or 100 percent? To consolidate and report important data about the basin, the EIS should document the volume of storage that has been either contracted for water supply or has been

proposed in each project and any limitations due to hydrologic conditions of meeting the contracts.

Navigation -- Navigation is an authorized project purpose and the Corps has used reservoir storage in the past to support navigation. In recent years, though, lacking water quality certification to maintain the channel in Florida, we have seen only occasional flow management for the navigation purpose. How will the WCM update address navigation? Current physical channel conditions dictate the flows that will provide the authorized channel dimensions. Short of providing flows to meet channel depth authorizations, maintaining channel conditions by dredging would be indicated. Dredging has significant adverse effects to fish and wildlife. If flows for navigation are included in the WCM update, the Corps should also outline dredging needs, if any, and evaluate the effects of the channel maintenance activities that would be necessary under the conditions specified for navigation flow support. If flows for navigation are not included in the WCM update, the Corps should consider if the current policy of a four-zone operational scheme could be improved and/or simplified.

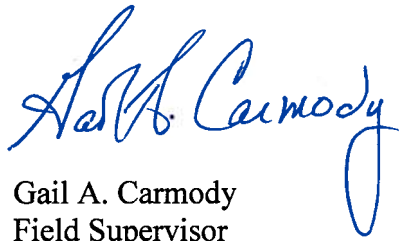
Fisheries Management -- The Corps has been following a draft Standard Operating Procedure (SOP) for "Lake Regulations and Coordination For Fish Management Purposes" for several years. The "fish spawn" SOP establishes a general goal of managing for generally stable or rising reservoir levels and for generally stable or gradually declining river levels for about 4 to 6 weeks in the spring months. We would like to cooperate with the Corps and the wildlife agencies of the three states in the coming months to explore ways to incorporate this draft SOP into the mix of alternatives that are evaluated in the WCM update.

National Wildlife Refuges -- The Service has previously recommended to the Corps a seasonal pattern of reservoir levels at W.F. George Reservoir/Lake Eufaula that would best accommodate the needs of Eufaula National Wildlife Refuge. The principal concerns of the refuge relative to reservoir management are for water levels that provide seasonal habitat for a large number of migratory bird species, control the spread of undesirable aquatic vegetation, and allow the manipulation of off-reservoir impoundments for waterfowl. These recommendations, which we reiterated in our draft Fish and Wildlife Coordination Act report for the Corps' 1998 draft EIS on ACF water allocation, are to manage the reservoir so that it behaves more like a river. We recommended an annual pattern cycling between the highest levels (190 ft) in the late winter and early spring to the lowest levels (185 ft) in the late summer. These recommendations are still valid, and we request the Corps to consider how the benefits and impacts of such a scheme compare with the existing operating regime and other alternatives.

The scoping process is an opportunity to inform the formulation and analysis of alternatives that could result in a new and improved set of rules and policies for operating the ACF federal projects. We strongly support the idea of organizing interagency technical workgroups that would assist the Corps in compiling the information that is necessary to craft a balanced set of alternatives and to analyze their effects on resources. The Service is willing to participate in such workgroups relative to fish and wildlife resources affected by river flows and reservoir levels. Our Panama City Field Office will have the lead for the Service's participation in the WCM update and in the EIS.

We thank you for the opportunity to comment.

Sincerely,



Gail A. Carmody  
Field Supervisor

#### Literature Cited

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September 23, 2009

Gentlemen:

Regarding an article in my newspaper, Jessytha County News, I would like to place a vote for making Lake Lanier's full pool 1073 ft.

This would serve to be a reservoir for times of drought like the past three years. It would be less expensive than trying to build a separate reservoir to store water for this area + Atlanta. There are many people in favor of this, and we have seen the last two months what a 1073 level would be like. It would not cause any hardships -

Thank you for your consideration -

Martha Walker  
3105 Dove Trail  
Cumming, GA 30041

December 28, 2009

On behalf of the West Point Lake Coalition, its approximately 1200 members, and its Corporate Sponsors, we submit the following comments as a follow up to our comments submitted on 21 October 2008 and included here once again:

The Corps needs to manage West Point Lake in a balanced manner for the five specific purposes for which it was authorized by Congress. Note that West Point Lake was NOT authorized for thermo-electric power or for waste assimilation for downstream communities. In fact, power plants and water treatment facilities should have been built based on historic low flows knowing that they had no claims to the waters of West Point Lake over and above the minimum 675 CFS released continuously from West Point Dam.

West Point Lake was specifically authorized for recreation and sport fishing & wildlife development in addition to flood control, hydropower and navigation. A review of the Corps' own, historic records will show that West Point Lake was rarely managed for recreation. The Corps' own records show an initial recreation impact level of 632.5 MSL and lake levels historically are routinely below this initial impact level. In spite of an annual economic impact of \$709.7 million when maintained between 633 and 635 MSL, historical data will show that flood control and hydropower have been the primary purposes and the other three authorized purposes have been relegated to secondary status. This is further evidenced by an antiquated rule curve which calls for a 7 foot draw down vs. one foot for Lake Lanier and only two feet for Walter F George. Research of the original engineer's report shows no rationale for such a drastic rule curve.

During September of 2009 when West Point Lake was at full pool, we experienced what USGS called a record setting event, so much beyond a one in 500 year event to even calculate. In spite of this RECORD SETTING event, the Corps successfully managed the situation, much to their credit, without any significant downstream impacts. At 632 MSL there is nine feet of flood storage available and at 635 MSL (full pool) there is six feet of flood storage available. If additional flood storage is needed, Lake Lanier should be utilized, since flood control is one of its authorized purposes as well.

By managing West Point Lake below the recreational impact level of 632.5 MSL, there is an environmental justice impact on the low income and minority populations which rely on the lake for both sustenance and enjoyment. This breach of environmental justice (Executive Order # 12898) has never been studied or acknowledged; however when the recreation impact level is breached, the opportunity to fish and picnic is severely diminished by the amount of exposed and often muddy shorelines limiting access to the

## 2.

water and reducing the enjoyment and use of the recreational amenities, i.e. parks, picnic facilities, and launch ramps.

We believe that a revised rule curve should be implemented with action zones limited to a three foot variance from full pool. There is no question that this provides for adequate flood storage while honoring the recreation authorization established by Congress. Southwest Georgia has a mild climate which makes recreation possible 12 months per year, and Congress recognized this when West Point Lake became the first Corps lake to be specifically authorized for recreation and the first lake to carry the description of a “demonstrated recreation project”.

During the drought of 2007, a flow of 5,000 CFS at the Florida state line was mandated to protect endangered species. The USFWS literally grabbed this number because historically AND ERRONEOUSLY, this flow was in place to satisfy the perceived needs of Plant Scholz. It has been two years and USFWS has yet to complete and document their study of the minimum flows necessary to protect the endangered species. There is no documented downstream need for a guaranteed 5,000 CFS; to the contrary, the minimum needs are 2,500 CFS at most, and probably less! USFWS should be compelled to finish and document the minimum flows necessary to protect the endangered species immediately. Over two years is totally unacceptable. Note that prior to construction of West Point Dam, endangered species survived at historical low flows of less than 300 CFS.

Simply put, it is time under the Revised Water Control Plan to eliminate the undue stress on West Point Lake and realize that West Point Lake is NOT the WORKHORSE of the ACF System. It is time to acknowledge and manage West Point Lake in such a manner that its recreation and sport fishing & wildlife development authorizations are honored and the ACF System is managed in a truly balanced manner based on the latest science and technology available. It is time to verify actual needs versus wants and time to require stakeholders to do all they can do versus all they only want to do!

Thank you for the opportunity to submit our input.

Sincerely,

Dick Timmerberg  
Executive Director  
West Point lake Coalition

## 2009–2010 Scoping Comments Received Electronically

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**Name:** Boddie, Nathan

**Affiliation:**

**Comment:** The scope of impact caused by CoE regulation of the ACF basin should be considered basin-wide. This includes, but is not limited to, the Appalachian bay, surrounding watershed areas and habitat. Impact assessment should also include those to human, commercial, and natural resource services.

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**Name:** Daigrepoint, Jeff

**Affiliation:**

**Comment:** While no solution is going to be cheap or quick, i think increasing lake lanier's water level from 1071 to 1073 (2 feet) would be the least expensive option and we can do this now. A 2 feet increase would be the equivalent of a second major lake. I assume the only negative impact would be to the shoreline and some structures close to the water. Stimulus money could be used to make shoreline improvements to adjust for the rise in water level. Thanks for asking for input.

BTW - it seems like this has been considered in the past. I would be interested why this has not been done already. If nothing else, we could try to go into the summer months with a 2 foot buffer.

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**Name:** Beachler, Mark

**Affiliation:**

**Comment:** We support raising the permanent level of Lake Lanier to 1073 to provide a buffer at little or now cost versus building new reservoirs in Georgia. We also support allowing the uses to include water supply and recreation.

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**Name:** Keller, Brant

**Affiliation:** City of Griffin

**Comment:** In light of the judges ruling and the time frame given, the COE would host a watershed summit to present good, better, best options if there are any. Invitee's should be directly associated with the ACF Basins. The more we know, the better decisions can be made by those who utilize the resource. This summit should not be a feel good meeting but one with substance and value.

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**Name:** Jones, William C.

**Affiliation:**

**Comment:** If it is true that the US Corp of Engineers has started planning for cutting off the water supply to the metro Atlanta Area, this is a terrible travesty. Corp Resources should be dedicated to assisting the nation find additional water supplies for the 40 metro area nationally that are in need of this help.

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**Name:** Lucas, Barry

**Affiliation:**

**Comment:** I am astonished that the the federal government proposes to cut off water supply to many North Georgia counties and cities in 2012 because of a legal technicality. US Army Corps of Engineers approval was given many times over the years, as these various counties and cities built BILLIONS OF DOLLARS WORTH OF INFRASTRUCTURE TO SUPPLY WATER TO THEIR CITIZENS AND BUSINESSES. According to Judge Magnuson, the USACE acted without proper authority in allowing withdrawals over many years, and by operating the dam in a manner to provide for water supply. So the federal government will not stand behind one of its own agencies, but instead threatens to take away local county and city raw water supply unless congress reauthorizes the lake for purposes of water supply? Since the federal government made this mistake, why is it left up to the State of Georgia, and the local cities and counties to come up with a solution? I would propose the the USACE be held accountable for their mistakes over the last 40 years. They should have the lead on obtaining congressional approval for reauthorization of the lake for use as water supply. If they are not able to get this reauthorization approved, then the USACE should be responsible for all of the cost required to replace this water supply through development of other resources. This would include new reservoirs, inter-basin transfer piping, whatever is required. If the federal government were held accountable for the costs to remedy its own mistakes, then perhaps the federal government would be more cooperative in approving a solution. In regards to the updated Water Controls Manual: Buford Dam should operated to allow for existing and future increased water supply from the lake and immediately downstream. Regarding Forsyth County specifically: since a large area of Forsyth County was flooded by construction of the dam in the 1950's, the County should be granted a proportional amount of the impounded water for its existing and future water supply.

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**Name:** Tilghman, Sidell

**Affiliation:**

**Comment:** It certainly makes sense to increase the full pool level of Lake Lanier at least a foot if not more. Also, depending on the short term weather forecasts, let water out of Buford dam as sparingly as possible so as to keep it as full as possible.

And please get this manual done soon. I mean I am glad you all are taking more comments after the July ruling but that was 4 months ago.

Thank you for your time.

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**Name:** Manganiello, Chris

**Affiliation:**

**Comment:** How can I find and read the existing draft Master Water Control Manual (1989) and the existing individual project manuals? I searched the site but could not find these documents.

---

**Name:** Perry, Bill

**Affiliation:**

**Comment:** as a home owner on lake lanier, it is in my best interest to see water levels stay at a more constant full pool level.

I believe that allowing the natural flow to make the lake more stayble is something to be considered. what water flows in, is what should be released. that is a good place to start, you can always ajust releases as needed for what ever reason. but you can't adjust what water God gives us.

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**Name:** Cox, Lesley

**Affiliation:**

**Comment:** The EIS for the Water Control Manual must include the fresh water needs of the Apalachicola River, the swamps, and Bay.

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**Name:** Pine, William

**Affiliation:** University of Florida

**Comment:** Attached is a recent peer-reviewed publication related to Gulf sturgeon spawning and JWLD operations in the Apalachicola River. This paper was published in the journal Transactions of the American Fisheries Society.

**\*NOTE: Please see the attachment associated with this comment below.**

## Spawning Site Selection and Potential Implications of Modified Flow Regimes on Viability of Gulf Sturgeon Populations

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**Abstract.**—Rapid human population growth and an associated increase in consumptive water demands within the ecologically diverse Apalachicola–Chattahoochee–Flint (ACF) River basin of the southeastern United States have led to a series of highly publicized water wars, exacerbated by recent drought conditions, between the states of Alabama, Georgia, and Florida. A key issue is how managing riverine flows to meet human water needs will affect the viability of species that are federally listed as threatened or endangered, including the Gulf of Mexico sturgeon *Acipenser oxyrinchus desotoi*. Our present understanding of Gulf sturgeon ecology within the Apalachicola River basin indicates that altered riverine flow regimes may affect spawning success and possibly the recruitment patterns of the population. Through intensive field work, we documented Gulf sturgeon spawning site selection in the Apalachicola River and then evaluated the relationship between river stage and the available spawning habitat at these sites. We then used an age-structured simulation model to assess the effects of changes in recruitment patterns on population viability using hypothetical scenarios based on changes in flow regime and its effect on available spawning habitat. Over 3 years we were able to collect almost 500 Gulf sturgeon eggs in the Apalachicola River at three different spawning sites. We observed that the depths and flows where eggs were found were similar across years and sites despite varying river conditions. River discharges of less than 142 m<sup>3</sup>/s at Jim Woodruff Lock and Dam significantly reduced the spawning habitat available to Gulf sturgeon at all known spawning sites,

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potentially affecting recruitment. Gulf sturgeon populations are probably sensitive to changes in recruitment, and if extreme low-flow events occur with increasing frequency owing to water management policy choices or climatic events, population recovery could be impaired and the risk of extirpation could increase. Managers should consider the potential effects on Gulf sturgeon recruitment when determining future flow regime policies within the ACF.

The human population within the Apalachicola–Chattahoochee–Flint (ACF) River basin of the southeastern United States is one of the most rapidly growing regions of the United States with an increase in population from about 1.5 million people in 1950 to over 5 million in 2008 with most of this growth (57%) occurring just in the last 20 years (U.S. Bureau of the Census 2008). This population growth, particularly in the metropolitan Atlanta region of Georgia, has led to ongoing water allocation disputes among the basin states of Alabama, Florida, and Georgia, resulting in numerous lawsuits and federal mediation between states. These ongoing water wars are among the longest running and most highly publicized water disputes in the eastern United States (Barnett 2007). While these disputes are similar to more widely known U.S. water wars such as those in the Colorado River basin, water wars in the eastern United States differ because of higher human population density and absence of historic legal precedence establishing interstate water policy (e.g., Colorado River “Law of the River” [Ruhl 2003]). Proposed management actions in the ACF basin to meet emerging water needs, including changes in reservoir operation schedules or construction of new water supply reservoirs, could alter flow regimes within the Apalachicola River, possibly affecting a variety of terrestrial and freshwater, estuarine, and marine resources. Of particular concerns to aquatic resource managers are effects on commercial fisheries for the Eastern oyster *Crassostrea virginica* and four species listed under the U.S. Endangered Species Act including the Gulf of Mexico sturgeon *Acipenser oxyrinchus desotoi*, or Gulf sturgeon, through loss of spawning habitat or in situ changes in spawning or rearing conditions such as flows or temperature.

Gulf sturgeon is an anadromous species historically found throughout much of the northern Gulf of Mexico. Gulf sturgeon use freshwater habitats in coastal rivers during much of the year, and overwinter in the Gulf of Mexico (Huff 1975; Wooley and Crateau 1985; Fox et al. 2000). Gulf sturgeon populations have declined from historical levels throughout their native range, possibly owing to overfishing, loss of spawning habitat, alteration of riverine rearing or resting habitat, or a combination of these and other factors (Clugston et al. 1995; Zehfuss et al. 1999). This species was classified as threatened under the U.S. Endangered

Species Act (ESA) in 1991 because of concern by a variety of state and federal management agencies over declines in stock abundance and potential threats to population viability (U.S. Office of the Federal Register 1991). Despite reductions in total mortality owing to the elimination of targeted fisheries for Gulf sturgeon in the mid- and late-1980s, sturgeon populations have not rebounded as managers had hoped and the viability of most extant populations is unknown (USFWS and Gulf States Marine Fisheries Commission 1995).

Federal agencies currently recognize seven Gulf sturgeon populations including the Apalachicola River stock (USFWS and National Marine Fisheries Service 2003). This stock has been reduced in abundance to a few hundred individuals (Zehfuss et al. 1999), probably through a combination of harvest and human alterations to critical habitats in the Apalachicola River and elsewhere during the last 100 years. The Apalachicola River Gulf sturgeon stock was heavily fished by commercial fishers during the late 19th and first half of the 20th century (Huff 1975). Peak recorded Apalachicola River Gulf sturgeon harvest occurred in 1900 with a catch of 38,300 kg, after which catch declined steadily to around 900–1,500 kg annually from 1920 until the fishery’s closure in 1984 (Huff 1975).

Throughout their native range, loss of access to spawning habitat owing to changes in riverine flow or channel modifications is considered a likely impediment to Gulf sturgeon population recovery (USFWS and Gulf States Marine Fisheries Commission 1995). Several studies of this species have focused on the location and timing of spawning and characteristics of spawning habitats in the Suwannee (Marchant and Shuttles 1996; Sulak and Clugston 1998), Choctawhatchee (Fox et al. 2000), Pascagoula (Ross et al. 2004), and Yellow and Escambia rivers (Craft et al. 2001). These authors have generally characterized spawning habitat to be located in portions of coastal rivers with associated limestone outcroppings, gravel, or other hard-bottom habitats (Sulak and Clugston 1998; Fox et al. 2000). Completion of the Jim Woodruff Lock and Dam (JWLD) complex on the upper Apalachicola River in 1957 blocked fish passage and removed access to approximately 78% of historical Gulf sturgeon riverine habitat (USFWS and Gulf States Marine Fisheries Commission 1995) within the Apa-

lalachicola–Chattahoochee–Flint River basin (ACF). Several potential spawning sites have been identified in the upper portion of the Apalachicola River, all within 40 km downstream from the JWLD (USACE 2004). Additionally, the effects of altered river flows of the Apalachicola River owing to multiple dam facilities in the basin are not known.

Anthropogenic modification of flow patterns may significantly affect Gulf sturgeon behavior, growth, and survival, as observed with other sturgeons (Khoroshko 1972; Auer 1996). Kynard and Parker (2004) demonstrated experimentally that larval and juvenile Gulf sturgeon exhibit unique in-river migration, dispersal, and feeding patterns that may be adaptations to living in rivers. Water velocity and flow regime influence sturgeon spawning by stimulating adult fish to move to spawning grounds, structuring and modifying substrate to create suitable areas for egg attachment, and providing adequate oxygenation for egg survival (Auer 1996; Fox et al. 2000). Based on our present understanding of sturgeon ecology, it is possible that altered riverine flow regimes may affect spawning success and possibly recruitment patterns of the population (Sulak and Randall 2007). Changes in recruitment could have deleterious effects on adult abundance, population growth, and ultimately the recovery and delisting of Gulf sturgeon.

The objectives of this study were to identify and characterize Gulf sturgeon spawning habitats and evaluate how alterations in Gulf sturgeon recruitment patterns could affect population viability and prolong recovery of this threatened species, despite previous management actions to reduce total mortality. Our study is motivated by recent drought conditions and associated riverine flow management plans that in combination potentially increase frequency, duration, and magnitude of low-flow conditions within the Apalachicola River. We addressed the first objective by conducting an intensive field sampling program to document spawning sites and characterize abiotic conditions that distinguish these sites. For our second objective we built a simulation model to assess how reductions in recruitment would potentially affect the viability of the Apalachicola River Gulf sturgeon stock. Because Gulf sturgeon select specific spawning habitat and conditions (Fox et al. 2000), we surmised that the alteration or dewatering of these habitats, such as extreme low-flow events related to drought or dam operations, during spring spawning events could lead to drastic reductions in recruitment. Using our model, we evaluated the effect of these potential periodic dewatering events during the spring-spawning season and associated year-class failure on population structure and viability using six recruitment variability

scenarios. We tested a range of hypothetical recruitment scenarios motivated by a series of extreme low-flow events observed during severe basin-wide drought in 2006–2008, which resulted in spawning site dewatering. Our intent is that these flow conditions represent a worst-case scenario within the Apalachicola River and that these results serve as an aid in water policy development within the Apalachicola River basin.

## Methods

**Egg sampling.**—Standard Gulf sturgeon egg sampling techniques were used to identify active spawning sites from a list of nine potential spawning sites, defined as areas with suitable hard-bottom substrates, identified by habitat surveys conducted by U.S. Fish and Wildlife Service (USFWS) and U.S. Army Corps of Engineers (USACE) personnel in the Apalachicola River during 2003 and 2004 (USACE 2004). Egg samplers were patterned after Marchant and Shutters (1996) and Fox et al. (2000) and consisted of circular floor-buffing pads (50.8 cm diameter) anchored to the river bottom with welded rebar. Because Gulf sturgeon eggs sink quickly and adhere to substrates immediately after spawning, sites where eggs were collected were assumed to be spawning sites (Fox et al. 2000). We deployed egg samplers at a subset of the potential spawning locations (based on relocations of telemetered adult Gulf sturgeon and anecdotal information based on local reports) during the spring in 2005, 2006, and 2008 (Figure 1). Timing of sampler deployment each year was based on the entry of telemetry-tagged adult Gulf sturgeon (from a related study) into freshwater portions of the river. Egg samplers were checked every 48–72 h for Gulf sturgeon eggs. The number of egg samplers deployed at a given site ranged from 2 to 67 depending on the size of the sampling site and the number of egg samplers available at that time. We concluded egg sampling after water temperatures reached 25°C, the upper thermal limit of egg survival (Chapman and Carr 1995), and when telemetered individuals exhibited no further movement characteristic of spawning (Fox et al. 2000).

As egg samplers were checked at spawning sites the location of the each sampler (degrees and decimal minutes) and depth (m) were recorded. If a Gulf sturgeon egg was collected on an sampler, water temperature (°C) at the surface was recorded using a YSI 556 MPS meter (YSI, Inc., Yellow Springs, Ohio), and water velocity (m/s) was recorded at approximately 60% of the depth using a Marsh–McBirney Flo-Mate 2000 flowmeter (Hach/Marsh–McBirney, Frederick, Maryland). General flow velocities were taken at random locations within each potential spawning area

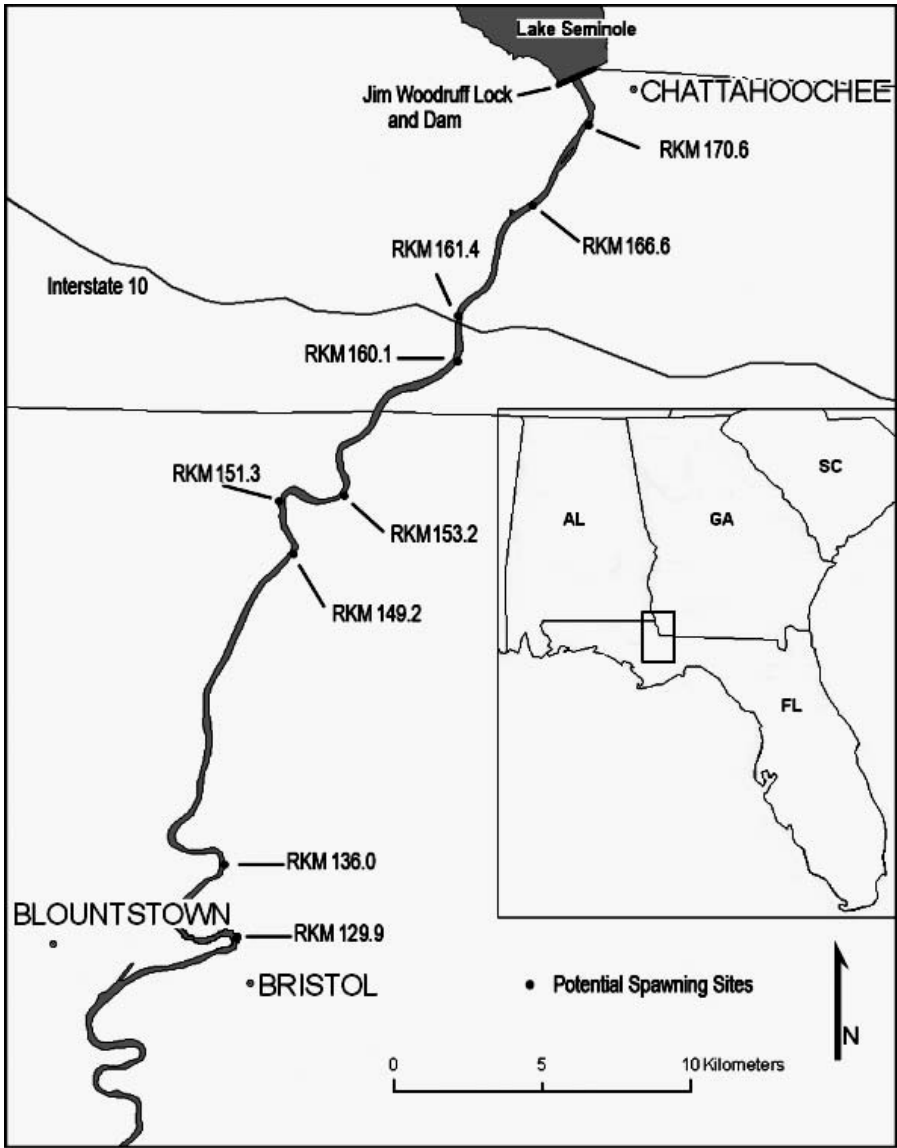


FIGURE 1.—Potential Gulf sturgeon spawning sites as identified by suitable spawning habitat within the Apalachicola River, Florida.

regardless of whether eggs were found at that site. Daily discharge and river stage were obtained from U.S. Geological Survey gauge 02358000, located immediately below JWLD at river kilometer (rkm) 170. Dam discharge rates, river stage, date, depth, substrate, temperature, and egg sampler flow velocities were used to examine the interactions between physical river characteristics and locations where Gulf sturgeon eggs were collected on samplers within a given site. Substrate characteristics at each site had been previ-

ously described by the USACE (2004) spawning site surveys.

*Population model.*—The effects of recruitment failure on Gulf sturgeon population viability were assessed using an age-structured model built using Microsoft Excel software (Microsoft Corporation, Redmond, Washington). The model was the same as that used in Flowers (2008). Our population consisted of three tables, each an individual page within an Excel spreadsheet (Figure 2). The first table featured attribute-at-age information on a per-recruit basis for

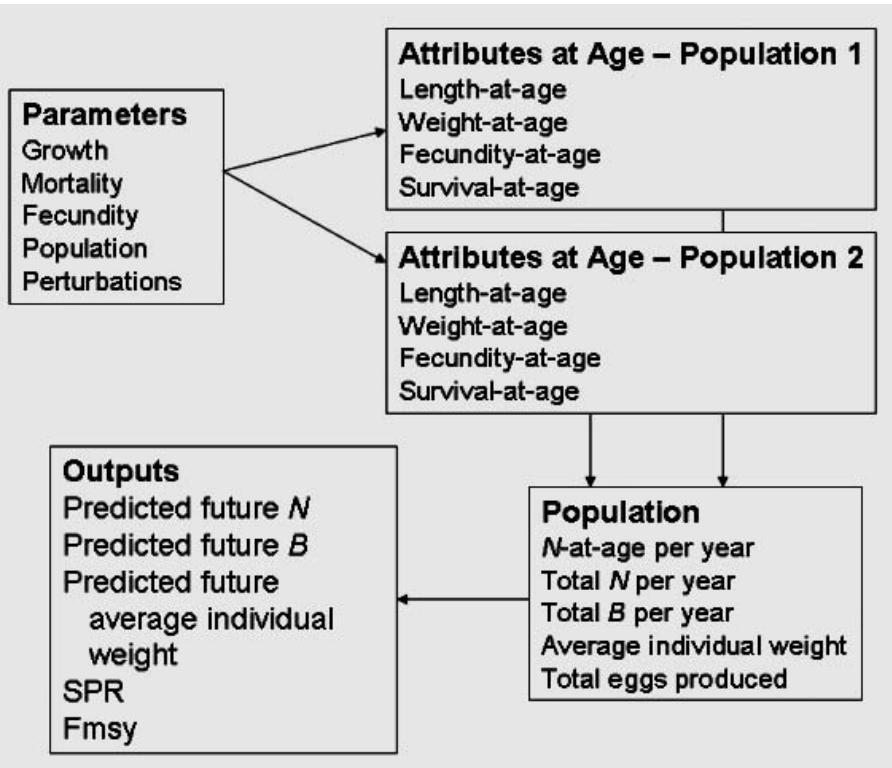


FIGURE 2.—Model structure for this study of Gulf sturgeon (Flowers 2008). Abbreviations are as follows:  $N$  = the size of the population,  $B$  = biomass of the population, SPR = the spawning potential ratio, and  $F_{msy}$  = fishing mortality at the maximum sustainable yield.

wild born individuals, while the second table contained attribute-at-age information for hatchery-stocked individuals; the third is derived from the first two tables and simulates the actual population by adding numbers of individuals at age per year. Population numbers at age in any given year were calculated using the function

$$N_{(a+1,t+1)} = (N_{a,t})(S_a),$$

where  $a$  is age,  $t$  is time, and  $S_a$  is age-specific survival. Other parameters included in the model and used in assessing population responses to management actions include natural mortality ( $M$ ), fishing mortality ( $F$ ), fecundity ( $f$ ), vulnerability at age ( $v$ ), initial population size ( $N_0$ ), and skip-spawning effects ( $Sk$ ). A list of all variables and the values used in this study is provided in Table 1.

*Length and weight at age.*—The length-at-age relationship for Gulf sturgeon was used to directly or indirectly define other model parameters such as weight at age, sampling vulnerability, mortality, and fecundity. The relationship was described using

available Apalachicola River direct fin-ray aging information (L. Jenkins, USFWS, unpublished data) and incremental growth data observed through a USFWS tag–recapture program (from 1978 to 2007) in a single-likelihood framework described by C. Walters (University of British Columbia, personal communication) and T. Essington (University of Washington, personal communication). This method combined age data with incremental growth data and provided an increased sample size over a greater range of sampled lengths, which is important because larger size-classes were under-represented in the direct aging data. Using incremental growth data from the existing Gulf sturgeon tagging study to estimate growth has the advantages of not requiring direct age estimates of individuals, important in a case such as this for Gulf sturgeon where lethal aging methods (otoliths) are impracticable and alternative aging tissues (fin rays) are inaccurate (Rien and Beamesderfer 1994; Rossiter et al. 1995). The output from this method was then reparameterized into a simplified von Bertalanffy growth curve (Ricker 1975), recommended by Johnson

TABLE 1.—Input definitions, values, and sources used by the age-structured forward-projecting Gulf sturgeon model.

Variable or parameter	Description	Value	Source
$F_{msy}$	Fishing mortality at maximum sustainable yield	0.05–0.08	Pine et al. (2008)
$K$	Brody growth parameter	0.13	Flowers (2008)
$L_{\infty}$	Von Bertalanffy asymptotic length parameter	2,200 mm	Flowers (2008)
$M$	Annual natural mortality, overall	0.13	Flowers (2008)
$M_a$	Age-specific mortality	variable	Lorenzen (2006)
$N_a$	Population size in a given year	Estimated	
$N_0$	Initial model population size	~5,250	Flowers (2008)
recK	Goodyear recruitment compensation parameter	4	Flowers (2008); Martell et al. (2008)
$S_a$	Age-specific survival = $(1 - M_a)$	Estimated	Lorenzen (2006)
$Sk$	Factor to adjust skip-spawning effects	1–5 year	Sulak and Clugston (1999); Pine et al. (2001)
$W_{mat}$	Weight at maturity	10.8 kg	Huff (1975); Flowers (2008)
$M_{ai}$	Initial age at maturity	8	Huff (1975)
$M_{ar}$	Number of years needed for entire population to mature	4	Flowers (2008)
$M_{ab}$	Age of 50% maturation	10	Flowers (2008)
$V$	Vulnerability at age	Variable at age	Flowers (2008); F. Parauka, personal communication

et al. (2005) for sturgeon species, as follows:

$$L_a = L_{\infty}(1 - e^{-ka}),$$

where  $L_{\infty}$  is the asymptotic length parameter,  $k$  is the Brody growth parameter, and  $L_a$  is length at age. This simplified formulation assumes that the variable  $t_0$  (age at length zero) is zero and eliminates problems arising from limited size-structure representation in the data set (few very young or old individuals) that could lead to biologically unrealistic estimates of  $t_0$  (Johnson et al. 2005). Weight at age ( $W_a$ ) was calculated using the traditional formulation

$$W_a = aL^b,$$

where  $a$  and  $b$  are species specific constants. In this case  $a = 1.23 \times 10^{-6}$  and  $b = 3.3$ . This  $Wa$  information was used to estimate fecundity at age. A single length and weight growth model was used for both sexes because of a lack of published support for sexually dimorphic growth for Atlantic sturgeon (Johnson et al. 2005).

**Mortality.**—Estimates of  $M$ , representing the average annual rates at which individuals exit the population by death, are commonly acquired from tagging studies (such as Sulak and Clugston 1999 for Gulf sturgeon) or calculated from population dynamics aspects such as longevity (Hewitt and Hoenig 2005) or individual growth rate. Jensen (1996) proposed using the von Bertalanffy  $k$  parameter to estimate overall  $M$ , where  $1.5k = M$ . However, we used alternative method where:

$$M = k,$$

(C. Walters, University of British Columbia, personal communication). Evidence for this relationship was found in a 2008 review of fish species on Fishbase

(www.fishbase.org) where estimates of both  $M$  and  $k$  were available. Correlation analysis between these two parameters found a 1:1 relationship such that  $M$  and  $k$  were proxies. Annual  $M$  was variable at age and dependent on overall length, simulated here by Lorenzen’s (2000) method to predict age-specific mortality as follows:

$$M_a = M_{amax} \times \frac{L_{\infty}}{L_a},$$

where  $M_a$  is mortality at age and  $M_{amax}$  is mortality at maximum age. The term  $M_{amax}$  was solved for as the value that yields an overall  $M = k$  averaged across all ages. Because Gulf sturgeon are protected from harvest,  $F$  was set to 0 and natural mortality represented most of total mortality ( $Z$ ).

Maximum (or terminal) age is a key parameter in age-structured population models often used in determining mortality rates, total reproductive output, and, as in our model, population growth rate. Pine et al. (2001) used a maximum age of 25 for the Suwannee River population, but it is probably a conservative estimate as Scott and Crossman (1973) estimated a maximum age of 60 for the Atlantic sturgeon *A. oxyrinchus* subspecies. We used a maximum age of 50 for all simulations based on estimates of longevity, in turn based on natural mortality, following methods by Hewitt and Hoenig (2005) and multiple recaptures of adult Gulf sturgeon that had been at liberty for more than 10 years and were at least 20 years old at tagging.

**Fecundity.**—Fecundity is the mean egg production for individual female Gulf sturgeon, which increases with fish weight after the age of maturity (Walters and Martell 2004) and is approximated by

$$f_a = W_a - W_{mai},$$

where  $f_a$  is fecundity at age,  $W_a$  is weight at age, and

$W_{mai}$  is the weight at the initial age of maturity. Within the model, fecundity determines the potential number of recruits that an individual can produce. Gulf sturgeon, like other sturgeons, are highly fecund and produce large numbers of eggs at spawning (Huff 1975; Chapman et al. 1993). However, Gulf sturgeon mortality from age 0 and age 1 is extremely high and estimated between 99.9% and 100.0% (Pine et al. 2001), meaning large numbers of eggs may not result in large numbers of age-1 recruits.

**Skip-spawning.**—An important aspect of Gulf sturgeon life history is skip-spawning, where individuals may not spawn every year. In any given year the spawning population is less than the total population (Sulak and Clugston 1998), but how much less depends on the periodicity of the skip-spawning events (Jorgensen et al. 2005). Female Gulf sturgeon mature between ages 8 and 12 (Huff 1975) and probably spawn at intervals ranging from every 3–5 years (Smith 1985; Fox et al. 2000). Because of skip-spawning and the late age at maturity, female Gulf sturgeon may only spawn a few times during their life (Sulak and Randall 2002). This relationship between skip-spawning and fecundity level is not unique to sturgeon and has been documented in other species as a life history adaptation based on energy availability and allocation (Jorgensen et al. 2005; Rideout et al. 2005). We incorporated female skip-spawning in the recruitment and fecundity aspects of the model using a modified Ricker curve, where

$$P(Sp) = \left[ (a - Ma_i) \times \left( e \times \frac{1}{Ma_r} \times \frac{1}{Ma_h - Ma_i} \right) \times \exp \left( - \frac{1}{Ma_h - Ma_i} \times a - Ma_i \right) \right] + \left( \frac{1}{Sk} \right)^{(L_\infty / L_a)},$$

with  $P(Sp)$  as the probability of an individual spawning in a given year,  $Ma_i$  the initial maturation age,  $Ma_r$  the number of years needed for entire population to mature,  $Ma_h$  the age of 50% of population maturation, and  $Sk$  the average skip-spawn interval (in years) of fully mature individuals. Male Gulf sturgeon exhibit similar skip-spawning behavior to females, albeit on shorter 1–5-year intervals (Smith 1985); however, males are excluded from this skip-spawning simulation because it is generally assumed that there are enough males available in any given year to spawn with females.

**Recruitment.**—Population recruitment in the model was simulated using yearly estimates of population egg production controlled by a density-dependent recruit-

ment relationship. A Beverton–Holt recruitment relationship (Beverton and Holt 1957) was used in this study and in Pine et al. (2001), although there are little data available on the actual spawner–recruit relationship exhibited by Gulf sturgeon populations. The stock–recruit relationship followed the form

$$R = \frac{a\varepsilon}{1 - b\varepsilon},$$

where  $R$  is annual recruits to age 1,  $a$  and  $b$  are stock–recruitment parameters, and  $\varepsilon$  represents annual population egg production.

**Initial population size and recruitment compensation.**—Two model parameters, the Goodyear compensation ratio ( $recK$ ; Goodyear 1977, 1980) and the initial population size before fishing ( $N_0$ ), are population-specific input parameters used to initiate simulation runs. The Goodyear compensation ratio is defined as the ratio of juvenile survival rate at low stock sizes relative to juvenile survival in the unexploited condition, which represents the recruitment compensation potential of the population and was used to describe the population–recruitment response to depletion. Higher  $recK$  values imply populations are more resilient to exploitation than populations with low  $recK$  values because they have a stronger compensatory response when depleted (Walters and Martell 2004). We estimated  $recK$  to have a value of 4, following the approach in Martell et al. (2008) that used the management parameters of maximum sustained yield (MSY) and the exploitation rate needed to achieve this yield ( $F_{MSY}$ ) (Flowers 2008). Our  $recK$  value was similar to the value used by Walters et al. (2006) for white sturgeon *A. transmontanus*. Estimates of  $N_0$  were developed using data from the historic Apalachicola Gulf sturgeon fishery. These unexploited abundance estimates were useful guidelines for initializing the model; however, precise estimates were not required for model operation or predictions. Development of  $recK$  and  $N_0$  parameter estimates and sensitivity analysis are discussed further in Flowers (2008).

**Model development and initiation.**—To assess our model structure and input parameters, we initiated our model by simulating 25 years of fishing at rates that reduced the population to published abundances estimated at the end of the commercial fishery (about 282 individuals >450 mm in size; Wooley and Crateau 1985). The actual commercial fishery lasted almost 90 years (from about 1897 to 1985), but the heaviest period of fishing lasted for about 25 years from 1900 to 1925 followed by sustainable but light fishing until 1985. To mimic the pattern of the actual fishery, we chose to simulate an intense fishery followed by a decline in exploitation to create a realistic population

TABLE 2.—Scenarios used to simulate the effects of flow regime modifications on Gulf sturgeon population recovery.

Scenario	Description	Recruitment pattern	Year interval
1	Unmodified simulated population recruitment used as a baseline	Steady	Continuous
2	Recruitment fixed at zero to check for time to population extinction	None	Continuous
3	Recruitment zero once every $x$ years	Periodic complete failure	2, 4, 8
4	Recruitment halved once every $x$ years	Periodic partial failure	2, 4, 8
5	Recruitment doubled once every $x$ years	Periodic boom	2, 4, 8
6	Recruitment doubled for 1 year and zero in the remaining $x$ years of the cycle	Boom–failure cycle	2, 4, 8

structure (based on observational reports from the fishery; Flowers 2008) from which to begin the simulations (initial year 1985). We then ran the population model forward 100 years from this baseline to assess input parameters by examining transient dynamics to ensure that the population did not collapse or increase at biologically unreasonable rates (Pine et al. 2001).

From this baseline we evaluated six recruitment scenarios developed to assess effects of potential periodic dewatering events during spring spawning season and associated year-class failure on population structure and viability of the Apalachicola Gulf sturgeon population (Table 2). Our objective was not to simulate exact recruitment patterns for the Apalachicola Gulf sturgeon population, but to evaluate population responses from recruitment scenarios that may occur as a result of proposed water management actions. Although our model is deterministic, we believe that simulating a variety of scenarios will provide an informative range of population responses to proposed management actions. We then compared the results between the baseline and each hypothetical recruitment scenario to assess the effect of each scenario treatment on population recovery.

Results

Egg Sampling

Eggs were collected on four dates between 27 April and 13 May 2005, 12 dates between 5 April and 1 May 2006, and 16 dates between 4 April and 14 May 2008 (Table 3). A total of 20 Gulf sturgeon eggs and one larva were collected at a single site in 2005, 189 fertilized Gulf sturgeon eggs were collected on egg samplers at two sites during 2006, and 282 eggs were collected at three sites in 2008 (Table 3). In all three years, over 82% of the eggs and larvae collected came from a single site consisting of a large limestone outcrop (rkm 170.6,  $N = 405$ ; Table 3). This site is near JWLD and is considered the primary spawning site for Gulf sturgeon within the Apalachicola River (Wooley et al. 1982). Because of proximity to the dam, this site is vulnerable to dewatering during extreme low-flow events owing to the elevation of the hard-bottom habitats and narrow incised river channel lacking floodplain storage to buffer discharge changes. Gulf sturgeon eggs were also collected at a second hard-bottom site at rkm 160.1 and a third site at rkm 161.4 (2008 only, Table 3; Figure 1). Physical characteristics for all egg-collection sites are provided in Table 4. Gulf sturgeon movement toward spawning sites and anom-

TABLE 3.—Sampling locations, sampling dates, and numbers and percentages of eggs collected in each year of Gulf sturgeon egg sampling in the Apalachicola River.

Site and year	Dates of sampling	Number of eggs collected	Percent of eggs collected
Rkm 170.6			
2005	Apr 21–May 16	21	
2006	Mar 27–May 10	180	
2008	Apr 4–May 28	204	
Total		405	82
Rkm 160.1			
2005	Not sampled		
2006	Mar 19–May 10	11	
2008	Apr 4–May 28	36	
Total		47	9.5
Rkm 161.4			
2005	Not sampled		
2006	Apr 12–Apr 17	0	
2008	Apr 4–May 28	42	
Total		42	8.5
Grand total		494	100

TABLE 4.—Physical characteristics of spawning sites during Gulf sturgeon egg collection in the Apalachicola River.

Variable	Rkm 170.6, 2005	Rkm 170.6, 2006	Rkm 160.1, 2006	All sites, 2006	Rkm 170.6, 2008	Rkm 160.1, 2008	Rkm 161.4, 2008	All sites, 2008	Rkm 170.6, all years	Rkm 160.1, all years	All sites, all years
Depth (m)											
Mean	3.5	3.9	3.4	3.8	3.3	2.5	3.3	3.2	3.6	2.9	3.5
SD	± 0.9	± 1.1	± 0.9	± 1.2	± 1.2	± 0.9	± 1.0	± 1.2	± 1.2	± 0.9	± 1.2
Median	3.5	3.6	3.5	3.6	3.1	2.1	3.1	3.2	3.4	2.7	3.4
Range	2.3–6.1	1.8–6.5	2.3–4.5	1.8–6.5	1.1–7.4	1.9–4.2	0.2–4.1	0.2–7.4	0.9–7.4	1.9–4.5	0.2–7.4
Velocity (m/s)											
Mean	0.93	0.75	0.81	0.74	0.68	0.70	0.71	0.68	0.71	0.74	0.74
SD	± 0.18	± 0.15	± 0.12	± 0.18	± 0.24	± 0.15	± 0.19	± 0.22	± 0.21	± 0.15	± 0.18
Median	0.95	0.77	0.81	0.76	0.70	0.70	0.73	0.71	0.74	0.72	0.77
Range	0.55–1.15	0.25–1.08	0.65–0.95	0.25–1.08	0.19–1.10	0.44–1.00	0.14–0.92	0.14–1.10	0.19–1.15	0.44–1.00	0.14–1.15

alous swim patterns indicative of spawning (Fox et al. 2000) were not observed nor were eggs collected until water temperatures at the spawning sites approached 20°C in all 3 years. No spawning was observed following water temperature increases beyond the 25°C lethal limit for eggs (Chapman and Carr 1995).

Gulf sturgeon eggs were collected over substrates dominated by hard limestone bedrock or consolidated clay with small amounts of finer substrates such as gravel, pebble, and sand. These substrate types were similar to those observed by Sulak and Clugston (1998) on the Suwannee River. A few egg samplers were placed in mid-channel locations with sandy substrates and higher flow velocities; however, no eggs were collected in these areas possibly due to decreases in gear efficiency because of the higher water velocity. Egg samplers placed in relatively shallow, low-flow areas also did not capture eggs and the samplers themselves were often observed to be covered in silt.

The three sites where eggs were collected (rkm 170.6, rkm 161.4, and rkm 160.1, Figure 1) featured shallow to moderately deep (2–6 m) hard-bottom areas with slow to moderately fast (0.14–1.15 m/s), relatively nonturbulent flow over the surface. These sites were also located along generally straight or slightly curving sections of the river. Egg-sampling took place at other potential spawning sites in 2005 and 2006, but no Gulf sturgeon eggs were collected at these sites. Also during this study, none of the telemetered individual Gulf sturgeon in the river demonstrated behaviors that indicated spawning took place at sites other than those monitored. Full physical descriptions of each identified and proposed spawning site are included in USACE (2004).

#### Population Modeling

*Scenarios 1 and 2: constant and zero recruitment.*—Our baseline model (scenario 1) demonstrates that given Gulf sturgeon life history characteristics such as late sexual maturity, skip spawning, and low recruit-

ment compensation rate, Gulf sturgeon populations are slow to rebuild following intensive fishing. Using constant annual recruitment, this scenario predicted that after a 100-year recovery period following 25 years of intensive fishing, Gulf sturgeon populations would have only reached approximately 80% of the prefishing population level (Figure 3). Scenario 2 represents the most extreme recruitment pattern where recruitment was zero after the end of fishing, and this scenario predicts population extinction within 25 years after fishing.

*Scenario 3.*—Scenario 3 represented different spawning intervals that could occur within the Apalachicola River and other Gulf sturgeon stocks. The overall pattern from these scenarios is that periodic total recruitment failures will cause an increase in recovery time, with more frequent failures having a greater effect on time until recovery. Complete recruitment failure in 2-, 4-, and 8-year intervals produced populations at 2, 38, and 58% of historic levels, respectively, after a 100-year recovery period (Figure 3). Simulations with complete recruitment failure every 2 years resulted in a population that was predicted to remain stable through time.

*Scenario 4.*—Similar to the complete recruitment failure on regular intervals, partial recruitment failures lead to large increases in recovery time over constant recruitment scenarios. A partial recruitment failure could result if some spawning sites were more affected by low-flow conditions than other sites. As expected, the effects on population recovery are roughly half the strength of the complete failure treatments. Partial recruitment failure in 2-, 4-, and 8-year intervals (scenario 3) produced populations at 28, 57, and 68% of historic levels, respectively (Figure 4).

*Scenario 5.*—This scenario was designed to mimic the proposed “boom” year-classes of high recruitment on regular intervals (Sulak and Randall 2002). These periodic large recruitment events decrease the simulat-

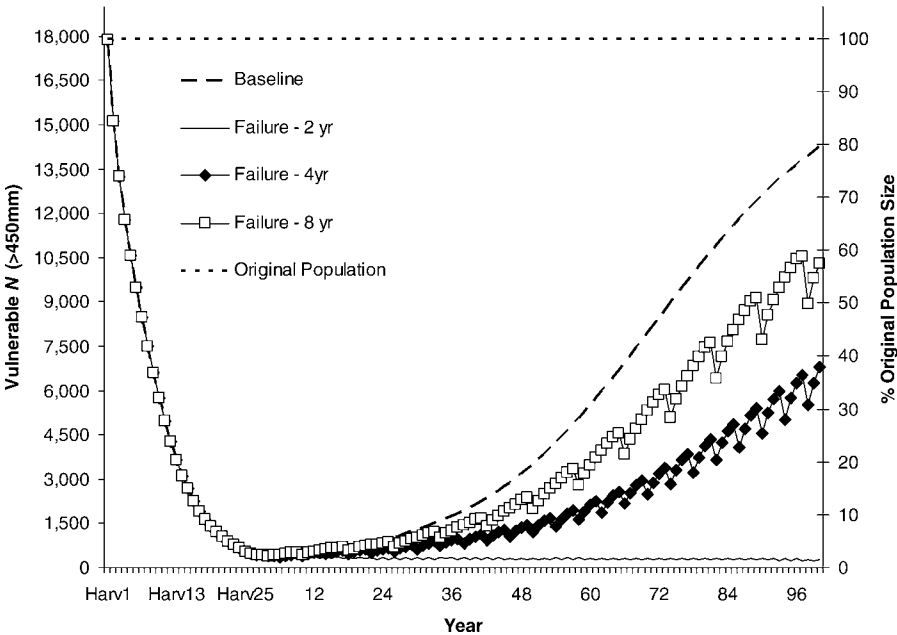


FIGURE 3.—Gulf sturgeon population trajectories for scenario 3, which incorporates periodic total recruitment failures. The thick dashed line represents a baseline simulation of constant recruitment (scenario 1), the dotted horizontal line the estimated population size before the onset of intensive commercial fishing. Harv*n* = year of simulated harvest in model.

**Spawning Site Selection and Potential Implications of Modified Flow Regimes on Gulf Sturgeon Population Viability**

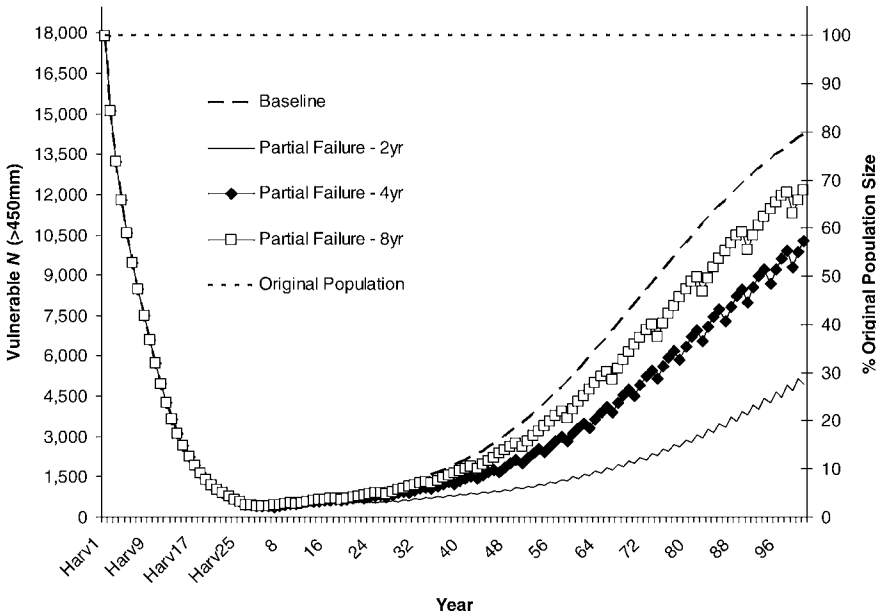


FIGURE 4.—Gulf sturgeon population trajectories for scenario 4, which incorporates periodic partial recruitment failures. See Figure 3 for additional details.

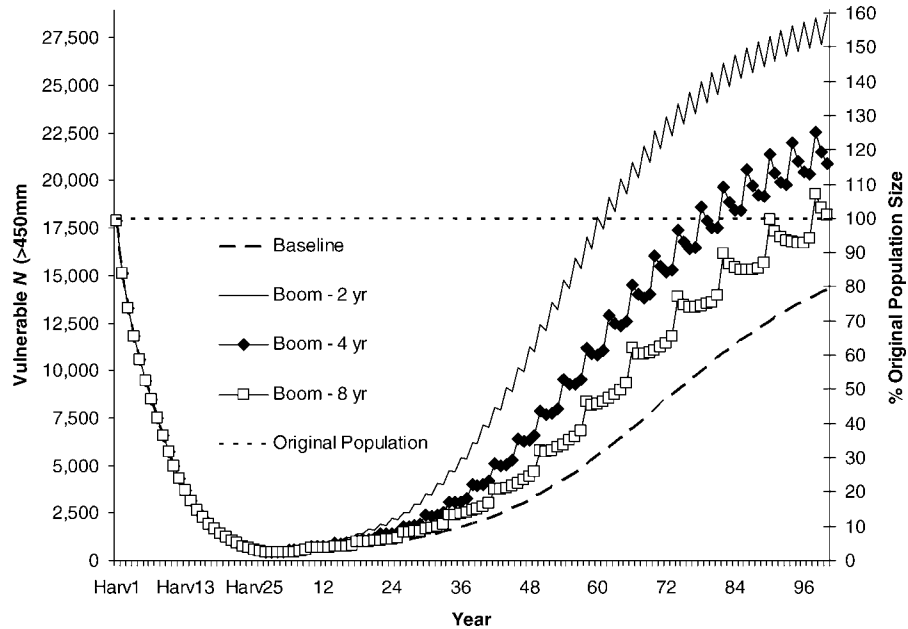


FIGURE 5.—Gulf sturgeon population trajectories for scenario 5, which incorporates periodic recruitment booms. See Figure 3 for additional details.

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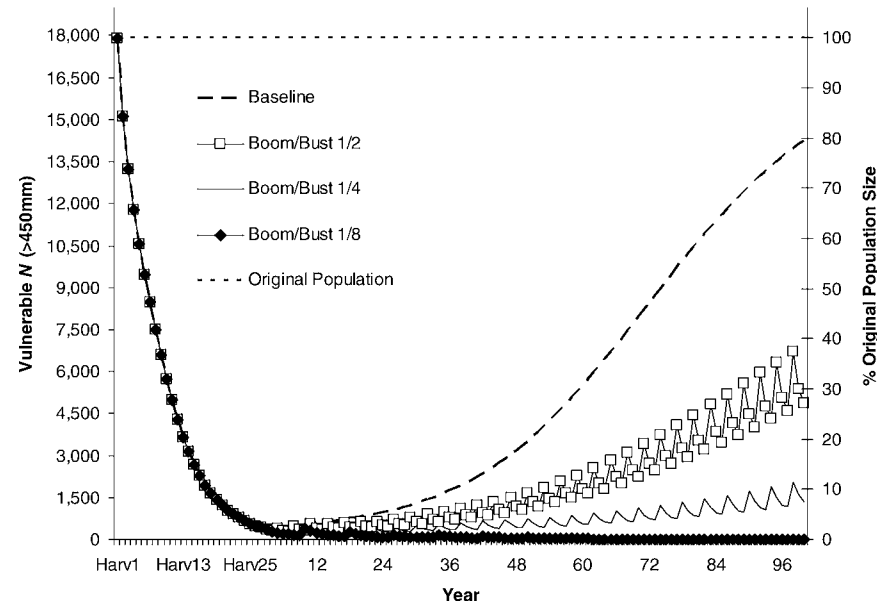


FIGURE 6.—Gulf sturgeon population trajectories for scenario 6, which incorporates a boom–bust recruitment pattern. See Figure 3 for additional details.

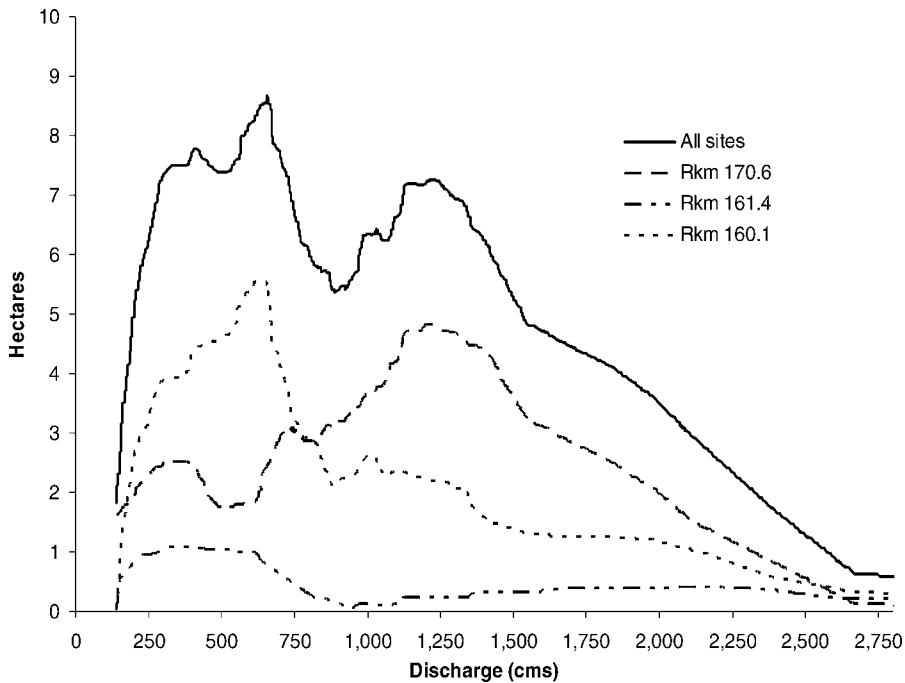


FIGURE 7.—Discharge ( $\text{m}^3/\text{s}$ ) and available Gulf sturgeon spawning habitat for known spawning sites in the Apalachicola River (USFWS 2008).

ed population recovery time. With large year-classes occurring in 2-, 4-, and 8-year periods, population sizes after 100 years were 161, 117, and 102% of historic levels, respectively (Figure 5). These estimates exceed the estimates of historical population size and, thus, are expected to exceed the historical carrying capacity.

*Scenario 6.*—Periodic patterns of variable recruitment success and failure produced a wide range of results. Boom–bust cycles of 1 out of 2 years (one year of boom recruitment followed by one year of zero recruitment), 1 out of 4 years, and 1 out of 8 years produced resulting population sizes of 27, 7, and 0% of the original after 100 years (Figure 6). Extinction with the cycle of 1 year recruitment in 8 years was predicted to occur within 80 years after the end of harvest.

## Discussion

### *Flow Changes and Recruitment*

Fishery managers are concerned that significant discharge reductions in the Apalachicola River during spawning periods via a combination of reduced basin inflows and drought-operation schedules of dam facilities could dewater Gulf sturgeon spawning sites, leading to years of reduced or failed recruitment. This is a significant concern to managers because of reduced access to historic spawning habitat (loss of ~78%) through dam construction (USFWS and Gulf States

Marine Fisheries Commission 1995). During persistent periods of drought, such as during 2006–2008, extreme low-flow events could dewater spawning sites over several years, impairing recruitment for multiple Gulf sturgeon year-classes. Beamesderfer and Farr (1997) presented evidence to show that reductions in habitat area caused by flow variation can reduce recruitment of age-0 sturgeon. The relationship between JWLD discharge and the percent area inundated at potential spawning sites is presented in Figure 7; however, the exact relationship between available spawning habitat and Gulf sturgeon recruitment success is difficult to estimate. Although spawning has only been observed at three sites, it was possible that spawning occurred at other areas with suitable bottom substrates, but was unobserved. Uncertainty related to how Gulf sturgeon select spawning areas, and how these preferences change with river discharge, could affect the severity of recruitment effects. For example, greater plasticity in spawning site suitability could mediate the effects of low flows; however, inflexibility in site selection could increase the severity of low-flow effects on spawning success.

In addition to spawning habitat availability, changes in flow regime may also affect other aspects of Gulf sturgeon spawning. Auer (1996) noted several changes in the spawning characteristics of adult lake sturgeon

## Spawning Site Selection and Potential Implications of Modified Flow Regimes on Gulf Sturgeon Population Viability

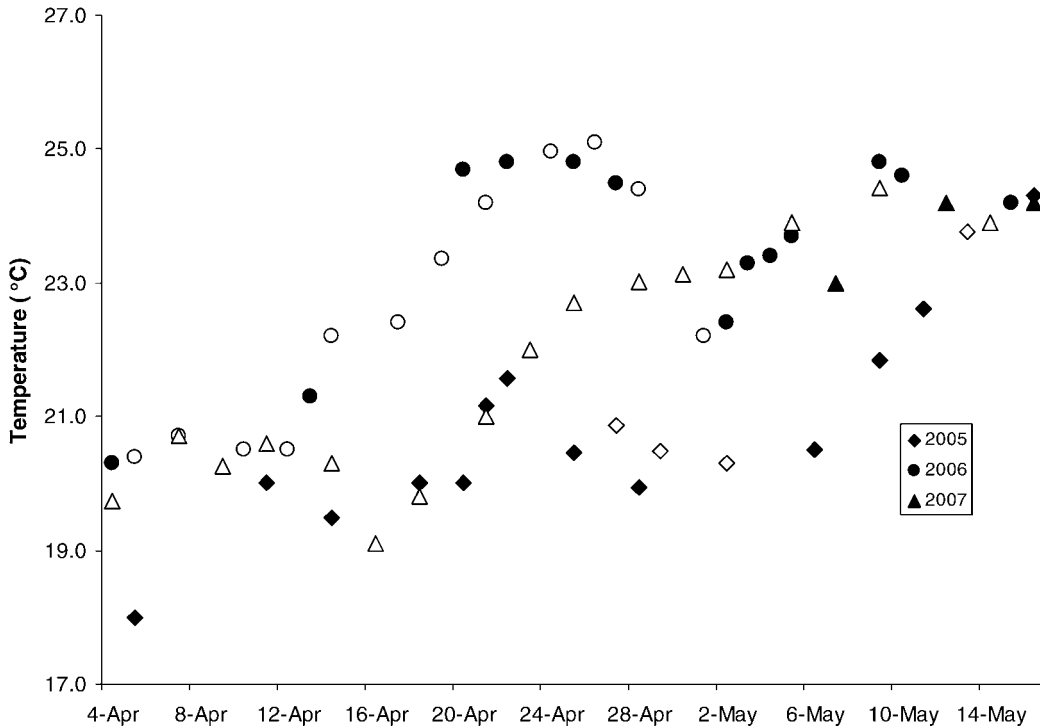


FIGURE 8.—Water temperature and date of spawning for Gulf sturgeon on the Apalachicola River, 2005–2007. Open symbols represent dates when eggs were collected, filled symbols dates when eggs were not collected.

*A. fulvescens* in the Sturgeon River, Wisconsin, that coincided with dam operations shifting from a peaking flow scenario to a more natural run-of-river operation schedule; the amount of time sturgeon were on the spawning grounds decreased, catch rates of sturgeon at the spawning grounds increased, and more female sturgeon in reproductive condition were observed. Auer (1996) suggested that the more consistent water flows provided by the run-of-river flows versus peaking-flow regimes maintained water depths throughout the spawning season, making access to the spawning sites by large (mostly female) fish easier.

Watershed and flow regime alterations have been identified as the primary cause of failed recruitment and ultimately the decline of the Kootenai River white sturgeon population (Paragamian et al. 2005). Recent studies have suggested that recruitment in Suwannee River Gulf sturgeon (Randall and Sulak 2007) and Atlantic sturgeon in the Altamaha River, Georgia (D. L. Peterson, University of Georgia, personal communication) may be sensitive to autumn river

discharge. The mechanism for this remains unclear; however, for Gulf and Atlantic sturgeon it may be related to the sensitivity of juvenile life stages to increases in salinity. During low-water years, higher salinity levels in estuarine regions near the mouth of natal rivers may restrict foraging areas for juveniles, thereby decreasing growth and increasing mortality.

Modified flow regimes may also affect in-river temperature regimes in the Apalachicola River. Water temperature is an important spawning cue for sturgeons (Auer 1996; Fox et al. 2000). Decreases in discharge could increase in-river temperatures, possibly reducing the length of the annual 20°C (spawning onset; Fox et al. 2000) to 25°C (upper lethal temperature tolerance; Chapman and Carr 1995) spawning window. During this study, the spawning window in the low-flow years of 2006 and 2008 was observed 3 weeks earlier than during the high-flow year, 2005 (Figure 8).

Increased river temperature in recent drought years could also affect postspawning behavior. In the Apalachicola River, the area immediately downstream

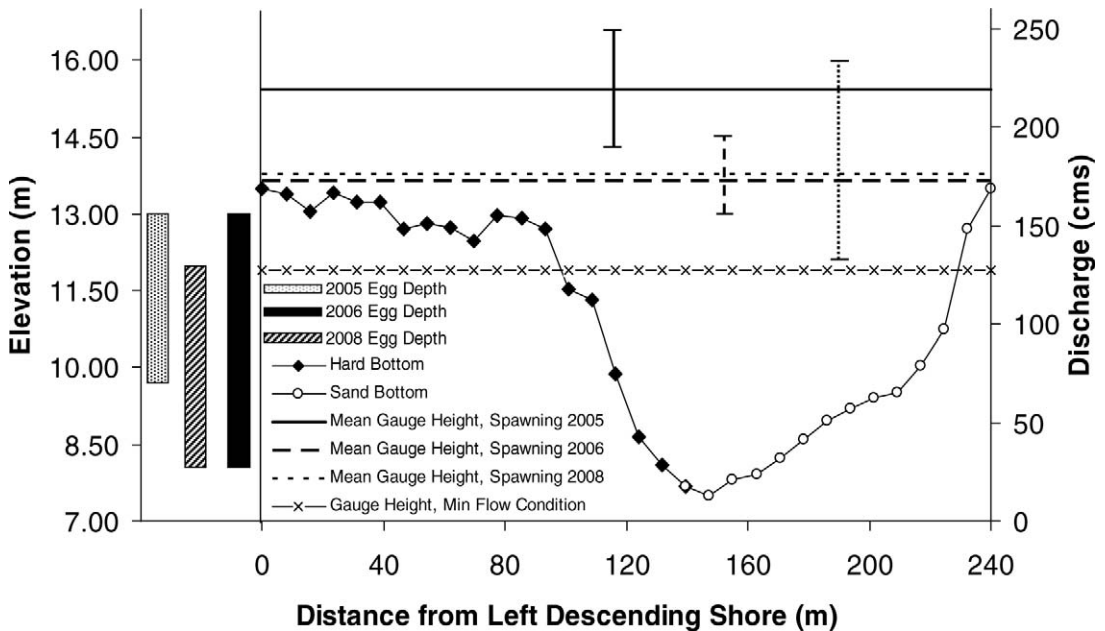


FIGURE 9.—Spawning depth, bottom profile, and average river stage and discharge at the rkm-170.6 site (considered the primary Gulf sturgeon spawning site), 2005–2006 and 2008. The bars on the left represent the range of egg collection depths for all 3 years; eggs were not collected over sand bottom areas. The error bars on the gauge height lines represent the ranges throughout the time during which eggs were collected.

of JWLD has traditionally been used as a summer resting area for adult sturgeon (Zehfuss et al. 1999). However, based on catch rates during summer monitoring programs and relocations of telemetered fish, adult Gulf sturgeon during recent years have been using alternative resting areas downstream (F. Parauka, USFWS, unpublished data). This behavior may be a result of low reservoir levels in Lake Seminole allowing warmer surface water to pass through JWLD, causing increased water temperatures below the dam that exceed 30°C (F. Parauka, unpublished data; USGS gauge 02358000). This temperature range observed in recent years is similar to temperatures in the Gulf of Mexico (NOAA 2008), temperatures that Gulf sturgeon are believed to be avoiding by summering in cooler riverine habitats (Foster and Clugston 1997; Parkyn et al. 2007; Sulak et al. 2007). Alternatively, the river channel below JWLD has been greatly incised in a postdam environment owing to changes in riverine flow conditions (Light et al. 2006). This channel incision has probably increased groundwater seepage into the river that, while providing cooler water temperatures, is also hypoxic or anoxic potentially creating areas of low oxygen in the postdam environment. Juvenile Gulf sturgeon rearing habitat and survival are areas needing research and may represent a key, but little known population bottleneck.

Our egg-collection results indicate that Gulf sturgeon may seek specific physical instream conditions at their spawning sites. Depths and flow velocities at egg-collection events were similar during all years at all sites (Table 4; Figure 9), even at widely varying discharge levels and patterns ranging from 578 to 1,059 m<sup>3</sup>/s during spawning in 2005, 360 to 634 m<sup>3</sup>/s during 2006, and 188 to 1045 m<sup>3</sup>/s during 2008. During periods of lower discharge, Gulf sturgeon will spawn in deeper hard-bottom areas; however, as discharge decreases from 623 to 142 m<sup>3</sup>/s, available spawning habitat area decreases by 76% (from 8.5 to 2 ha) at the three identified spawning sites (USFWS 2008). The available spawning habitats inundated at flows of 142 m<sup>3</sup>/s are generally areas with higher flow velocities and steeper bottom topography (USFWS 2008), which are dissimilar from spawning areas (Marchant and Shutters 1996; Fox et al. 2000). Proposed drought condition flow regulations allowing infrequent flow events of 127 m<sup>3</sup>/s would significantly decrease the availability of Gulf sturgeon spawning habitat to levels approaching zero (Figure 7). In addition to overall flow conditions, small fluctuations in river discharge during spawning events may alter the location of optimal microhabitats for egg or larval sturgeon survival within a given spawning site, rendering areas containing attached eggs unsuitable for egg and larval sturgeon

### Spawning Site Selection and Potential Implications of Modified Flow Regimes on Gulf Sturgeon Population Viability

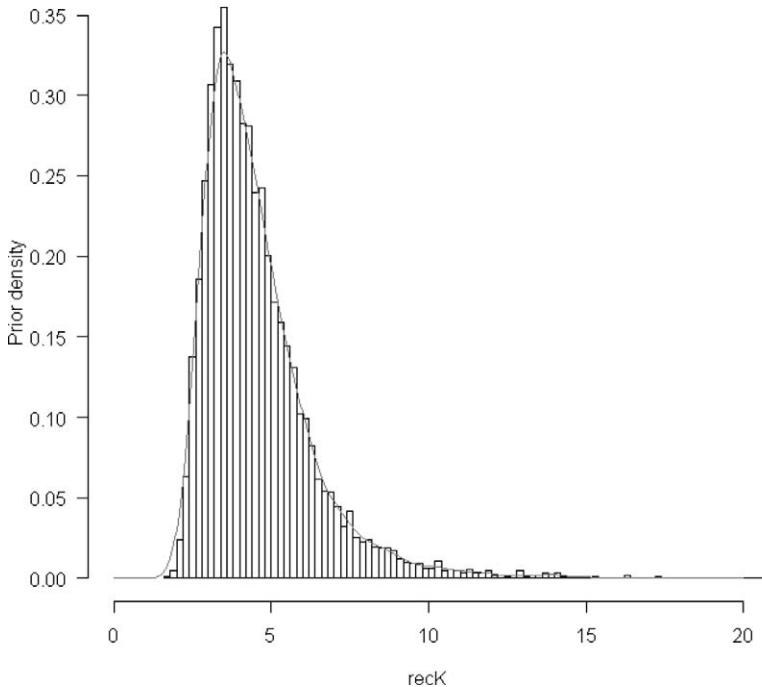


FIGURE 10.—Probability distribution of Goodyear compensation ratio ( $recK$ ) estimates using the methods of Martell et al. (2008).

survival, thereby leading to reduced or failed recruitment of a given cohort. The egg samplers we used were a passive design whose selectivity and efficiency were highly dependent on environmental variables. For example, higher flow velocities may cause eggs to drift farther and inhibit adhesion to egg samplers, and Sulak and Clugston (1998) suggested that deposited eggs may be lost to predation before hatching or observation. Because of these environmental effects and the broadcast style of egg laying used by Gulf sturgeon (Sulak and Clugston 1998), eggs found on samplers were not necessarily deposited in that exact location (Marchant and Shutters 1996). During our study we observed that a majority of eggs collected over the 3 years of sampling were found during or just after rising or stable water discharge. However, this pattern may be an artifact of gear selectivity during increasing and stable discharge or some other micro-habitat variables and not a relationship between discharge and Gulf sturgeon spawning, and perhaps

this should receive further examination. Because of uncertainty surrounding spawning site area and sampled area, egg samplers do not represent a quantitative sampling method, but a presence-absence type, meaning that varying numbers of sampled eggs do not imply varying levels of egg deposition.

#### *Modeling*

Our population modeling predicts periodic recruitment failures, such as those that could occur during low-river discharge events, will have an effect on Gulf sturgeon population recovery. If these events are infrequent, the effect will be minimal; however, frequent or sequential failure events will significantly hamper recovery or cause the population to go extinct. Even a recruitment pattern characterized by periodic strong year-classes will not be able to compensate for failures in intervening years. Recruitment failures at low population levels where the reproductive capacity

of the population is already impaired are especially damaging to population recovery.

Low rates of population recovery predicted by our model are not unexpected, given life history attributes of Gulf sturgeon (and other similar long-lived species) with low recruitment compensation. The relatively low values of  $recK$  estimated for Gulf sturgeon make this population susceptible to slow population recovery following large population declines and regular recruitment failures. Our estimates of  $recK$  for Gulf sturgeon ranged from 2.5 to 7.0 (Figure 10). In our model,  $recK$  values of 2.5 reduce viability, causing more frequent population crashes and slower recovery rates across recruitment scenarios. A  $recK$  value of 7 produces the opposite effect, with faster recovery rates and fewer population crashes. Values of  $recK$  10 or greater would be required for this population to be resistant to the recruitment failures simulated here; however,  $recK$  values this high are not supported by historic harvest patterns and current population abundance estimates. Our model simulated annual population sizes are similar to mark–recapture abundance estimates for the Apalachicola River Gulf sturgeon population from the 1980s and 1990s (Zehfuss et al. 1999) and from early 2000s (W.E.P., unpublished data).

Our baseline recruitment scenario 1 demonstrates that even under stable recruitment conditions, the Apalachicola Gulf sturgeon population is not likely to recover by the 2023 target date outlined in the recovery plan (USFWS and Gulf States Marine Fisheries Commission 1995). Scenarios 3 and 4 represent recruitment patterns that may occur as a function of water management decisions that could limit Gulf sturgeon access to some historic spawning sites. These scenarios demonstrate that recruitment failures over short time intervals could lead to declines in Gulf sturgeon populations, increasing concerns over population viability. Recruitment cycles described in scenarios 5 and 6 mimic proposed recruitment patterns for Gulf sturgeon based on observations of length–frequency distributions from long-term monitoring programs (Sulak and Randall 2002). Scenario 5 is especially optimistic, producing population recoveries in excess of the historic population after 100 years, but still does not predict full population recovery by the 2023 target date.

Our model predicts that recruitment failures have the greatest effect on population viability when total population size is low. This is due to reduced population fecundity in the absence of large older individuals (Walters et al. 2008). Our model also predicts that even under “normal” recruitment patterns for 50 years (i.e., scenario 1) regular year-class failure

following this 50-year period is predicted to cause Gulf sturgeon populations to decline because the rate of recruitment is less than the mortality rate. Natural mortality rate for Gulf sturgeon is low, and this species is relatively long lived for fish species at this latitude. Combined, these traits allow Gulf sturgeon to persist for long time periods (i.e., decades) without significant population growth (e.g., Kootenai River white sturgeon; Paragamian et al. 2005), yet the continued persistence of older individuals can give the false impression that the population is relatively stable. For example, our model scenario 2 predicts that the Apalachicola River Gulf sturgeon population could persist for approximately 25 years to 2010 before going extinct, even with zero recruitment.

### *Management Implications*

After more than 20 years of protection from direct harvest, the Apalachicola River Gulf sturgeon population viability is still uncertain. Preliminary results from ongoing population assessments suggest that the Apalachicola River Gulf sturgeon population has slowly increased since the closure of the fishery (Pine et al., unpublished data), but at present may still number fewer than 1,000 adult individuals, or less than 10% of the estimated prefishing abundance. At these low abundances population viability could be jeopardized by disturbance events, such as hurricanes or prolonged droughts, which could affect the long-term viability of the species. Even under optimal recruitment conditions, Gulf sturgeon recovery in the Apalachicola River is prolonged and probably in excess of 100 years for the population to reach historic prefishery levels (Flowers 2008) given Gulf sturgeon life history attributes do not favor rapid rebounds in population size (Zehfuss et al. 1999; Zehfuss 2000; Pine et al. 2001; Sulak and Randall 2002).

Linking strong year-classes of Gulf sturgeon to habitat conditions that produced them continues to be a key research question posed by water and fishery resource managers within the ACF basin. Regular, large year-classes are probably of increased importance to populations at low spawning stock sizes, because even in good years the production of recruits may be much less than populations whose age-structure is unaltered (Walters et al. 2008). Sturgeon populations are highly sensitive to changes in recruitment (Pine et al. 2001), but whether the frequency or magnitude of these year-classes are affected by anthropogenic disturbances such as historical overfishing or large-scale habitat alteration remains unclear (Sulak and Randall 2002). For instance, the greater effect of JWLD may not be that of blocking access to a quantity of spawning habitat, but instead blocking Gulf sturgeon

from a range of spawning habitats that could be available at varying flow conditions or altering downstream juvenile rearing habitats. Historically Gulf sturgeon recruitment may have been less dependent on a specific range of flows if a wider range of spawning habitat was available throughout the Apalachicola River system, a possibility managers should be aware of when evaluating flow regulations, especially if discharge during spawning is found to be an important determinant to year-class strength and ultimately recruitment to adulthood.

It is likely that large adult year-classes of Gulf sturgeon are not simply a product of the number of eggs produced in a given year. Because Gulf sturgeon do not fully recruit to standard gill-net sampling techniques until they are subadults, generally greater than 450 mm fork length and around ages 4–6, these fish have already survived a series of population bottlenecks and survival challenges as eggs, larvae, and juveniles. Thus, it is important to keep in mind that a strong year-class appearing in the length-frequency distribution is the product of, first, good spawning conditions, and then several “good” years for sturgeon survival over a variety of life stages. The ability of researchers to accurately identify which particular habitat conditions or potential bottlenecks appear most important to facilitate overall population growth can be lost among years of environmental variability between spawning and recruitment of a year-class because of variability among sampling techniques.

One certainty is that the threats to Gulf sturgeon from changing land- and water-use practices throughout their range are not declining and these populations warrant continued protection and examination at each life stage. Our results emphasize that decreasing recruitment, such as by adversely altering in-river flow regimes, would probably decrease sturgeon population viability in the Apalachicola River. We believe water resource managers in the ACF should exercise extreme caution when considering water management practices that further alter riverine flow regimes in the Apalachicola River, as our model scenarios demonstrate Gulf sturgeon populations are sensitive to recruitment effects caused by these alterations, resulting in delayed population recovery and possibly localized extinction.

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**Name:** Gravitt, Ford

**Affiliation:** City of Cumming

**Comment:** Given all that has been discussed herein, it should come as no surprise that the City of Cumming is vehemently opposed to the revisions to the Master Water Control Manual, especially as disclosed in subsection (b) on the Notice received on November 24, 2009. To propose to end all withdrawals by the City of Cumming in July, 2012, thus cutting off water to hundreds of thousands of people in Forsyth County alone, is callous, reckless, and is a threat to human life and safety. Moreover, given that the Corps and federal government permitted and allowed the City of Cumming's expansions and investments to occur, the Corps should be estopped from now taking that expansion and investment away by turning off the water. Finally, considering that the Corps's proposal would take a billion dollar asset and make it worthless, turning off the water, if carried out, would be the epitome of a taking without just and adequate compensation. To be blunt, when Lake Lanier was built the federal government compensated people so little - \$6.00 and \$7.00 an acre in some cases - that many people accused the government of stealing the land. Now, it appears that the government will do so again by rendering over fifty years of planning, investment, acquisition, and building worthless.

For the reasons set forth in this letter, it is with the utmost sincerity that the City of Cumming asks the U.S. Army Corps of Engineers to reconsider the proposed revisions to the Master Water Control Manual, and especially to reconsider subsection (b) of the proposed revisions. While Judge Paul Magnuson may have issued an order in the Tri-States Water Rights Litigation, that does not mean that the Corps of Engineers should rush out and amend its manual when two and a half years still remain for the parties to resolve their differences, or for Congress to resolve the situation for them.

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**Name:** Heard, Jonathon

**Affiliation:** City of Cumming Dept. of Utilities

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**Name:** Gravitt, Ford

**Affiliation:** City of Cumming

**Comment:** See attached letter

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**Name:** Edwards, Peter

**Affiliation:**

**Comment:** Its common knowledge that the scope of the work that the Corps will be doing in updating the Water Control Manuals will be narrowed such that it will not consider or address the fact that the original ACF System design called for dams and storage facilities on the Flint River, which do not exist. We know that the Flint River has the vast majority of the water basin area in the entire ACF System and that the basin area is roughly ten times the basin area that feeds Lake Lanier. We also know that for a lake the size of Lanier, its basin is significantly undersized. With the largest portion of the storage facilities in original System design missing from the System as it exists today, all stakeholders must face the reality that the System will never function in the manner for which it was designed. Furthermore to continue to assume that Lake Lanier, with its undersized basin, should be looked at as the water source of first resort during normal and or drought situations to fulfill all the functions that the ACF System was originally designed to fulfill, with all due respect, defies common sense and any level of disciplined engineering evaluation of the issues involved in the ACF System. If all of the stakeholders want a better balanced system that supplies maximized and more consistent

levels and flows, then the stakeholders must address the issue at the heart of the matter. If the majority of the originally designed storage facilities are missing from the ACF System, to limit the scope of the work to a rewrite of the Manuals controlling the operations of the remaining Lake Lanier facility is simply an engineering slight of hand and will not resolve the issues of supply and flows that are the heart of the issues in the ACF System. While the rewrite may provide some small benefit in terms of better management of Lanier's pool levels, and should certainly shed light on the all too mysterious process of managing the out flows from Lanier, it will not resolve the true issue, which is the missing of a massive part of storage facilities in the original System design. If the goal is too improve the System such that all parties have sufficient flows under normal rain fall conditions and at least maximized flows during drought situations, then the obvious solution is to address the issue of the missing storage facilities on the Flint River. Simply stated if you wish to have maximized flows for all stakeholders during drought conditions you must have more storage facilities in place in the system to supply the down river flows during periods of drought.

I strongly suggest that there be two scopes of work related to the rewriting of the Manuals. The currently scoped work as redefined by the Court's order and a second broader scope of work that would encompass a preliminary engineering study that would define the benefits of additional storage facilities located on the Flint River, as well as preliminary feasibility study to locate appropriate locations for such facilities on the Flint River.

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**Name:** Hartt, Laura

**Affiliation:** Upper Chattahoochee Riverkeeper

**Comment:** This submission includes our comment letter and 2 attachments (UCR comments on Glades Farm Reservoir & UCR comments on Bear Creek/South Fulton County Reservoir). Under a separate submission, I will include additional attachments that accompany our comment letter on the revised scoping for the ACF Water Control Manual update.

Thanks very much for considering our comments! Laura

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**Name:** Hartt, Laura

**Affiliation:** Upper Chattahoochee Riverkeeper

**Comment:** I have already submitted UCR's comment letter. For this submission, I am attaching 3 additional documents that go with that letter and its 2 accompanying attachments. These attachments are Water Contingency Planning Task Force PowerPoint (November 23, 2009); Water Contingency Planning Task Force Power Point, Appendix (Nov. 23, 2009); and UCR comment letter to the Water Contingency Planning Task Force. I will submit one more attachment here shortly. Thanks again for your help! Laura

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**Name:** Hartt, Laura

**Affiliation:** Upper Chattahoochee Riverkeeper

**Comment:** This is the final installment for UCR's comments on revised scoping for the ACF Water Control Manual. With this attachment, you should (hopefully) have received a letter plus 6 total attachments. Happy Holidays! Laura

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**Name:** Tonsmeire, Dan

**Affiliation:** Apalachicola Riverkeeper

**Comment:** Please accept attached comments on the revised scoping for the ACF Water Control Manual.

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**Name:** Tonsmeire, Dan

**Affiliation:** Apalachicola Riverkeeper

**Comment:** Please consider attached comments on revised scoping of the ACF Water Control Manual.

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**Name:** Houston, Billy

**Affiliation:** Tri Rivers Waterway Development Assn

**Comment:** The comments of Tri Rivers Waterway Development Association are hereby submitted. Hard copies will follow by overnight delivery to Tetra Tech, 107 Saint Francis Street, Suite 1403, Mobile, Alabama 36602-9986, per the Corps' instructions.

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**Name:** Allen, John

**Affiliation:** State of Georgia

**Comment:** Please see the attached comments filed on behalf of the State of Georgia.

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**Name:** Stevens, Pat

**Affiliation:** Metropolitan North Georgia Water Planning District

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**Comment:** The following comments from the Metropolitan North Georgia Water Planning District along with copies of the three District Plans were delivered yesterday, Dec 30, 2009, to Tetra Tech at the Mobile address in the Federal Register.

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**Name:** Atkins, Brian

**Affiliation:** Alabama Office of Water Resources

**Comment:** These comments are submitted by J. Brian Atkins, Director of the Alabama Office of Water Resources, on behalf of the State of Alabama. These comments are submitted through the eComments and Contact Information Form found on the Corps' webpage relating to the eMaster Water Control Manual Update Environmental Impact Statement for the Apalachicola-Chattahoochee-Flint River Basin ([http://www.sam.usace.army.mil/pa/acf-wcm/mail\\_list.htm](http://www.sam.usace.army.mil/pa/acf-wcm/mail_list.htm)). The State of Alabama notes that the form requires a commenting party to choose one, and only one, eResource Area to which submitted comments are related. This limitation is, or could be, unduly restrictive, as many comments submitted through this form will likely relate to more than one eResource Area. In fact, the comments submitted by the State of Alabama relate in some way to most, if not all, of the eResource Area categories listed on the Corps' website. The State of Alabama is submitting these comments under the eWater Management category, as it is the broadest and most inclusive category. However, the State of Alabama in no way intends to limit its comments to any single, specific eResource Area, and expressly states that its comments relate to each and every eResource Area relevant to the substance of the submitted comments. The State of Alabama also reserves the right to submit additional comments regarding the scoping process for the ACF Manual update.

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**Name:** Perkins, Tim

**Affiliation:** Forsyth County Water

**Comment:** Updating the water control manuals should include possible increases of municipal and industrial water use as the Judge's ruling is still under appeal. If you are not going to revise the manual due to the ruling that water supply was not an original use, then it would seem fitting that you would also not include other needs that were not covered in the original identified allocations. Things such as minimum flow for endangered species should not be considered. Hydropower would have been from the lake itself and not the needed flow for cooling water needed downstream. Releases for trout survival in an artificial trout stream would not have been allowed. Unless we are planning for the addition water needs above the original allocations the existing manual would continue to work. It seems to be a huge waste of tax dollars doing a study that will not determine if addition water can be provided.

Forsyth County citizens have rights to the water that flowed in the river before the lake was built. The existence of the lake has prohibited Forsyth County for obtaining easy access to the river for water supply.

If the judge's ruling is upheld and Congress does not reallocate storage in the lake, consideration should be given to Forsyth County to obtain our reasonable share of water from the lake equal to the supply that would have been available from the river. We would not be using any of the lakes storage and we would be forced to provide our own storage outside the boundaries of the lake if that happens.

Over 20 square miles of Forsyth County are flooded by the lake. Some of that land was taken from unwilling land owners, family farms were flooded, family graves flooded, and now almost all other users along the river have been able to obtain water needed for their use except for Forsyth County. We have been forced to acquire water from other sources at a greater cost to our citizens.

The lake itself is partially responsible for the increased water demand and growth of the area. The use of the parks, campgrounds and such brought the growth to this area. Water supply to support those needs should come from the lake.

While speaking at a conference I stated that it is un-American for a County on which the lake sits to be denied water supply from the lake. A person in the audience said, no, only in America could something like that happen.

It saddens me to believe that they are correct.

Tim Perkins

Forsyth County

Director of water and Sewer

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**Name:** Barnhorst, Vicki

**Affiliation:** Lake Lanier Association, Inc.

**Comment:** Please accept the attached comments from the Lake Lanier Association as part of the scoping process for revisions to the ACF Water Control Manual.

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**Name:** Emery, James

**Affiliation:** Troup County Board of Commissioners

**Comment:** Please see attached comments:

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