Bethea, Sally

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Cover Photo - Boy splashing in Centennial Olympic Park fountain. Atlanta, GA
©iStockphoto.com/Andre Nantel

Bethea, Sally

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Chattahoochee Riverkeeper, Inc.
916 Joseph E. Lowery Blvd. NW, Suite 3
Atlanta, GA 30318-5280

404-352-9828

www.chattahoochee.org

Biagi, John

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GEORGIA
DEPARTMENT OF NATURAL RESOURCES

WILDLIFE RESOURCES DIVISION

MARK WILLIAMS
COMMISSIONER

DAN FORSTER
DIRECTOR

January 11, 2013

Tetra Tech, Inc.
61 St. Joseph Street, Suite 550
Mobile, AL 36602-3521

SUBJECT: Water Control Manual Update
Apalachicola-Chattahoochee-Flint River Basin

Thank you for the opportunity to provide scoping comments regarding updating water control plans and manuals for the Apalachicola-Chattahoochee-Flint (ACF) River basin. The Georgia Wildlife Resources Division (WRD), Fisheries Management Section, offers the following comments for your consideration:

Lake Lanier and Chattahoochee River Tailwater

The maintenance of adequate water quality regimes within the reservoir and its tailwater is critical to the continued success of Lanier's striped bass fishery, trout production at Buford Hatchery, and the Chattahoochee River trout fishery. Georgia WRD considers optimal reservoir striped bass habitat to be temperatures <22 °C and dissolved oxygen (DO) levels greater than 5.0 mg/L. During summer lake stratification, striped bass are "pinched" into a narrow zone of suitable water lying between the warm surface waters and the hypoxic deeper stratum. To ensure the success of the Lanier striped bass fishery, it is important that this summer coolwater refuge be maintained in the reservoir.

The Buford Trout Hatchery produces more than 400,000 catchable trout annually and is dependent on Lake Lanier coldwater storage to maintain this production. The hatchery draws cold water from the Chattahoochee River downstream from Buford Dam, so maintenance of adequate river elevation at the hatchery's intake is of prime importance. Discharges of 450 cfs from Buford Dam have been found to be adequate for hatchery operations. However, the ability to operate the hatchery at releases less than 450 cfs have not been evaluated. In rare circumstances (twice in 13 years), Buford Hatchery has requested additional releases to mitigate warmwater runoff associated with tropical storm events. These short-term releases have saved nearly a million trout at the hatchery and had minimal effect on reservoir elevation. We would like the opportunity to formulate a protocol regarding these special releases.

Both the hatchery and the tailwater trout fishery, one of Georgia's premier fisheries, are dependent upon cold, well-oxygenated water for the survival of resident trout, so water temperature and dissolved oxygen levels are of great interest. Potential impacts to water temperatures in these designated trout waters should be considered when making water control

FISHERIES MANAGEMENT SECTION
2070 U.S. HIGHWAY 278 S.E. I SOCIAL CIRCLE, GEORGIA 30025-4711
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Biagi, John

Page 2 of 2

decisions. Depressed DO concentrations below Buford Dam from August through December adversely affect trout activity, angler success, and hatchery trout production in the upper tailwater. Enhancing DO at Buford Dam would benefit the hatchery operation and the sport fishery for both stocked and naturally reproducing trout in this upper river reach.

West Point Reservoir and tailwater

The tailwaters of West Point Dam provide recreational fishing opportunities that can be significant at certain times of the year. However, water quality in the tailwater, specifically DO, is poor during the summer months. U.S. Army Corps of Engineers (USACE) monitoring data indicates that DO levels become problematic in June, reach their lowest levels in August, and begin to increase in late October. GAWRD has investigated multiple fish kills downstream of West Point Dam with all events attributable to low DO. We suggest that the USACE consider operational and/or design criteria that would improve DO conditions in the tailwater.

Reservoir Fish Spawn

The USACE currently works to manage reservoir water levels for fish spawn four to six weeks within an eight-week window, during the spring. During this period, water levels are maintained, if possible, to prevent black bass nest exposure. We recommend that the fish spawn period be retained and look forward to continued coordination with USACE offices during the bass spawn.

Fish Passage

Since 2005, the USACE has operated the lock at Jim Woodruff Lock and Dam twice a day during the spring to pass migratory fish. This practice has resulted in a substantial increase in the population of juvenile and adult Alabama shad in the ACF. We encourage the USACE to continue to support and facilitate fish passage via conservation locking at this facility in the future.

We appreciate the opportunity to provide comments to this important process.

S*1 cerely,

[redacted]

hief of Fisheries

Bice, Bonita

Page 1 of 2

1/16/12

Tetra Tech
Attention: ACF-WCM
61 St. Joseph Street
Suite 550
Mobile, AL 36602-3521

Scoping Comments for ACF Water Control Manual

I submit the following comments in the recently reopened public scoping period:

1) **There is a definitive need for additional storage in the ACF Basin; and that storage is readily and safely available in West Point Lake. Recent studies submitted to the USACE demonstrate that West Point Lake (WPL) can be maintained at a minimum 632.5 MSL year round; and if managed differently, the risk of downstream flooding during major rain events can actually be reduced! The trifecta is there to be won: Increased storage + Better management = Reduced flooding!**

2) **WPL is specifically authorized by Congress for Recreation and Sport Fishing/Wildlife Development in addition to Flood Control, Navigation, and Hydropower. Flood Control can be improved as outlined in the Operations Study referred to in #1 above and which study has been previously submitted to the USACE. Hydropower and Navigation both benefit from the availability of increased storage. The USACE must deliver and honor the Recreation and Sport Fishing/Wildlife Development Authorizations stipulated under law by Congress.**

3) **In order to accomplish #1 and #2 above, the Rule Curve needs to be adjusted upward to a minimum 632.5 MSL and the Action Zones need to be modified upward as well to a minimum 630.0 at the bottom of Action Zone 4. The parameters of 632.5 and 630.0 MSL are significant because they represent the initial and second recreation impact levels respectively as defined by the USACE.**

Bice, Bonita

Page 2 of 2

4) **The economic damages to the WPL communities and the lack of economic development due to unnecessarily low and undependable lake levels need to be assessed and stopped. Small businesses have gone bankrupt and others have been stretched to keep their doors open. Major fishing tournaments have been cancelled damaging hotels, restaurants, marinas, and lake related businesses. Visitation is down and campgrounds have been closed. Land specifically set aside for a hotel, conference center, golf course, etc. has never been developed. We are blessed with a moderate climate and WPL should be managed as a 52 week a year lake with the corresponding benefit of a 52 week a year lake related economy! WPL needs a dependable and reliable lake level to provide for economic development and stop the economic harm.**

5) **Environmental harm to WPL needs to be documented. Due to wildly vacillating lake levels, the fish spawn has suffered significantly in 3 of the last 5 years and the quality of the fishery, specifically the bass and crappie, has declined. Thousands, if not hundreds of thousands of mussels have been killed threatening water quality; erosion has increased the cost of water treatment; and siltation continues to eliminate valuable storage.**

6) **USFWS needs to be challenged to provide their science and document the need for 5,000 cfs for endangered species. Why 5,000 cfs? Why not 2,000 cfs? How many of each endangered species are there? Do they exist in deeper water than previously thought? What is the Recovery Plan? Are they still endangered, threatened, or neither? Can they be relocated to other areas where water is more plentiful and the economic damages are less. Who is looking out for the welfare of the small businessman? Common sense would seem to dictate that the needs of man should be balanced with the needs of the critters. The RIOP needs close analysis as part of the EIS to see what changes can be made to avoid destroying the economic, environmental, and recreational value of WPL during all times other than "extreme" drought!**

I thank you for the opportunity to comment and ask that the above issues be submitted and studied during the EIS period.

Sincerely,

Bonita Bice

Billingsley, Randall

Page 1 of 2

11/20/12

Tetra Tech
Attention: ACF-WCM
61 St. Joseph Street
Suite 550
Mobile, AL 36602-3521

Scoping Comments for ACF Water Control Manual

I submit the following comments in the recently reopened public scoping period:

1) There is a definitive need for additional storage in the ACF Basin; and that storage is readily and safely available in West Point Lake. Recent studies submitted to the USACE demonstrate that West Point Lake (WPL) can be maintained at a minimum 632.5 MSL year round; and if managed differently, the risk of downstream flooding during major rain events can actually be reduced! The trifecta is there to be won: Increased storage + Better management = Reduced flooding!

2) WPL is specifically authorized by Congress for Recreation and Sport Fishing/Wildlife Development in addition to Flood Control, Navigation, and Hydropower. Flood Control can be improved as outlined in the Operations Study referred to in #1 above and which study has been previously submitted to the USACE. Hydropower and Navigation both benefit from the availability of increased storage. The USACE must deliver and honor the Recreation and Sport Fishing/Wildlife Development Authorizations stipulated under law by Congress.

3) In order to accomplish #1 and #2 above, the Rule Curve needs to be adjusted upward to a minimum 632.5 MSL and the Action Zones need to be modified upward as well to a minimum 630.0 at the bottom of Action Zone 4. The parameters of 632.5 and 630.0 MSL are significant because they represent the initial and second recreation impact levels respectively as defined by the USACE.

Billingsley, Randall

Page 2 of 2

2.

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I thank you for the opportunity to comment and ask that the above issues be submitted and studied during the EIS period.

Sincerely,

Randall S. Billingsley
1140 Co. Rd 451
LANETT, AL 36863
MAIL Address
P.O. Box 144
VALLEY, AL. 36854

Bishop, Richard

Page 1 of 2

11 January 2013

Col. Steven J. Roemhildt
Commander, Mobile District
U. S. Army Corps of Engineers
c/o Tetra Tech, Inc
Attn: ACF-WCM
61 St. Joseph Street
Suite 550
Mobile, AL 36602-3521

Subject: U. S. Army Corps of Engineers
Water Control Manual(s)
Apalachicola-Chattahoochee-Flint (ACF) River Basin

To Whom It May Concern:

Uptown Columbus, Inc. (UCI) is a non-profit organization providing for improvement in the central business district in Columbus, Georgia.

In recent years UCI has, via contracts with the cities of Columbus, GA and Phenix City, AL and the Corps of Engineers, become the primary developer and manager of the Chattahoochee River Aquatic Ecosystem Restoration and Whitewater Project. The project includes removal of two dams built in the 1800's; a habitat pool providing aquatic restoration and fish habitat; and various features for a whitewater recreation venue. It is projected that 188,000 paddle sport enthusiasts will visit the venue starting the summer of 2013.

UCI requests that the Corps of Engineers, in the development of the ACF Water Control Manual(s), take into consideration the economic impact and therefore the water needs of this river restoration and recreation project. The project has been designed for minimum flows of 800 cfs. However during the warmer months, and particularly on weekends, increased flows above the 800 cfs will be needed to provide for optimum recreational opportunities as follows:

Bishop, Richard

Page 2 of 2

May through September, weekends and holidays	3,000 to 5,000 cfs for a minimum of 4 hours, afternoons
May through September, weekdays	3,000 to 5,000 cfs for a minimum of 3 hours, afternoons
Early spring and late fall:	3,000 to 5,000 cfs for a minimum of 2 hours, afternoons
Special events (a few annually)	3,000 to 5,000 cfs for 4 or more hours, afternoons, over 4 to 5 consecutive days.

UCI is aware that Georgia Power Co. has the primary responsibility for providing flows in the whitewater section of the river. However, we also are aware that unless the water is provided from upstream Corps managed storage projects that it will not be possible for Georgia Power Co. to provide the needed flows.

UCI strongly requests that the Corps include consideration of the recreational needs in the Chattahoochee in the Columbus - Phenix City area in the planning of flow management in the Water Control Manual(s).

Sincerely yours,

Richard Bishop
President
Uptown Columbus, Inc.

Copy: Mr. Billy Turner
Mr. John Turner

Blackwell, Marilyn

Page 1 of 3

1/14/2013

COMMENTER: Marilyn Blackwell
4812 County Road 381
Wewahitchka, FL 32465

ORGANIZATION: Help Save the Apalachicola River Group

COMMENTS: Comments on the COE revised water management manual

We have serious concerns regarding the Revised Water Management Manuel and the possibility of further damage to the Apalachicola River System. Following is a brief history of the damage caused to the river, floodplain and bay by past COE navigational management practices.

For over sixty years the river system has been severely degraded as a result of maintenance practices to facilitate barge traffic on the river. One such harmful practices involved the disposal of dredged spoil, first out on the floodplain, then on the banks of the of the river and beginning in the 1970s within the river. There were approximately 140 dredge spoil sites on the 106-mile long river and 27 dike fields. At each of these sites there has been opposite bank erosion, which caused more sediment in the river and thousands of trees to fall in. The majority of the spoil has, in the past several years washed into the river channel and resulted in sand shoals. A map of the distributaries and tributaries when overlaid with a map of the spoil sites reveals these sites were located just upstream of the sloughs. Spoil has filled the sloughs and plugged openings from the river. These sloughs were the life of the floodplain, carrying water to off river ponds and lakes. This spoil, together with spoil deposited in the floodplain during high water has degraded this vast floodplain. The number of tupelo trees have declined by at least half as they have no tap root and grow in moist soil. Reduction of water allowed to flow down the river has added to the destruction.

The Apalachicola River, once a narrow, deep river is now a shallow wide river. In 1946 the river was stated to be 112 miles long and is now stated to be 106 miles long (if measured today is more than likely even shorter). The difference is due to bends being cut from the river, bend easings, and further straightened by strategically placed spoil sites. The last of the commercial shippers pulled off the river years ago due to the unreliability of water depth. The projected availability of a shipping channel, when the project was first proposed was never met. Given the size of the Apalachicola River it was impossible for it to accommodate tugboats pushing two very large barges with a eight to nine foot draft and not be severely damaged. The river has a history of tens of thousands of trees cut from its banks, sections cut out, dynamited, and dredged. After so many years and so much damage, it is still not a reliable mode for commercial navigation which if resumed can only be labeled an environmental crime. As for jobs, more jobs have already been lost due to the reduction in flow since DEP denied the COE a Water Quality Permit and the COE reduced the amount of water than what a few barges per year will create.

Concerning the Apalachicola River Floodplain, little effort has been made by the State of Florida or the COE to determine what exist in this vast area. If something is not acknowledged, then no protection is required seems to have always been the game plan. The problem is that the floodplain is one third of

Blackwell, Marilyn

Page 2 of 3

the system. There is the river, floodplain and bay. Each works in conjunction with the others. Nutrients are picked up in the floodplain and carried to the bay for nourishment for the oysters and other aquatic life. Unique plant and animal species exist in the floodplain. Before this area was allowed to dry up common species like the alligator and otter had off river dens where they lived in the dry seasons. Big alligator snapping turtles lived in water holes around and under tussets. During annual flood season, these dens, sloughs, and off river lakes and ponds were washed clean and new water and food sources replaced the old. Acres of wild flowers bloomed and sprouting seed from upland vegetation was drowned out. Billions of crawfish came from underground tunnels and was food for birds, raccoons, fish, otters, turtles and others including not just a few of us River Rats. Fish from the river came in to forage and spawn. The crawfish have not been able to come from underground for several years now and the question is, Are they still alive? Historically the floodplain was inundated four to five months in the late winter and early spring and when the crawfish did emerge, they were lean and required two to three weeks to fatten.

The swamps and floodplains was a wonderland filled with life and a fair amount of mystery. All going, going and almost gone in order that the shippers and cargo owners (who are not poverty stricken) might gain more wealth and the COE can continue an ill fated project when they have a backlog of needed projects.

How can we possibly trust a bureaucracy who would allow desperately needed water for one of earths treasures to be squandered upstream, seemingly with no qualms? It is not enough to say that the navigation project was authorized by the Federal Government. Because something can be done does not always mean that it should be done. While acknowledging that the COE is a powerful arm of the government and has many big and little guns behind it concerning this issue, it remains a moral issue. From the time when FDEP first required the COE to obtain Water Quality Permits, the requirements set forth by the Department in the issued permits was not followed through on. In the late 1970s and early 1980s FDEP acknowledged the damage resulting from the maintenance practices and demanded better. Point Polloway was to be opened, Corley Slough opened, and bend ways reconnected. At the mouth of Corley Slough is the famous two-story high Sand Mountain spoil site, Virginia Cut (which was at one time the main waterway from the Apalachicola River to the Chipola River) has a giant spoil site in its mouth. Bends were never reconnected and Point Polloway was never reconnected. Denial of the Water Quality Permit seems to be the only significant effort the State has made to protect this treasure; the Apalachicola River System.

What life remains in the system is due to the meager amount of water allowed to flow. Are we who love and respect this gift being faced with a trade off? Is the river being held hostage? Will the river system be allowed enough water only when a few barges a year use the river and then only if the brutal maintenance practices are allowed to resume?

There have been a fair number of Restoration Projects by the COE, FFWC, AND NWFWMD that were attempted to rectify damage that had been done on the river and all have been failures with many millions of taxpayer dollars spent. Only the system can heal itself and only then if it is given time. We ask that while developing the revised Water Management Plan, that it be done with respect for the Apalachicola River System.

Help Save the Apalachicola River Group

Blackwell, Marilyn

Page 3 of 3

Marilyn Blackwell
4812 County Road 381
Wewahitchka, FL 32465
850-639-2177

Blair, John

Page 1 of 1

1/14/2013

COMMENTER: John Blair
596 Woodland Circle
Dawsonville, GA 30534

ORGANIZATION:

COMMENTS: The 5,000 cfs minimum flow required at the state line is not representative of the true lowest historical flows in the ACF and is not sustainable. Lanier was never designed to support ALL downstream demands and can't be expected to because the dams originally proposed on the Flint River were never built. The Corps' current operating rules require more water to be released from Lanier than is necessary and do not allow as much to be stored as is possible. These draw the lake down more than necessary and make it less likely to refill to full pool under contemporary climatic conditions. The Endangered Species Act does not require the Corps to augment Apalachicola River flows above run-of-river levels and the practice should not be required because it depletes Lanier unnecessarily. Regular navigation is no longer feasible on the ACF and the Corps should not try to support it in view of the other demands on Lanier as a resource of last resort.

Blalock, Tanya

Page 1 of 2

Environmental Affairs
Bin 10221
241 Ralph McGill Boulevard NE
Atlanta, Georgia 30308-3374
Tel 404.506.2102

GEORGIA POWER
A SOUTHERN COMPANY

January 14, 2013
Electronic Filing (ACF-WCM@usace.army.mil)

U.S. Army Corps of Engineers
c/o Tetra Tech, Inc.
61 St. Joseph Street, Suite 550
Mobile, AL 36602-3521

UPDATE TO THE U.S. ARMY CORPS OF ENGINEERS WATER CONTROL MANUAL FOR THE APALACHICOLA-CHATTAHOOCHEE-FLINT RIVER BASIN
Scoping Comments Submitted by Georgia Power Company

Dear Sir or Madame:

Georgia Power appreciates the opportunity to submit these comments and provide assistance in developing the scope of issues to be assessed in the update of the U.S. Army Corps of Engineers (Corps) Water Control Manual (WCM) for the Apalachicola-Chattahoochee-Flint (ACF) river basin. The Corps reopened public scoping for the ACF WCM update on October 12, 2012. Georgia Power previously provided scoping comments to the Corps on November 20, 2008, and is pleased to participate in this most recent scoping effort for the ACF WCM update.

Georgia Power is the largest subsidiary of Southern Company, one of the nation's largest generators of electricity. The company is an investor-owned, tax-paying utility with rates below the national average. Georgia Power serves 2.4 million customers in all but four of Georgia's 159 counties, and as such, water resources are vital to our core business activities.

Georgia Power operates a number of fossil fuel fired steam electric and hydroelectric generating facilities across the state, and within the ACF river basin, for a total generation capacity of approximately 16,588 megawatts of electricity. Facilities within the ACF river basin are critical components of this generating capacity which provides electricity throughout this region of the country. Accordingly, updating the WCM and its various water control plans should include assessment of the water use needs necessary to maintain generation at these Georgia Power facilities as part of the baseline conditions in the ACF basin.

Additionally, the state of Georgia is fortunate to be in a position of growth, and population increases are projected for Georgia in the coming years. As the State's population grows, so will its need for electricity to support expansion of municipal, industrial and other sectors. Georgia Power must plan for future generation of electricity to meet this growing demand throughout the

Blalock, Tanya

Page 2 of 2

State and region. In updating the ACF WCM, we respectfully request that the Corps contemplate these future needs.

In light of these considerations Georgia Power supports the development of an environmental impact statement (EIS) that will consider Corps operations for all authorized purposes, including an expanded range of water supply alternatives associated with the Buford Dam project, and account for projected population growth in Georgia. Development of a robust EIS and updated WCM will help ensure that the region's water resources are managed in a sustainable manner to support the region's economy, to protect public health and natural systems, and to enhance the quality of life for all citizens.

Georgia Power appreciates the opportunity to submit these scoping comments and looks forward to continued participation in the Corps' process for updating the ACF WCM in the future. If you have questions or comments please feel free to contact me directly at (404) 506-7026 or tdblaloc@southernco.com, or George Martin of my staff at (404) 506-1357 or gamartin@southernco.com.

Sincerely,

Tanya D. Blalock

Tanya D. Blalock
Environmental Affairs General Manager

GAM/

Boarland, Duirwarren

1/14/2013

COMMENTER: Duirwarren Boarland
Edgefair Wood
5 Dante's Court
Quincy, FL 32351

ORGANIZATION: Estimated Prophets LC

COMMENTS: It is my informed opinion which necessitates me to advocate and demand Puclic representation by the USACOE for this 2013 scope of the Water Control Management Plan EIS to include without omission:

1. An scientifically formalize and Public assessment and consideration of the freshwater needs that will sustain the health of the Apalachicola River and Bay.

2 Assure an essentially fundemental Increase of water release from Woodruff Dam at appropriate timing and duration to sustain ecostsyem health and cultural viability of Apalachicola River and Bay and

3. An ACF basin-wide sustainable water management plan that protects the Apalachicola River and Bay and equitably shares the water of this basin.

Bolick, Josh

1/12/2013

COMMENTER: Josh Bolick
4032 Elder Lane
Tallahassee, FL 32303

ORGANIZATION:

COMMENTS: This fall I paddled the length of the Apalachicola River as part of a fundraising team for the Riverkeeper. Various experts on environment, ecology, and geology met us at points on the river to discuss the importance of the river's health and the need for more flow. At the end of the trip, we all understood that there are many reasons for the decline of the river and bay, and that there also many stakeholders, both above and below Woodruff Dam. But being at the end of the line, the Apalachicola River, the (often threatened, endangered, or endemic) flora/fauna it supports, and the people who depend on a healthy river and bay have suffered the most. We have the opportunity here to do something to stop all that, so that our children and grandchildren can know the beauty of wild places and healthy working coastal communities, and great oysters. Or we can look back on it all ruined and wish we had done differently. As such, I advocate the following: 1. An assessment and consideration of the freshwater needs that will sustain the health of the Apalachicola River and Bay. 2 Increased water release from Woodruff Dam at appropriate timing and duration to sustain Apalachicola River and Bay 3. An ACF basin wide sustainable water management plan that protects the Apalachicola River and Bay and equitably shares the water of this basin.

Bonham, C.

Page 1 of 8

Southeastern Federal Power Customers, Inc.

January 14, 2013

Tetra Tech, Inc.
61 St. Joseph Street
Suite 550
Mobile, Alabama 36602-3521

Re: Revision of Scope of Draft Environmental Impact Statement

To Whom It May Concern:

The Southeastern Federal Power Customers, Inc., ("SeFPC" or "Hydropower Customers") hereby submit the following comments in response to the Notice of Intent to Revise Scope of Draft Environmental Impact Statement for Updating the Water Control Manual for the Apalachicola-Chattahoochee-Flint ("ACF") River Basin. The SeFPC has submitted prior comments on the scope of the draft Environmental Impact Statement ("EIS") and supports a comprehensive study to precede the development of a final water control manual for the ACF River Basin.

At the outset, the Hydropower Customers believe that the scope of the EIS should be revised to recognize certain legal parameters that will govern the operation of the U.S. Army Corps of Engineers ("Corps") projects in the ACF River Basin. These fundamental legal understandings are set forth in Section I below. Second, the SeFPC encourages the Corps to review analytical and modeling assumptions that have been made by the Corps in the past including modeling in support of the legal memorandum that the Corps prepared in response to the opinion issued by the U.S. Court of Appeals for the Eleventh Circuit ("11th Circuit") in June, 2011. In our review of the materials prepared in support of the memorandum submitted to the 11th Circuit, we have noted several modeling inconsistencies and oversights that should be addressed before finalizing the EIS.

With the changes suggested by the SeFPC below, the scope of the EIS will account for important legal foundations for the legal operation of the Corps projects on the ACF while also addressing technical flaws in some of the modeling analysis performed by the Corps last year. We offer our comments with the intent of providing constructive guidance that will help the Corps ensure that the key constituency of hydropower is fully accounted for in the development of the scope of the EIS.

1

Bonham, C.

Page 2 of 8

Section I – Legal Foundations

From the Hydropower Customers' perspective, the EIS must start with the foundation of the legal authorities that govern the operations of the Corps' projects in the ACF. Each of the Corps projects on the ACF has authorized project purposes that must be honored as the Corps develops the water control plan. Accordingly, the EIS must start with the established authorized project purposes of the Buford, George, West Point, Andrews and Woodruff projects at the outset.

The identification of the authorized project purposes should be further limited and delineated to specific authorized project purposes. This process should separate and demarcate the obligations of the Corps that are specific and attendant to a specific project rather than laws of general application. By distilling the Corps' distinct obligations and specifically authorized project purposes, the EIS will begin with a foundation that is set in law and reflects the Congressional intent for each project on the ACF.[1] In fact, it is the individual project authorizations that must be reconciled to develop an overall management plan for the ACF River Basin.

The individual project authorizations should guide the development of the EIS in several ways. First, the legal authorities for project operations will set the boundaries of the Corps' potential actions. Second, the authorities or authorized project operations will inform the development of a baseline that should be used in the Corps' study of future operations. As discussed below, the 11th Circuit's opinion and underlying legislative history supporting the Rivers and Harbors Act both shape the scope of the EIS.

A. Limitations in Operations Expressed in Congressional Intent

A single new variable for the Corps and the water control plan emerges from the 11th Circuit's opinion. In reviewing the Newman report that provides the foundation for the new-found interpretation of the Corps legal authorities for operations of the Buford Project, the 11th Circuit found that Congress intended that peak hydropower production would yield to increased water supply.[2] With this new understanding of the Newman report, and Congressional intent at the time of the passage of the Rivers and Harbors Act, the Corps has a single "new" authorized project purpose at Lake Lanier. It is this legal authority that must now be accounted for in the EIS and water control plan.

The SeFPC encourages the Corps, however, to consider the extent of this legal authority and the context in which it was considered by the 11th Circuit. Indeed, there are

[1] As represented by the Corps in the litigation associated with the 11th Circuit opinion, the Corps has no direct responsibility to operate the projects to accommodate general laws of application such as water quality and recreation. The Endangered Species Act ("ESA") provides the notable exception to this legal construct, yet as discussed below, the application of the ESA has limitations as well.

[2] "At times, water supply was even to be accommodated at the expense of optimal hydropower generation." *In Re MDL-1824 Tri-State Water Rights Litigation* 644 F.3d 1160, 1181 (11th Cir. 2011)(*In Re MDL-1824)*

2

Bonham, C.

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two notable components to the Corps' authority to "accommodate both current and increased levels of water supply from Lake Lanier and downstream at Atlanta." First, there is the observation that optimal or peak power production would decrease to accommodate water supply downstream. Second, the Newman report envisioned a slight decrease in system power within the context of the overall authorization of projects to be prosecuted under the Rivers and Harbors Act. These distinctions remain vitally important in considering the scope of operations that the Corps may pursue in the context of the revised water control plans.

Decrease in Peak Power

The 11th Circuit recognized in several sections in its opinion that an increase in water supply operations would come at the expense of peak or maximum hydropower operations.[3] For purposes of developing the scope of the EIS, this understanding remains vital for purposes of measuring the lost hydropower and the attendant environmental consequences. Indeed, as Congress specified, as now interpreted by the 11th Circuit, peak hydropower production would yield to increased releases for downstream water supply for Atlanta. For purposes of developing the scope of the EIS, the loss of hydropower should focus on the identification of the lost peak hydropower rather than a generalized decrease in energy production.

System Power Value

The Newman report contemplated lost maximum hydropower production once water supply demands increased in the ACF River Basin, a point on which the 11th Circuit rested its fundamental findings. In particular, paragraph 80 of the Newman report noted that the benefits associated from an increase in water supply operations would be outweighed by a "slight decrease in system power value." The 11th Circuit attached great value to the phrase "slight decrease in system power value" in determining that water supply was an authorized project purpose. However, for purposes of developing the scope of the EIS for the water control plans, this operative phrase should be parsed for additional clarity and guidance.

In the context of the EIS, the Corps needs to honor the limitation suggested by a "slight decrease" that the Newman report envisioned when hydropower would diminish to allow for increased water supply. Indeed, the term "slight decrease" has legal significance in determining how far the Corps should diminish maximum power production to accommodate increased water supply. Any modeling of a drop in hydropower production should be measured against the benchmark established by the use of the term "slight decrease."

The term "system power value" also requires measured consideration in determining the scope of the EIS. In fact, the term itself requires further distillation to provide meaningful context. The word "system" must be evaluated in the context of the

[3] *In Re MDL-1824* 644 F.3d at 1187, 1188, 1200, n. 34.

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Rivers and Harbors Act and the projects that it authorized. Indeed, as the 11th Circuit has painstakingly determined the Congressional intent at the time of the passage of the Rivers and Harbors Act to determine that water supply was an authorized project purpose, the EIS must operate from the interpretation of "system" in the context it was written and at the time it was written.

If the appropriate interpretation of "system" is employed, the universe of projects in the system captures the West Point, George and Woodruff projects. This group of projects merits further culling because the power provided by the Jim Woodruff Project is marketed by the Southeastern Power Administration ("SEPA") under a separate delivery and rate schedule. Thus, in considering what projects should be included in the "system", it becomes clear that it is limited to the three projects envisioned in the Newman report that would provide power within the region. These should be the projects that should be considered in determining the system and the associated decrease in peak power production.

The 11th Circuit's emphasis on maximum or peak power production also provides context for the term "power value." Because the Newman report anticipated that there would be a loss of peak hydropower production to accommodate downstream water supply, "power value" must be viewed as a loss of both capacity and energy. This is a point that bears emphasis for the Corps because the term "capacity", i.e., ability to make energy, is occasionally overlooked in the Corps analysis. In fact, the term "power" is defined within the electric industry to include capacity. The Corps could commit a grievous error in developing the scope for the EIS if the evaluation of hydropower impacts is confined to decreases of energy only.[4] A proper evaluation should focus on capacity losses as suggested by the Newman report's use of the term "power."

The guidance provided by the Newman report is essential in determining the scope of EIS because the ability to provide water supply is limited as envisioned by Congress. As noted above, the restrictive factors include the expectation that the loss of hydropower would be "slight" and the type of hydropower that would be sacrificed would be peak hydropower production. To expand the scope of the EIS beyond these criteria delves the Corps into an inquiry that exceeds the legal authority for operations at the Buford Project.

B. Baseline Calculations

The establishment of a baseline remains important for the development of an EIS in several ways. First, it should provide the appropriate frame of reference for the study of proposed actions. As noted below, the establishment of a baseline will require research

[4] While the inclusion of non-Corps projects on the ACF conflicts with the appropriate interpretation of "system" in the phrase "system power value," the non-Corps projects licensed by the Federal Energy Regulatory Commission in the ACF operate as "run of the river" hydropower projects with little to no dedicated storage to support capacity. Therefore, it is additionally inconsistent to include "run of the river" projects that feature little storage to support capacity in the ACF river basin in the calculation of the "system power value."

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and historical analysis. Second, the baseline must account for key operational assumptions, particularly as the Corps identifies how to comply with the ESA.

Setting a Historically Accurate Baseline

The EIS must establish a baseline from which to measure proposed operations in the new water control plan. In theory, there is the assumption that the revised water control plans will now include the newly determined authorized project purpose of water supply at Lake Lanier. However, as the Federal Register Notice indicates, the 11th Circuit found that the Corps has the "legal authority to accommodate both ***current*** and increased levels of water supply withdrawals from Lake Lanier and downstream at Atlanta."[5] Indeed, there is no real question whether the Corps has been supporting water supply operations at Lake Lanier to the detriment of hydropower operations before the ruling by the 11th Circuit.

However, for purposes of the EIS, the Corps must study a change in operations and the impacts on the environment. While an appropriate study should focus on increasing water supply operations, limited by Congressional intent as discussed above, the draft EIS must also identify and set a baseline for the change in operations when water supply became a project purpose at Lake Lanier.

Arguably, the 11th Circuit ruled that water supply was always a project purpose at Lake Lanier. However, the question answered by the 11th Circuit was whether peak hydropower production should be adjusted to accommodate water supply operations. The 11th Circuit answered this question by noting Congressional intent as reflected in the Newman report that water supply operations would increase in the future at the expense of a "slight decrease in system power value" when there was a documented need by regional water supply utilities.

The need for increased water supply is clearly documented by reviewing the point in time when the Corps began to alter peak hydropower operations at Lake Lanier to accommodate water supply needs. To determine this point in time, the draft EIS can utilize standard Corps benchmarks such as the regulations that trigger Congressional authorizations when a request is made for reallocated storage at a Corps project.[6] Alternatively, the Corps could request assistance from the Southeastern Power Administration ("SEPA") to identify the point in time in the past when peak hydropower began to diminish to accommodate water supply operations.

[5] Federal Register, Volume 77, No. 198, p. 62224(emphasis added).
[6] Engineer Regulation 1105-2-100 at 3-33. "Reallocation or addition of storage that would seriously affect other authorized purposes or that would involve major structural or operational changes requires Congressional approval. Provided these criteria are not violated, 15 percent of the total storage capacity allocated to all authorized project purposes or 50,000 acre feet, whichever is less, may be allocated from storage authorized for other purposes. Or, this amount may be added to the project to serve as storage for municipal and industrial water supply at the discretion of the Commander, USACE." See also *In Re MDL-1824* 644 F.3d 1172-1173, n. 9.

Segregating Storage

The development of an accurate baseline that reflects actual operations remains important in light of the instruction from the 11th Circuit. In considering the use of storage from the Buford Project to support downstream water supply operations, the 11th Circuit explained that "we conclude that water supply was an authorized purpose of the RHA and that the RHA authorized the Corps to allocate storage in Lake Lanier for water supply."[7]

The baseline and EIS should identify the storage needed for downstream Atlanta for a few reasons. First, the 11th Circuit has delineated that storage could be used for downstream Atlanta. Second, the demarcation of storage for downstream uses captures in a quantified measurement the support for water supply that Congress envisioned in the passage of the Rivers and Harbors Act. In other words, setting aside storage fulfills Congressional intent for providing water supply from Lake Lanier.

The act of identifying the storage needed for downstream water supply purposes will assist the Corps in delineating operations that are subject to modification pursuant to the ESA. While the Corps must adjust discretionary operations to comply with ESA requirements, statutory obligations or Congressionally required activities are otherwise exempt.[8] In the context of the 11th Circuit's decision, it has now become clear that water supply releases for downstream Atlanta are no longer the subject to the Corps discretion, but should be considered a statutory obligation, and thus exempt to adjustment to address ESA compliance. Therefore, for purposes of developing the scope of the EIS, the Corps should first delineate the storage used by and needed for downstream Atlanta as the use of this storage is now directly related to a statutory directive from Congress and not subject to modification at the Corps' discretion. This action will inform the Corps activities and ability to respond to ESA requirements within the ACF River Basin.[9]

In noting the particular suggestions for the baseline that should be used for the EIS, the Hydropower Customers also recognize that there may be some temptation to use the 1959 water control plan as the baseline for the EIS. The discussion above highlights a few of the reasons why a revised baseline should be used and reflects in part why the 1959 water control plan would not provide an accurate foundation against which to measure

[7] *In Re MDL* -1824 644 F.3d at 1192. To be clear, however, the Court's interpretation of the use of storage under the RHA only extended to downstream uses. See *id* 644 F.3d 1200, n. 35.
[8] See *Nat'l Ass'n of Home Builders v. Defenders of Wildlife*, 551 U.S. 644, 666-67 (2007). (Affirming that ESA provisions are limited to "actions in which there is discretionary Federal involvement or control.")
[9] Undoubtedly, the EIS process will be informed by the Revised Interim Operating Plan ("RIOP"). There has been some form of Interim Operating Plan ("IOP") in effect since the 2006-2008 timeframe. There has been sufficient time operating under the IOP and/or RIOP to determine if modifications pursuant to these plans have produced any beneficial changes to the populations of the protected species. The Hydropower Customers anticipate that the EIS will rely upon scientifically verifiable updates on the effects of the IOP and RIOP as part of the baseline development.

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future operations. Indeed, as the Newman report anticipated a shift in project operations which has already occurred, using a baseline founded in 1959 would simply ignore the changes that the Corps has already implemented at the Buford Project.

Section II – Technical Modeling Needs

As the Federal Register notice observes, the process to revise the water control plans is building upon prior work that has been pursued to date. Certain technical assumptions have been utilized in the past, including the modeling to support the memorandum drafted by the Corps to respond to the 11th Circuit. Several analytical approaches have included erroneous assumptions that the Hydropower Customers believe should be corrected as the scope of the EIS is developed and EIS moves forward. Several of these assumptions relate to the calculation of the hydropower benefits that the Corps projects provide in the ACF River basin and are set forth in the bulleted points below.

- SEPA claims benefits from the Federal hydropower projects including reserve margins, spinning reserves, transmission support through VAR production, and potential for "Black Start" capability. Although ancillary to peak power, the Corps EIS should include any impact on economic value of these benefits as well in a hydropower impact assessment.

- The Corps' methodology for calculating replacement energy sources doesn't always account for replacing capacity during peak hours. The EIS should capture the value of replacement capacity during peak hours to reflect the true cost of diminished hydropower production.

- The Corps financial analysis of hydropower impacts uses a Federal Discount Rate to capture cost of money. Yet, the analysis does not use an inflation factor to capture the impacts of monetary policy over time. An inflation factor should be utilized to reflect the true cost of reallocating storage.

- The HEC ResSIM modeling that is currently used to analyze and support the memorandum submitted to the 11th Circuit and Corps positions on authority to operate the ACF system relies on inaccurate storage/elevation data for the Morgan Falls Reservoir. The storage at Morgan Falls Reservoir should be revised for the EIS.

- Any and all known "off-system" reservoirs used for water supply or other purpose that are in the Corps of Engineers permitting process must be incorporated into the modeling. This includes the Glades Reservoir.

- There are ongoing questions regarding the unimpaired flow set within agencies and stakeholders. For example, the unimpaired flow continues to include the effects of Combined Sewer Operation in the Metro Atlanta Reach. This "double counts" for the amount of returned water. During rainfall events that occur during droughts, returns can be 100+% of withdrawals which is inaccurate. Throughout a period of

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record the stormwater influence accounts for 10-30% additional water in the return reach. This assumption must be resolved before developing a final scope for the EIS.

- The Corps needs to establish a legally founded position on the lower limits of Lake Lanier to recognize drought conditions. The Corps has limited the draw down to "no lower than previous droughts." A revised calculation should avoid arbitrary lake levels and should be set in light of revised operating parameters which should reflect a legal basis in operation.

- The Corps has identified that "operational concerns" such as "head limits" restrict the operation of the project of Jim Woodruff Project and the Walter F. George Project. The Corps must include as a scenario in their analysis of operational improvements how the resolution to the head limits would improve operational flexibility.

- The Corps calculations of hydropower impacts should refrain from limiting the analysis to lost energy on a project by project basis. SEPA markets the power (capacity and energy) from these projects on a system wide basis. Impacts to hydropower benefits must include analysis from SEPA on replacement *power* costs to determine the "slight decrease in system power value."

Conclusion

The Hydropower Customers appreciate the opportunity to comment on the scope of the revised EIS for the water control plans. For many years, hydropower output at Lake Lanier has decreased to accommodate water supply operations. With the 11th Circuit's opinion, the uncertainty associated with these operations should dissipate and further clarity should emerge on how the Corps will operate the projects on the ACF for authorized project purposes. The approach that the Corps will take with the scoping of the EIS and its implementation will determine the success of the transition from the period of ambiguity that clouded the Corps operations in the ACF for the past two decades.

As long time stakeholders of the Corps hydropower projects in the Southeast, the SeFPC remains committed to working with the Corps and is available to contribute to the dialogue on moving forward.

Sincerely,

/S/

C.H. Bonham
Chair, Water Storage Reallocation Committee
Southeastern Federal Power Customers, Inc.

CC: Ken Legg, SEPA

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Bowen-Long, Anne

From: DIV.ACF.EIS
Subject: FW: public comment for the Corps of Engineers Water Control Manual revision for the ACF System

From: abowenlong@ups.com [mailto:abowenlong@ups.com]
Sent: Monday, January 14, 2013 1:04 PM
To: ACF-WCM
Subject: public comment for the Corps of Engineers Water Control Manual revision for the ACF System

To whom it may concern,
I live on the lake and would like the following comments known. Many of our docks are dry due to decisions to release more water than necessary. The 5,000 cfs minimum flow required at the state line is not representative of the true lowest historical flows in the ACF and is not sustainable.

- Lanier was never designed to support ALL downstream demands and can't be expected to because the dams originally proposed on the Flint River were never built.

- The Corps' current operating rules require more water to be released from Lanier than is necessary and do not allow as much to be stored as is possible. These draw the lake down more than necessary and make it less likely to refill to full pool under contemporary climatic conditions.

- The Endangered Species Act does not require the Corps to augment Apalachicola River flows above run-of-river levels and the practice should not be required because it depletes Lanier unnecessarily.

- Regular navigation is no longer feasible on the ACF and the Corps should not try to support it in view of the other demands on Lanier as a resource of last resort.

Anne Bowen-Long
3775 Duck Cove Way
Cumming GA 30041
Young Deer

Bradfield, Jamie

From: DIV.ACF.EIS
Subject: FW: West Point Lake WCM Scoping

From: Jamie Bradfield [mailto:jfbradfield@charter.net]
Sent: Wednesday, December 26, 2012 8:19 PM
To: ACF-WCM
Subject: West Point Lake WCM Scoping

Gentlemen,

My name is Jamie Bradfield and I live on West Point Lake. To say I am disappointed in the management of this lake during this drought period would be an understatement. I understand the need to supply water downstream and I believe it can be done in a reasonable fashion for all concerned. However, due to the Corps strict adherence to outdated document and lack of common sense application, West Point Lake has been depleted in a reckless manner. It is obvious to any thinking person WPL is the sacrificial lamb to appease political pressure by groups with stronger lobbying power in district and federal agencies. There is no reasonable explanation why a lake located in the most severe drought region (Troup Co.) sends all its water to a region of no drought conditions (Apalachicola Bay). Even when we get significant rainfall that could recharge this lake it is all sent down stream and our lake level goes unchanged. It would not take many significant rainfall events to recharge this lake as it has such a large watershed. Why is it the Corp will not use these opportunities to, at least, gradually recharge the lake? It is because the current manuals do not allow for common sense. The new manual should allow for higher winter levels on this lake and should not include reducing the summer pool time frame. If the manual does not include any flexibility we will be stuck in this same rut we exist in today. What if the current drought continues into next year and the lake is not recharged? What will the corps plan be then- completely drain the lake? If we bust every dam from the top of the Chattahoochee to the Gulf of Mexico, how much water will Florida get? It will get what nature sends it. Stop sending more water to Florida than we get here in Ga.

Respectfully,

Jamie Bradfield
103 Lakeshore Drive
LaGrange, Ga. 30240

Britt, William

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11/12/12

Tetra Tech
Attention: ACF-WCM
61 St. Joseph Street
Suite 550
Mobile, AL 36602-3521

Scoping Comments for ACF Water Control Manual

I submit the following comments in the recently reopened public scoping period:

1) There is a definitive need for additional storage in the ACF Basin; and that storage is readily and safely available in West Point Lake. Recent studies submitted to the USACE demonstrate that West Point Lake (WPL) can be maintained at a minimum 632.5 MSL year round; and if managed differently, the risk of downstream flooding during major rain events can actually be reduced! The trifecta is there to be won: Increased storage + Better management = Reduced flooding!

2) WPL is specifically authorized by Congress for Recreation and Sport Fishing/Wildlife Development in addition to Flood Control, Navigation, and Hydropower. Flood Control can be improved as outlined in the Operations Study referred to in #1 above and which study has been previously submitted to the USACE. Hydropower and Navigation both benefit from the availability of increased storage. The USACE must deliver and honor the Recreation and Sport Fishing/Wildlife Development Authorizations stipulated under law by Congress.

3) In order to accomplish #1 and #2 above, the Rule Curve needs to be adjusted upward to a minimum 632.5 MSL and the Action Zones need to be modified upward as well to a minimum 630.0 at the bottom of Action Zone 4. The parameters of 632.5 and 630.0 MSL are significant because they represent the initial and second recreation impact levels respectively as defined by the USACE.

Britt, William

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4) The economic damages to the WPL communities and the lack of economic development due to unnecessarily low and undependable lake levels need to be assessed and stopped. Small businesses have gone bankrupt and others have been stretched to keep their doors open. Major fishing tournaments have been cancelled damaging hotels, restaurants, marinas, and lake related businesses. Visitation is down and campgrounds have been closed. Land specifically set aside for a hotel, conference center, golf course, etc. has never been developed. We are blessed with a moderate climate and WPL should be managed as a 52 week a year lake with the corresponding benefit of a 52 week a year lake related economy! WPL needs a dependable and reliable lake level to provide for economic development and stop the economic harm.

5) Environmental harm to WPL needs to be documented. Due to wildly vacillating lake levels, the fish spawn has suffered significantly in 3 of the last 5 years and the quality of the fishery, specifically the bass and crappie, has declined. Thousands, if not hundreds of thousands of mussels have been killed threatening water quality; erosion has increased the cost of water treatment; and siltation continues to eliminate valuable storage.

6) USFWS needs to be challenged to provide their science and document the need for 5,000 cfs for endangered species. Why 5,000 cfs? Why not 2,000 cfs? How many of each endangered species are there? Do they exist in deeper water than previously thought? What is the Recovery Plan? Are they still endangered, threatened, or neither? Can they be relocated to other areas where water is more plentiful and the economic damages are less. Who is looking out for the welfare of the small businessman? Common sense would seem to dictate that the needs of man should be balanced with the needs of the critters. The RIOP needs close analysis as part of the EIS to see what changes can be made to avoid destroying the economic, environmental, and recreational value of WPL during all times other than "extreme" drought!

I thank you for the opportunity to comment and ask that the above issues be submitted and studied during the EIS period.

Sincerely,

William Britt III
grasshopper842@yahoo.com
P.O Box 3372
LaGrange, GA. 30241

Brock, Mills

1/12/2013

COMMENTER: Mills Brock
107 Lakeside lane
Bainbridge, GA 39819

ORGANIZATION:

COMMENTS: The Apalachicola bay wold be much better served if the Bay seafood resources were better managed for the long term by harvesting at sustainable levels. For years the Bays Oysters have been routinely over harvested and miss managed. An Apalachicola Times article published in, I believe, May of 2012 heralded the start of the Oyster harvest season coming early that year due to an abundance of Oysters on the Beds also in that same time frame the FWC sent out a public notice announcing the expansion of legal days and hours in which Oysters could be harvested in the Bay.(http://myfwc.com/news/news-releases/2012/may/24/acola-oysters/). Here is a direct quote from the public notice, "The seven-day work week will allow Apalachicola Bay oyster harvesters the ability to make up for time lost harvesting. This action by the FWC was supported by the Florida Department of Agriculture and Consumer Services."

It seems very questionable to me that by the time late summer was here in 2012, the Apalachicola Oyster industry, Apalachicola River Keeper and various other government/Non govt. organizations were crying foul and blaming low water flow as the reason the bay was, by they're estimation, in decline. In just doesn't add up that the Bay was in good enough shape in May to increase the harvest of seafood from the bay only to have it at a near collapse 3 months latter. Sounds like miss management of the resource and unsustainable harvest levels to me.

Buffalo, Teri

From: DIV.ACF.EIS
Subject: FW: Flows From Lake Lanier

From: Teri Buffalo [mailto:teribuf@bellsouth.net]
Sent: Monday, January 14, 2013 12:55 PM
To: ACF-WCM
Subject: Flows From Lake Lanier

You MUST NOT ALLOW unnecessary flows from our water basin. Viable Oysters down stream was not a purpose of the dam At Lake Lanier to Chattahoochee River. We are starving for water in Gwinnett county , Soon the pipes for distribution from Wayne Hill Plant will be exposed, and our drinking water supply pipes will be out of the water line. We must get Lanier up to full pool, and this must be done by **closing the Dam Doors to Chattahoochee Until Full Pool is achieved**. The Florida ruling on Oysters is unconstitutional, and they are using the water to support a booming hotel and condo business on the Gulf. I have stakeholder rights on Lake Lanier and I am exerting them Today. The ruling on Florida CFS flows must be overturned, and the corps in Mobile must do the right thing. Put some people to work by building more reservoirs Downstream since Florida gets more rain Than Georgia. We are experiencing one the worst droughts in history, And can no longer afford to support oysters downstream, since it was not an intended purpose of the reservoir. The Bushes hijacked the Endangered species act and the Fish and Wildlife Lawsuit should have been thrown out of court. Make BP build those additional Reservoirs for the gulf. What they did to the wildlife (haven't caught a Grouper in 3 years!) is unspeakable and part of their fines should be to build Lakes along the Flint rive System! Thank You Teri Buffalo

Callahan, Patricia

From: jtc@charter.net
Sent: Tuesday, November 27, 2012 10:30 AM
To: ACF-WCM
Subject: West Point Lake

Please quit letting all our water out. Most all of the reasons in the original plan for this lake can't be met with these extreme low water levels. There is no pleasure in having your dock on dirt and all the launches unavailable due to low water levels. What more is there to say. Please let us keep our water.

Sincerely,

Patricia Callahan
104 North Shore Dr.
LaGrange, GA 30240

Camberlander, Howard

12/9/12

Tetra Tech
Attention: ACF-WCM
61 St. Joseph Street
Suite 550
Mobile, AL 36602-3521

Scoping Comments for ACF Water Control Manual

I submit the following comments in the recently reopened public scoping period:

1) **There is a definitive need for additional storage in the ACF Basin; and that storage is readily and safely available in West Point Lake. Recent studies submitted to the USACE demonstrate that West Point Lake (WPL) can be maintained at a minimum 632.5 MSL year round; and if managed differently, the risk of downstream flooding during major rain events can actually be reduced! The trifecta is there to be won: Increased storage + Better management = Reduced flooding!**

2) **WPL is specifically authorized by Congress for Recreation and Sport Fishing/Wildlife Development in addition to Flood Control, Navigation, and Hydropower. Flood Control can be improved as outlined in the Operations Study referred to in #1 above and which study has been previously submitted to the USACE. Hydropower and Navigation both benefit from the availability of increased storage. The USACE must deliver and honor the Recreation and Sport Fishing/Wildlife Development Authorizations stipulated under law by Congress.**

3) **In order to accomplish #1 and #2 above, the Rule Curve needs to be adjusted upward to a minimum 632.5 MSL and the Action Zones need to be modified upward as well to a minimum 630.0 at the bottom of Action Zone 4. The parameters of 632.5 and 630.0 MSL are significant because they represent the initial and second recreation impact levels respectively as defined by the USACE.**

Camberlander, Howard

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4) **The economic damages to the WPL communities and the lack of economic development due to unnecessarily low and undependable lake levels need to be assessed and stopped. Small businesses have gone bankrupt and others have been stretched to keep their doors open. Major fishing tournaments have been cancelled damaging hotels, restaurants, marinas, and lake related businesses. Visitation is down and campgrounds have been closed. Land specifically set aside for a hotel, conference center, golf course, etc. has never been developed. We are blessed with a moderate climate and WPL should be managed as a 52 week a year lake with the corresponding benefit of a 52 week a year lake related economy! WPL needs a dependable and reliable lake level to provide for economic development and stop the economic harm.**

5) **Environmental harm to WPL needs to be documented. Due to wildly vacillating lake levels, the fish spawn has suffered significantly in 3 of the last 5 years and the quality of the fishery, specifically the bass and crappie, has declined. Thousands, if not hundreds of thousands of mussels have been killed threatening water quality; erosion has increased the cost of water treatment; and siltation continues to eliminate valuable storage.**

6) **USFWS needs to be challenged to provide their science and document the need for 5,000 cfs for endangered species. Why 5,000 cfs? Why not 2,000 cfs? How many of each endangered species are there? Do they exist in deeper water than previously thought? What is the Recovery Plan? Are they still endangered, threatened, or neither? Can they be relocated to other areas where water is more plentiful and the economic damages are less. Who is looking out for the welfare of the small businessman? Common sense would seem to dictate that the needs of man should be balanced with the needs of the critters. The RIOP needs close analysis as part of the EIS to see what changes can be made to avoid destroying the economic, environmental, and recreational value of WPL during all times other than "extreme" drought!**

I thank you for the opportunity to comment and ask that the above issues be submitted and studied during the EIS period.

Sincerely,

Howard Camberlander

CAMPAIGN, CAMPAIGN

Page 1 of 1

Dear Pete Taylor (USACE Mobile District),

West Point Lake is a 25,684 acre mainstream Chattahoochee River impoundment that was identified by the US Congress as a recreational demonstration project and has been in existence since 1974. The Lake was authorized by Congress for five uses: 1) flood control, 2) hydroelectric power, 3) navigation, 4) sport fishing and wildlife development and 5) general recreation. In regards to the latter two purposes, West Point Lake offers an abundance of wildlife and numerous ways to enjoy it. When the Lake was created, a forested valley was flooded; trees and other structures were left standing to provide an excellent fish habitat. Man-made fish attractors also improve fishing at the lake. Short, mild winters and long, warm summers plus gradual transitions between seasons characterize the climate—making the project conducive to year-round recreational and sport fishing use. The Lake's impact on the local economy ranges from $153 million to $710 million, depending upon how the lake level is managed. However, in recent years, the USACE has dropped water levels at West Point Lake for extended periods of time. Large expanses of exposed mud shoreline, bank erosion and smaller lake surfaces have become the norm, rather than the exception. Of course, I recognize that water is a limited resource throughout the Apalachicola-Chattahoochee-Flint Basin and that droughts are becoming more frequent and longer in duration. Historically, there is some seasonal variation in rainfall with the heaviest rains occurring in the winter and the lightest during the fall. This information, coupled with the fact that the USACE acknowledges that drawdowns are detrimental to recreational use, the fishery and soil erosion, makes the USACE's decision to change the guide curve for the Lake in the late summer/early fall perplexing. By changing the guide curve and, in essence, reducing the potential for the Lake to be used for its intended Congressional authorizations during high recreational and sport fishing season by 40% is not acceptable. This decision, on an already beleaguered lake, would have detrimental effects not only on our community's quality of life but especially to those businesses that depend upon tourism and recreation. I strongly encourage you to reevaluate your decision and re-establish a guide curve for West Point Lake that matches the Congressional authorized use of the Lake.

LaGrange-Troup County Chamber of Commerce's petition "US Army Corps of Engineers: Change operating rule curve for West Point Lake" on Change.org.

Read reasons why people are signing, and respond to LaGrange-Troup County Chamber of Commerce by clicking here:
http://www.change.org/petitions/us-army-corps-of-engineers-change-operating-rule-curve-for-west-point-lake?response=dcb8d4ded4a0

Carlton, Robert

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1/14/2013

COMMENTER: Robert Carlton
5762 Kimberly Beth Place
Sugar Hill, AS 30518

ORGANIZATION:

COMMENTS: As a resident of Gwinnett County and a home owner that lives on Lake Lanier I struggle with the inconsistent manner in which the lake levels are managed. It would seem that water release rate should not exceed water input flow rates. Current water release levels on a daily basis cause river levels down stream to reach levels that crest the river bank on a regular basis. I've had a number of discussions with Congressman Rob Woodale regarding the Army Corp management of the lake levels and the daily release of 5000 cfm. He has asked that I contact him with detail for discussion at this session of the Ga general assembly. I suggest that there be a comprehensive study as it relates to the water release needs in the Flint River water shed. And finally The Endangered Species Act does not require the Corps to augment Apalachicola River flows above run-of-river levels and the practice should not be required because it depletes Lanier unnecessarily.

Carter, Shane

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Nov. 30, 12

Tetra Tech
Attention: ACF-WCM
61 St. Joseph Street
Suite 550
Mobile, AL 36602-3521

Scoping Comments for ACF Water Control Manual

I submit the following comments in the recently reopened public scoping period:

1) **There is a definitive need for additional storage in the ACF Basin; and that storage is readily and safely available in West Point Lake. Recent studies submitted to the USACE demonstrate that West Point Lake (WPL) can be maintained at a minimum 632.5 MSL year round; and if managed differently, the risk of downstream flooding during major rain events can actually be reduced! The trifecta is there to be won: Increased storage + Better management = Reduced flooding!**

2) **WPL is specifically authorized by Congress for Recreation and Sport Fishing/Wildlife Development in addition to Flood Control, Navigation, and Hydropower. Flood Control can be improved as outlined in the Operations Study referred to in #1 above and which study has been previously submitted to the USACE. Hydropower and Navigation both benefit from the availability of increased storage. The USACE must deliver and honor the Recreation and Sport Fishing/Wildlife Development Authorizations stipulated under law by Congress.**

3) **In order to accomplish #1 and #2 above, the Rule Curve needs to be adjusted upward to a minimum 632.5 MSL and the Action Zones need to be modified upward as well to a minimum 630.0 at the bottom of Action Zone 4. The parameters of 632.5 and 630.0 MSL are significant because they represent the initial and second recreation impact levels respectively as defined by the USACE.**

Carter, Shane

Page 2 of 2

4) **The economic damages to the WPL communities and the lack of economic development due to unnecessarily low and undependable lake levels need to be assessed and stopped. Small businesses have gone bankrupt and others have been stretched to keep their doors open. Major fishing tournaments have been cancelled damaging hotels, restaurants, marinas, and lake related businesses. Visitation is down and campgrounds have been closed. Land specifically set aside for a hotel, conference center, golf course, etc. has never been developed. We are blessed with a moderate climate and WPL should be managed as a 52 week a year lake with the corresponding benefit of a 52 week a year lake related economy! WPL needs a dependable and reliable lake level to provide for economic development and stop the economic harm.**

5) **Environmental harm to WPL needs to be documented. Due to wildly vacillating lake levels, the fish spawn has suffered significantly in 3 of the last 5 years and the quality of the fishery, specifically the bass and crappie, has declined. Thousands, if not hundreds of thousands of mussels have been killed threatening water quality; erosion has increased the cost of water treatment; and siltation continues to eliminate valuable storage.**

6) **USFWS needs to be challenged to provide their science and document the need for 5,000 cfs for endangered species. Why 5,000 cfs? Why not 2,000 cfs? How many of each endangered species are there? Do they exist in deeper water than previously thought? What is the Recovery Plan? Are they still endangered, threatened, or neither? Can they be relocated to other areas where water is more plentiful and the economic damages are less. Who is looking out for the welfare of the small businessman? Common sense would seem to dictate that the needs of man should be balanced with the needs of the critters. The RIOP needs close analysis as part of the EIS to see what changes can be made to avoid destroying the economic, environmental, and recreational value of WPL during all times other than "extreme" drought!**

I thank you for the opportunity to comment and ask that the above issues be submitted and studied during the EIS period.

Sincerely,

Shane Carter

Cecil, Dottie

Page 1 of 2

Jan 14, 2013

U.S. Army Corps of Engineers (USACE)
Mobile District Office
Mobile, Alabama
ACF-WCM@usace.army.mil

Gentlemen:

As president of Atlanta Junior Rowing Association (AJRA), I'm writing to ask you to consider the concerns of recreational users of the Chattahoochee River between Buford Dam and Morgan Falls Dam in the scope of study in the ACF Master Control Update. AJRA uses the 6.5 mile stretch of the Chattahoochee between GA400 and Morgan Falls on a daily basis throughout the year and is one of the six rowing clubs signing the comment letter to ACOE submitted by Charlie Freed of Atlanta Rowing Club.

Given that we are in full support of the recommendations and conclusions outlined in Mr. Freed's comments, the purpose of this letter is not to repeat that information but rather to tell you about our organization and why we believe our perspective should be taken into consideration as part of your study.

AJRA is a nonprofit organization dedicated to introducing middle and high school students throughout metro Atlanta to the Olympic sport of rowing. This spring, we will be completing our 25th year of rowing – all on the same stretch of the Chattahoochee. We are one of the oldest and currently the largest youth rowing group in the state of Georgia. More than 200 youth participated in our program this past fall from some 30 middle and high schools across Atlanta from south of the airport to Forsyth County. About 120 of those rowers compete at regattas throughout the Southeast with the remainder in our middle school development program. In addition, 250-300 students ages 12-18 participate in our Lean to Row program each summer, which we have offered for the past 15 years. AJRA also gives back to the community by offering rowing merit badge clinics to Boy Scouts and participating in service projects such as Adopt-a-Road and Row for the Cure. Finally, AJRA has a very active group of several hundred alumni who continue to follow and support the organization.

Each year, AJRA qualifies and sends boats to compete at the highest level of youth rowing in the United States as well as at select international regattas. Many AJRA rowers also go on to achieve on highly competitive collegiate crew teams at prestigious academic institutions. Recent AJRA alumni are currently rowing at the U.S. Naval Academy, the U.S. Coast Guard Academy, the U.S. Military Academy at West Point, Yale, Harvard, Stanford, Brown, Georgetown, the University of Virginia, the University of Pennsylvania, the University of Southern California, and UCLA among others.

Equally important, however, is that even those who do not go on to row on college teams have benefited from the structure and skills acquired from being an AJRA athlete. We take great pride in the fact that the discipline and perseverance required to row contribute to success in many different aspects of our rowers' lives.

AJRA's long-time daily presence on our home stretch of the Chattahoochee in Roswell gives us a valuable perspective in how the ACOE's operations are affecting the river. Our Varsity rowers spend several hours on the water six days a week in fall, winter, spring and summer programs. In addition, the vast majority of our 17-person coaching staff rowed throughout their high school years with AJRA and returned after college to coach. That means many of our staff have been on the same 6.5 mile stretch of the Chattahoochee almost daily year-round for as many as 15 consecutive years.

Cecil, Dottie

Page 2 of 2

We recognize the Chattahoochee is a fragile environment and strive to be good stewards of the natural resource which is the only suitable rowing venue on the river in the Atlanta area. That is why we are very concerned that the discharge patterns at Buford Dam are threatening the recreational use of the river as well as its long-term ecology.

For AJRA, inconsistent and unpredictable water levels are a consistent problem affecting our ability to have practice. Low river levels mean we must stay off the water or risk damaging our boats, with two incidences in the past year alone costing approximately $11,000 each in repairs. Stumps, other debris, and sand bars regularly result in other minor damage to our fleet of more than 20 shells. High river levels and resulting stronger current create safety issues. Our experienced rowers generally can continue rowing during these times but we sometimes have to keep less experienced and middle school rowers off the water for safety reasons. Of more concern is the accompanying higher sediment and debris which ultimately result in less navigable waters when the releases are reduced. Our coaches have observed increased sediment over the years that has resulted in a much more narrow and shallow river with the problems exacerbated when the river levels are low.

We believe a more controlled discharge plan from Buford Dam could be used to help address these issues, and we urge you to review the recommendations submitted by Charlie Freed of Atlanta Rowing Club on behalf of the rowing community.

Thank you for the opportunity to comment on these important issues.

Sincerely,

Dottie Cecil
President
Atlanta Junior Rowing Association
dcecil@mindspring.com
404-213-3700

Chapman, Bruce

Page 1 of 1

11/5/2012

COMMENTER: Bruce Chapman
702 Waverly Rd.
Tallahassee, FL 32312

ORGANIZATION:

COMMENTS: Restore freshwater flows to the Apalachicola Basin to insure Apalachicola Bay health as measured by its oyster ecosystem. Conserve water usage upstream through methods already proven advantageous in other water-short areas found in California & other states & municipalities. We need a holistic approach that respects common needs among disparate interests. But any approach would begin with conservation. Thanks!

Childress, George

Page 1 of 2

Tetra Tech, Inc.
Attention: ACF-WCM
61 St. Joseph Street
Suite 550
Mobile, Alabama 36602-3521

RE: **Scoping Comments for Water Control Manual**

To Whom It May Concern:

On behalf of the City of LaGrange, Troup County and the surrounding community, and in accordance with our responsibilities under the National Environmental Policy Act of 1969 (NEPA), I submit and request to have the following comments carefully considered and added to the public record for the Apalachicola Chattahoochee Flint River basin Master Water Control Manual Environmental Impact Statement (EIS). As part of the process for determining the scope of issues to be addressed in the EIS and for identifying the important issues related to the proposed actions, we request that the following important issues be thoroughly considered by your agency:

- West Point Lake is a key and critical economic driver for the City of LaGrange, City of West Point, and all of Troup County and surrounding area. Each year over 2.2 million visitors come to West Point Lake for recreational purposes, accounting for $112 million in local economic impact. Without adequate lake levels, these economic opportunities are lost. Over the past few years fishing tournaments have been cancelled resulting in more lost income to an already economically stressed region. According to the 2010 U.S. Census, much of Troup County is contained in "less developed census tracts".
- In addition to the direct economic harm of low fish spawns, and lost fishing tournaments, the larger economic damage to the area is evident in the lack of any new developments that are in any way dependent upon the lake. Many other regional lake communities enjoy the year-round benefits of hotels, conference centers, and other developments on their properties. Examples of this type of development can be observed at Lake Martin, Alabama. The residents and potential visitors to West Point Lake demand similar treatment.

Childress, George

Page 2 of 2

- As you are aware, West Point Lake was the first Corps project to have a specific authorization by the Congress of the United States of America for recreation as well as sport fishing, and wildlife development. The constant fluctuation of winter and spring lake levels over the past several years has had devastating impacts on the annual bass spawn, as well as other fish populations. The reduction of fish spawn directly affects the fish take, and therefore the reputation of West Point Lake as a sport fishing destination. We feel strongly that this authorization has not been upheld by the Corps.
- A change to the West Point Lake rule curve for the winter months to an elevation of 632.5 MSL. This change would provide many advantages for the region, and ACF basin as a whole. The additional storage provided would enhance and support the congressional authorizations of the lake, in particular recreation, sport fishing, and wildlife development. The availability of additional water could also support navigation windows as deemed necessary by the USACE. Studies completed by Global Energy and Water Consulting, LLC support the safety and flood control capabilities of the lake at the increased winter pool level of 632.5. This information has been submitted to the USACE, Mobile office under separate cover.
- Further study is requested for the requirement of 5000 cubic feet per second of water (CFS) at the Florida line, as is currently mandated by the Endangered Species Act and U.S. Fish and Wildlife Service. This study should include accurate population counts of the three endangered species of mussels to determine if each should still be included on the endangered species list. If inclusion is still directed, then a comprehensive recovery plan for each should be an integral part of the study.

As your agency begins the process associated with the new EIS for the Water Control Manual for the ACF basin, we respectfully ask that the congressional authorizations for West Point Lake be carefully and thoroughly considered. West Point Lake has been consistently used as the "work horse" of the ACF basin to the detriment of any Lake-related economic development in Troup County for many years. We are hopeful of positive change in the WCM that will allow our community to move forward economically.

Our community is prepared to work with the Corps in any way necessary to facilitate the EIS and WCM for the basin. If there is anything I can do to help the process, please do not hesitate to contact me.

Best regards,

Signature

GEORGE W. CHILDRESS
PROPERTY OWNER WITH DOCK PERMIT.
DOCK HAS BECOME USELESS 6 OUT OF 12 MONTHS.

Clayton, Justin

Page 1 of 2

11/30/12

Tetra Tech
Attention: ACF-WCM
61 St. Joseph Street
Suite 550
Mobile, AL 36602-3521

Scoping Comments for ACF Water Control Manual

I submit the following comments in the recently reopened public scoping period:

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Clayton, Justin

Page 2 of 2

2.

4) The economic damages to the WPL communities and the lack of economic development due to unnecessarily low and undependable lake levels need to be assessed and stopped. Small businesses have gone bankrupt and others have been stretched to keep their doors open. Major fishing tournaments have been cancelled damaging hotels, restaurants, marinas, and lake related businesses. Visitation is down and campgrounds have been closed. Land specifically set aside for a hotel, conference center, golf course, etc. has never been developed. We are blessed with a moderate climate and WPL should be managed as a 52 week a year lake with the corresponding benefit of a 52 week a year lake related economy! WPL needs a dependable and reliable lake level to provide for economic development and stop the economic harm.

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I thank you for the opportunity to comment and ask that the above issues be submitted and studied during the EIS period.

Sincerely,

Justin Clayton

Cook, Keith

Page 1 of 1

10/30/2012

COMMENTER: Keith Cook
5764 Mershon Trail
Norcross, GA 30092

ORGANIZATION:

COMMENTS: Would someone explain why you don't simply allow Lake Lanier to fill to 1071 feet and then let only as much water OUT as comes IN each hour? i.e., let the flow be controlled by nature like is was for hundreds of years before the dam was there.

Copeland, Ron

Page 1 of 1

1/12/2013

COMMENTER: Ron Copeland
230 Hathcock Rd
Apalachicola, FL 32320

ORGANIZATION: Oyster Radio

COMMENTS: We need a healthy supply of fresh water to feed our oyster beds with the correct mix of salinity. The oysters are crucial to the economy of the area and their water source should be protected.

Cowles, Ann

Page 1 of 1

1/12/2013

COMMENTER: Ann Cowles
2400 Driftwood Point Lane
Carrabelle, FL 32322

ORGANIZATION:

COMMENTS: I live on St. George sound, at the mouth of the Apalachicola. Whatever happens to the river directly impacts me. We need an impartial assessment of the fresh water needs of the Apalachicola river and bay to see what is necessary to keep them healthy and prevent the degredation of this important ecosystem. We have the last great pristine bay in the United States. Please help us save this great natural resource. We need survey doneto assess the vulnerability of the flora and fauna in the Apalachicola, Chatahoochee, Flint river systems to establish a base line for preserving this important area. We need an unbiased assessment of the relative need of more frequent fresh water releases from the Jim Woodruff dam when the Apalachicola river and bay are under stress. We can't destroy this irreplacable resource!

Cox, Lesley

Page 1 of 1

1/12/2013

COMMENTER: Lesley Cox
P.O. Box CC
Carrabelle, FL 32322

ORGANIZATION: Les Hassel Excursions, Inc.

COMMENTS: Please protect the Apalachicola River and Bay by making sure the Water Control Management Plan EIS includes:
1. An assessment and consideration of the freshwater needs that will sustain the health of the Apalachicola River and Bay.
2. Increased water release from Woodruff Dam at appropriate timing and duration to sustain Apalachicola River and Bay
3. An ACF basin wide sustainable water management plan that protects the Apalachicola River and Bay and equitably shares the water of this basin.

Crane, Mike

Page 1 of 3

MIKE CRANE
District 28
325-B Coverdell Legislative Office Building
18 Capitol Square, S.W.
Atlanta, Georgia 30334
Phone: (404) 656-6446
Fax: (404) 463-1381

E-mail: Mike.Crane@senate.ga.gov

The State Senate
Atlanta, Georgia 30334

COMMITTEES:

Banking and Financial Institutions, Secretary
Economic Development
Education and Youth
Finance

December 11, 2012

Tetra Tech, Inc.
Attention: ACF-WCM
61 St. Joseph Street
Suite 550
Mobile, Alabama 36602-3521

Corps of Engineers,

I am in full support of the attached comments and recommendations. I would specifically like to see information regarding the 5000 CFS requirement at the Florida line. This particular requirement is extremely detrimental to water levels at West Point Lake, and I would like to see the data that supports that continued flow demand.

If you can help me with this information and also respond to the specific points in the attached letter, I would greatly appreciate your time.

If there is anything I can do to help the process, please do not hesitate to contact me.

Thank you,

Mike Crane
State Senate
District 28

Crane, Mike

Page 2 of 3

RE: **Scoping Comments for Water Control Manual**

To Whom It May Concern:

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Crane, Mike

Page 3 of 3

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Our community is prepared to work with the USACE in any way necessary to facilitate the EIS and WCM for the basin.

Criddle, Mike

Page 1 of 2

LAGRANGE georgia
SMART MOVE℠

January 4, 2013

Tetra Tech, Inc.
Attention: ACF-WCM
61 St. Joseph Street
Suite 550
Mobile, Alabama 36602-3521

RE: **Scoping Comments for Water Control Manual**

To Whom It May Concern:

On behalf of the City of LaGrange, Department of Economic Development, and in accordance with our responsibilities under the National Environmental Policy Act of 1969 (NEPA), we submit and request to have the following comments carefully considered and added to the public record for the Apalachicola Chattahoochee Flint River basin Master Water Control Manual Environmental Impact Statement (EIS). As part of the process for determining the scope of issues to be addressed in the EIS and for identifying the important issues related to the proposed actions, we request that the following important issues be thoroughly considered by your agency:

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- As you are aware, West Point Lake was the first Corps project to have a

CITY OF LAGRANGE
OFFICE OF THE ECONOMIC DEVELOPMENT DIRECTOR
P.O. Box 430 • LaGrange, Georgia 30241 • (706) 883-2055 • FAX (706) 883-2020
www.lagrangega.org

Criddle, Mike

Page 2 of 2

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We are prepared to work with the Corps in any way necessary to facilitate the EIS and WCM for the basin. If there is anything we can do to help the process, please do not hesitate to contact us at the address listed below.

Sincerely,

Mike Criddle

CITY OF LAGRANGE
OFFICE OF THE ECONOMIC DEVELOPMENT DIRECTOR
P.O. Box 430 • LaGrange, Georgia 30241 • (706) 883-2055 • FAX (706) 883-2020
www.lagrangega.org

Crosby, Gregory

Page 1 of 1

1/14/2013

COMMENTER: Gregory Crosby
6745 Bass Circle
Buford, GA 30518

ORGANIZATION:

COMMENTS: The 5,000 cfs minimum flow required at the state line is not representative of the true lowest historical flows in the ACF and is not sustainable.

- Lanier was never designed to support ALL downstream demands and can't be expected to because the dams originally proposed on the Flint River were never built.

- The Corps' current operating rules require more water to be released from Lanier than is necessary and do not allow as much to be stored as is possible. These draw the lake down more than necessary and make it less likely to refill to full pool under contemporary climatic conditions.

- The Endangered Species Act does not require the Corps to augment Apalachicola River flows above run-of-river levels and the practice should not be required because it depletes Lanier unnecessarily.

- Regular navigation is no longer feasible on the ACF and the Corps should not try to support it in view of the other demands on Lanier as a resource of last resort.

Cummings, Paul

Page 1 of 1

From: paul cummings <pgcummings@comcast.net>
Sent: Monday, October 29, 2012 11:36 AM
To: ACF-WCM
Subject: FW: Lake Lanier

-----Original Message-----
From: paul cummings [mailto:pgcummings@comcast.net]
Sent: Monday, October 29, 2012 11:07 AM
To: scm@usace.army.mil
Subject: Lake Lanier

No other lakes in Georgia suffer as bad as the Corp lakes in Georgia. The release rate on Lake Lanier renders the parks recreational activity of swimming unusable in the summer. The swim buoys remained dry over the past two years forcing swimmers into dangerous boat traffic. This is an accident waiting to happen. Rainfall in North Florida and South Alabama has been greater than the Lanier basin for the past two years but you continue to drain the lake.
Why charge for dock permits if the docks are unusable. After the final settlements on the water wars are concluded there should be a push to classify Lake Lanier a recreational lake and take the decisions out of the Corps hands.

1

Daniel, Larry

Page 1 of 1

10/31/2012

COMMENTER: Larry Daniel
138 Caney Ck. Ct.
Lagrange, GA 30240

ORGANIZATION:

COMMENTS: I've lived on this lake since Dec. 1998, until 2007 (one of the worst droughts in our regions history) my dock has NEVER sat on the ground....it has sat on the ground three times since then. I have 11 1/2 ft. of water under my dock at full pool, of which you can count on one hand and have fingers left over for the no. of DAYS per yr. this lake has ever been full. In 2008 they/you filled it in Feb., it stayed full till almost Nov., and only went down 3 ft. for winter pool that year. That alone tells me you can leave this lake full and only draw it down 3 ft. in winter. There are a lot of retired people on this lake, they enjoy fishing, though some can only fish from there dock. Outside of 2008, there hasn't been enough water under their docks for them to fish from them. My neighbor is a prime example. We have continuously been under " water rationing" in Ga., but at any given time, even in 2007, you could go to Apalachicola Fl. and almost everyone would be watering there yards all day on any given day. Businesses went out of business here, but they had plenty of water there, our water, water that we pay taxes on to have under our docks.....but isn't there. I guess you could say we pay in more ways than one! It makes no sense to draw this lake down the way you do, especially in winter(you draw it down at least 7 ft.), especially if you intend to draw it down 12-14ft. I wish we could kick the Federal govt. OUT of the state of Ga.. I know I would stand in line to do so!

Daniel, Larry

Page 1 of 1

12/11/2012

COMMENTER: Larry Daniel
138 Caney Ck. Ct.
Lagrange, GA 30240

ORGANIZATION:

COMMENTS: I've been in contact with several people in the Mobile District over the years, the the latest being the water management manger James Hathorn. i requested Mr. Hathorn to send me proof via. email, of what Florida is saying about the existence of sturgeon in the Appalachicola River, as well as proof of and endangered mussel; while mussels are laying dead every where here on West Point Lake from the water draw down that has occurred here 3 out of the last 5 yrs. As a fisherman, I can just about guarantee you there is no way a sturgeon lives, survives, or reproduces in this river..they only exist in a few rivers in the U. S.. At full pool (which you can count on one hand the # of days per year this lake is there, and have fingers left over; if it ever gets full in a years time) there is 11 1/2 ft. under my dock; it has sat on the ground 3 of the last 5 yrs.. Of course, I have never gotten anything from Mr. Hathorn or anyone else documenting the state of Florida's claims....maybe you will send me this documentation. Even though I have no water near my dock for what is now most of the year, guess what.....I still have to pay " lake front" taxes. i suggested to Mr Hathorn " Why don't you drain the lake....at least then I wouldn't have to pay these unreasonable taxes for " lake front " . i also told him that if there were ever a petition to " kick " the Corp. out of this state, I would be the first to sign it.....yours trulyt.....Larry Daniel 138 Caney Ck. Ct. Lagrange Ga.

Daniel, Larry

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11/12/2012

COMMENTER: Larry Daniel
138 Caney Ck. Ct.
Lagrange, GA 30240

ORGANIZATION:

COMMENTS: I've been " talking" to Mr Hathorn , the water mgr. in Mobile Al. a time or two lately, and asked him a question that I am now going to ask you (who ever you , is). He has not gotten back with me on this, but to be fair I just asked hi, this past Friday. I want documentation in the way of pictures, profiles, reproduction...etc.....on the supposed existence of no. 1- sturgeon; living, breathing ,reproducing, whatever in any way ; in the Appalachicola River No. 2- I want the dame documentation for these so called endangered mussels as well. You can send this to my email address that I have provided.....and it shouldn't take too long.....Larry Daniel

Davene Meeks Strawser, Anne

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1/14/2013

COMMENTER: Anne Davene Meeks Strawser
7010 Cherokee Trace
Cumming, GA 30041

ORGANIZATION: LLA

COMMENTS: Amen to LLA comments.

Davis, Steven

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Columbus Water Works

Serving our Community
Protecting the Environment

January 10, 2013

Colonel Steven J. Roemhildt
Commander, Mobile District
U. S. Army Corps of Engineers
C/O Tetra Tech, Inc.
61 St. Joseph Street, Suite 550
Mobile, Alabama 36602-3521

Re: Scoping Comments for update of Master Water Control Manual for Apalachicola-Chattahoochee-Flint River Basin

Dear Colonel Roemhildt:

Columbus Water Works, once again, appreciates the opportunity to make public comments relative to the revisions to the Corps' ACF Operating Plan. The sustainability of a healthy (water quality) and abundant (water quantity) water flow in the Chattahoochee River is vital to the quality of life, aquatic and human, in the Columbus region.

Water Quality, Biological Resources, Recreation

CWW's request for a USACE flow target to achieve Columbus minimum flows to sustain **water quality** has been expressed in many venues and correspondences over the past ten plus years. The request is a paramount necessity for Columbus and remains: 800cfs instantaneous flow; 1350cfs minimum daily flow and 1850cfs minimum weekly flow. The absolute necessity for a flow control node in Columbus to be added to the USACE's Operating Plan was demonstrated clearly in the year 2009, the wettest year in Columbus within 130 years of record. Much of the rest of Georgia was receiving ample rainfall which was welcomed in the 2008 drought recovery. Streams, rivers and reservoirs were well along in drought recovery, yet, in Columbus in the summer of 2009, approximately 30% of the days were below the 1350cfs minimum daily flow. On July 1, 2009 the daily flow dropped to an alarming 885cfs. Therefore, in the absence of a flow control target, Columbus is vulnerable to water quality degradation, especially when flows below Woodruff Dam can be met by the Flint River with little or no flow required from the Chattahoochee River.

1421 Veterans Parkway • PO Box 1600 • Columbus, Georgia 31902-1600 • Phone: (706) 649-3400

Davis, Steven

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The minimum flow needs for Columbus were originally expressed for wastewater assimilation purposes, but are now broadened to enhance the viability and restoration of **aquatic biological resources** in the River Restoration Project. This project removes two run of the river dams in Columbus, restoring the river to its pre-industrialization fall line condition. Also, the River Restoration Project allows for an excellent **recreational** experience in whitewater rafting, kayaking, and fishing. These two new features in Columbus also require minimum flow protection afforded through the addition of the requested minimum flows at the Columbus USGS gauge.

A repeat of flow management similar to 2009 would be detrimental to water quality, aquatic biological resources, and recreation. Since 2009, CWW has witnessed annually recurring problems with reservoir algae production due in large part to water age within the reservoirs. These problems could be ameliorated by maintaining the requested 1350cfs minimum daily flow in the river, enhancing water turnover within the reservoirs.

Including the requested minimum flows for Columbus would avoid these negative impacts. CWW strongly recommends the Corps' adoption of the minimum flows mentioned above which are: included in the Georgia Power Company's FERC license; agreed upon in the early Tri-State Compact; recommended in the State of Georgia Middle Chattahoochee Regional Water Plans; and acknowledged in the Corps' Remand Report (June 2012).

Navigation

Columbus has been a port city since the 1800s and provides the most upstream commercial navigation dock on the Chattahoochee River. Since the Corps' navigation channel maintenance has declined, the barge traffic has been forced out of business. However, Columbus would prefer the Corps to restore navigation for commercial and recreational purposes. Consideration should be given to seasonal navigation that coincides with high spring releases for aquatic species.

Water Management Recommendations

Three items in this topic may be worthy of the USACE's considerations: Storage enhancements; return rate for water withdrawals; and system improvements. Storage enhancement is a clear benefit to all water interests. More available water means higher lake levels, increased ability to meet in stream flow needs and increased supply for withdrawals. In so much as the original ACF project was never completed due to no Flint River reservoir, water storage is less than anticipated. Multiple means exist to compensate for this storage deficiency. Enhancing storage in existing reservoirs is attractive due to minimal land impact, minimal evaporative losses, potential to improve recreational utilization, and potential for increased hydropower production. Consideration should be given to raising Lake Lanier's full pool elevation by 2' and/or deepening of numerous and expansive shallow coves in West Point reservoir. New reservoir construction is a consideration recommended by three of the Georgia

Davis, Steven

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Regional Planning Councils within the ACF (Middle Chattahoochee RPC, Upper Flint RPC, Lower Flint RPC). Also, aquifer storage and recovery is another future alternative worthy of consideration to offset growing water demands on less water abundant climatic conditions.

Return rates for withdrawn water clearly has an impact on the sustainability of water allocations in the ACF. It appears from the Remand Report (June 2012) that current return rates for Lake Lanier withdrawals are very low (7%), but at the end of the planning horizon the return rate is significantly better (36%), but still very low. Consideration should be given to mitigation opportunities for the impact of high consumptive uses reflected by low return rates. The Corps may not have the authority to set return rates, but considering the significant impact that it has on the sustainability of the ACF water uses, collaboration with the Georgia EPD and other interested stakeholders should be considered in order to develop an implementable plan for progressive improvement in the return flows which could accommodate growth and economic development.

Flood Risk Management

The Corps is encouraged to review its flood management procedures to consider modifications to take advantage of technology in terms of utilizing real time USGS gauge data and imminent rainfall predictions to improve reservoir release response times. Improving flood management procedures could allow for adjustments to reservoir winter drawdowns, thus keeping more water available in the ACF system. In particular, a review of the fall floods of 2009 in relation to West Point Reservoir might provide insight for adjustments to the current flood management procedures which may be exceedingly conservative.

Data, Studies, Analytical Tools

The Remand Report (June 2012) recognized water demand projections from Lake Lanier that were developed in 2000 during a period of high growth and economic prosperity. Unfortunately, the recent and current economic climate are significantly subdued by comparison. Therefore, it seems appropriate to revise the demand projections to allow for marked improvements in water conservation in Metro North Georgia and a less aggressive growth forecast.

In regards to the unimpaired data set (1939-2008) the Corps is encouraged to pursue corrections to the errors in the dataset with other stakeholder interests. It is understood that the current dataset is the consensus data and is valuable for comparative analysis between model runs, but it has limited value in actual flow or level targets. Hence, it seems advisable to strive toward an improved dataset such that future models and flow management can be achieved with a higher degree of accuracy. This may be an issue beyond the scope of the work, but worthy of future pursuit.

Davis, Steven

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The Corps is encouraged to continue consultation with the U. S. Fish & Wildlife Service to explore opportunities for greater system storage retention via lowering "target" flows to more closely match "minimum" flows especially in composite zones 1 and 2 with the potential to also extend spring/summer release periods to improve likelihood of achieving 30-day+ periods of flood plain inundation.

CWW appreciates the Corps' responsiveness and cooperation in prior requests for information and minor flow assistance. CWW also appreciates the Corps' Herculean task in its role of "King Solomon" to appease conflicting interests within the scope of the Corps' authority. We wish you success in the current effort.

Sincerely,

Steven R. Davis
President
Columbus Water Works

cc: Mr. Philip Thayer
Mr. Billy Blanchard
Mr. Karl Douglass
Dr. Carole Rutland
Mayor Teresa Tomlinson

Deal, Nathan

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STATE OF GEORGIA
OFFICE OF THE GOVERNOR
ATLANTA 30334-0900

Nathan Deal
GOVERNOR

January 11, 2013

The Honorable Jo-Ellen Darcy
Assistant Secretary of the Army for Civil Works
108 Army Pentagon
Washington, D.C. 20310-0108

Re: State of Georgia's Water Supply Request

Dear Secretary Darcy:

On May 16, 2000, Governor Roy Barnes submitted to the Assistant Secretary of the Army for Civil Works a request that the U.S. Army Corps of Engineers allow withdrawals and make releases from Lake Lanier to meet Georgia's projected water supply demands of 705 million gallons per day (mgd). In 2012, after years of litigation, the Corps determined that is has the legal authority to grant Georgia's request. The Corps is now preparing an Environmental Impact Statement and will decide whether and how it will satisfy Georgia's request.

More than 3.3 million Georgians in the Metropolitan Atlanta area now rely on withdrawals or releases from Lake Lanier for water supply. Approximately six million people will rely on Lake Lanier for water supply by the year 2040. Lake Lanier is the most economical and environmentally-protective source of water supply for these Georgians. Operating Lake Lanier as Georgia has requested represents the highest and best use of Lake Lanier. I am confident that the Corps' EIS will concur in this assessment.

To assist the Corps in making its review based on the best and most current information available, I enclose with this letter an Affidavit by Judson H. Turner, Director of the Georgia Environmental Protection Division. Mr. Turner's Affidavit contains updated demographic and water demand data that confirm the continued need for the action Georgia has requested of the Corps, as well as updated analysis of the impact of granting Georgia's request on other project purposes and waters downstream. At a later date, Georgia also will submit an updated analysis of the national economic development benefits of granting Georgia's request.

As reflected in Mr. Turner's affidavit, based on current demographic information and as a consequence of improved water conservation, Georgia now believes that 705 mgd will be sufficient to meet Georgia's water needs from Lake Lanier and the Chattahoochee River to approximately the year 2040. In addition, thanks to improved wastewater treatment, in most

Deal, Nathan

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months Georgia requires less flow than previously requested in the Chattahoochee River at the confluence with Peachtree Creek to meet applicable water quality standards.

To provide long-term certainty for all of those involved, Georgia continues to request that the Corps enter into agreements that document the parties' understanding as to how the Corps will operate in support of Georgia's water supply needs. We anticipate that for lake withdrawals that require allocation of storage, certainty will be provided in the form of storage contracts. For river withdrawals, which do not require an allocation of storage, other forms of agreement would be appropriate.

I ask that you act on Georgia's outstanding request at the earliest possible date. If you desire further information from Georgia, please let me know.

Sincerely,

Nathan Deal

cc: Colonel Donald E. Jackson, Commander, South Atlantic Division, U.S. Army Corps of Engineers
Colonel Steven J. Roemhildt, Commander, Mobile District, U.S. Army Corps of Engineers

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Affidavit of Judson H. Turner

1. My name is Judson H. Turner. I am Director of the Georgia Environmental Protection Division ("EPD") of the Georgia Department of Natural Resources.

2. In May 2000, the State of Georgia submitted to the Assistant Secretary of the Army for Civil Works a request for reallocation of storage in the Lake Lanier conservation pool to provide sufficient water supplies to meet future municipal and industrial water supply needs of 705 million gallons per day (mgd). In support of that request, Georgia provided an Affidavit from then-EPD Director Harold Reheis discussing Metropolitan Atlanta's then-current and projected water supply needs and why Georgia needed a reallocation of storage in Lake Lanier to meet those needs. Georgia's water supply request remains pending with the Corps. The purpose of this Affidavit is to provide updated data and information that are relevant to that request.

3. The State of Georgia is responsible for managing the quantity and quality of the waters of the State for public and private water supply, and for agricultural, industrial, and recreational uses, while protecting the environment and human health. Georgia law provides that "the government of the state shall assume responsibility for the quality and quantity of such water resources and the establishment and maintenance of a water quality and water quantity control program adequate for present needs and designed to care for the future needs of the state." O.C.G.A. § 12-5-21(a).

4. EPD is the state agency to which state law delegates the responsibility for regulating withdrawals of water from, and discharges of pollutants into, the surface waters of the State. To fulfill this responsibility, EPD maintains data on the population of counties and municipalities within the State, and projections of the State's future population growth and water needs. EPD's expertise in hydrologic and water quality modeling allows it to assess the impact of water withdrawals and wastewater returns. EPD prioritizes water needs and evaluates alternatives for meeting these needs from the State's finite water resources.

GEORGIA'S NEED FOR WATER SUPPLY FROM LAKE LANIER

Current Population and Projections for Future Growth

5. More than 3.3 million Georgians currently rely upon withdrawals of water directly from Lake Lanier or withdrawals of water that the Corps releases from Lake Lanier to the Chattahoochee River to meet their water supply needs. Attached as Appendix 1 is a table that identifies the counties within which municipal and industrial water use customers are dependent in whole or in part on withdrawals and releases from Lake Lanier for their water supply.

6. Also shown in Appendix 1 are projected populations of the counties that will depend on significant amounts of water from Lake Lanier in the future. EPD projects that the number of Georgians who depend upon Lake Lanier for water supply will rise to more than 6 million by around 2040. The numbers in Appendix 1 come from the last published projections of the Georgia Office of Planning and Budget ("OPB"). EPD also reviewed the last published

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projections generated by the Metropolitan North Georgia Water Planning District (the "Metro Water District").

7. Municipal water systems in six counties within the Chattahoochee River watershed above the confluence with Peachtree Creek currently withdraw water from the Lake Lanier/Chattahoochee River system. EPD projects that water systems in four additional counties that are riparian or tributary to Lake Lanier will depend upon withdrawals from Lake Lanier in the future. In addition, the following other counties rely on Lake Lanier for water supply: Bartow, Cherokee, Clayton, Douglas, Fayette, Henry, Paulding, Rockdale, and Walton.

8. Counties that rely on Lake Lanier for water supply comprise the majority of the population for the Atlanta Metropolitan Statistical Area ("MSA"), which, according to the U.S. Census Bureau, is the ninth largest MSA by population in the United States. From 2000 to 2010, the Atlanta MSA grew by 24%, a growth rate exceeded by only two other MSA's in the United States. Two counties in the Atlanta MSA (Forsyth and Paulding) were among the 10 fastest growing counties in the United States during this period, both growing at rates greater than 74% for the decade. Gwinnett County added almost 217,000 persons to its population over the decade; for the same period, only 16 counties in the United States added more people.

Municipal and Industrial Water Supply Needs

9. Attached as Appendix 2 and Appendix 3 are the 2011 statistics for water withdrawals by the permit holders who rely upon the Lake Lanier/Chattahoochee River system. The average rate of water withdrawn directly from Lake Lanier in 2011 was 115.2 mgd. *See* Appendix 2. The annual average rate of water withdrawn from the Chattahoochee River between Buford Dam and Peachtree Creek was 245.7 mgd. *See* Appendix 3.

10. Appendix 4 shows projected withdrawals from Lake Lanier and the Chattahoochee River above the confluence with Peachtree Creek for the year 2040. EPD developed its forecasts for future water supply need projections in cooperation with the Metro Water District. These forecasts are based on a number of factors, including population, employment, and commercial and residential consumption rates.

11. EPD and the Metro Water District project that the nine local water systems that currently withdraw water from Lake Lanier or the Chattahoochee River above the confluence with Peachtree Creek will continue to do so. These systems are: City of Gainesville, City of Buford, Gwinnett County Water and Sewerage Authority, Forsyth County, City of Cumming, Atlanta-Fulton Water Resources Commission, DeKalb County Public Works (Water and Sewer), Cobb County Marietta Water Authority, and City of Atlanta.

12. Of these, five systems – City of Gainesville, City of Buford, Gwinnett County Water and Sewerage Authority, Forsyth County, and City of Cumming – withdraw from Lake Lanier. The other four facilities – Atlanta-Fulton Water Resources Commission, DeKalb County Public Works (Water and Sewer), Cobb County Marietta Water Authority, and City of Atlanta – withdraw from the Chattahoochee River upstream of the Peachtree Creek confluence. In

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addition, EPD projects that Habersham, White, Lumpkin, and Dawson Counties in the future will need to withdraw approximately 41 mgd from Lake Lanier by 2040.

13. The Metro Water District's most recent Water Supply & Conservation Management Plan includes projections for municipal and industrial water supply needs for 2035 and 2050. Based on these projections, adding the 41 mgd of withdrawals by Habersham, White, Lumpkin, and Dawson Counties, and assuming that growth in water usage between 2035 and 2050 will be roughly linear, water supply needs that are dependent on withdrawals and special releases from Lake Lanier will meet or exceed 705 mgd on an annual average basis by 2040. This includes direct withdrawals from Lake Lanier of 297 mgd and withdrawals of 408 mgd from the Chattahoochee River below Buford Dam and above the confluence of the Chattahoochee River and Peachtree Creek.

14. Note that in calculating its water supply projections, the Metro Water District used a population growth rate for the region that is lower than the rate of growth that OPB has projected. Taking into account differing population projections and other variables affecting demand, EPD projects that municipal and industrial water supply demands that are dependent upon withdrawals and special releases from Lake Lanier will reach 705 mgd (including 297 mgd lake withdrawals and 408 mgd river withdrawals) sometime between 2035 and 2045. It is reasonable to plan using the assumption that Georgia's water supply needs will be at least 705 mgd by 2040.

15. In light of Georgia's projections that its water supply needs from Lake Lanier will equal or exceed 705 mgd by 2040, if not a few years sooner, Georgia's request of the Corps is unchanged from what was requested in 2000: that the Corps operate Lanier to accommodate withdrawals of up to 297 mgd annual average from Lake Lanier and 408 mgd annual average from the Chattahoochee River between Buford Dam and the confluence with Peachtree Creek.

16. Georgia plans to help meet demands from Lake Lanier with water that will be stored in the proposed Glades Reservoir upstream of Lake Lanier on Flat Creek, released to Flat Creek, and will flow into Lake Lanier to be withdrawn from one or several of the intakes in Lake Lanier. The Glades Reservoir currently is in the permitting process. Based on reasonable assumptions regarding operation of Glades Reservoir, EPD projects a 30-40 mgd yield from Glades Reservoir. EPD plans to work with the Corps and the reservoir sponsors to ensure that the Glades Reservoir serves as a net benefit to the system yield, provided that the Corps will be able to meet water supply needs of 705 mgd from Lake Lanier. Because the 30-40 mgd released from Glades Reservoir will be withdrawn from Lake Lanier at the same rate that it enters Lake Lanier, no storage should be required for the withdrawal of that water.

Water Conservation

17. The per capita water use rate in the Metropolitan Atlanta Region has fallen in recent years, and the projected demand the region assumes that per capita water use within the region will continue to fall. The use rate is currently 148 gallons per capita per day (gpcd), and is expected to decline to 135 gpcd by the 2035-2040 timeframe. The decline in per capita water use has and is expected to continue to result from implementation of aggressive state and local

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water conservation policies, explained in greater detail below. Note that per capita water use and total population are among the factors, but are not the only factors, used to calculated total projected water use in the areas that are to be supplied by withdrawals and releases from Lake Lanier.

18. In 2001, the Georgia General Assembly created the Metro Water District and charged it with developing and maintaining comprehensive long-term plans for water supply and conservation, wastewater management, and watershed management for metro Atlanta. The Metro Water District is comprised of 15 counties, 92 cities, and 56 water supply systems. The plans are implemented by local water systems and local governments and are enforced by the State of Georgia through water permits and through eligibility for grants and loans. The Metro Water District completed development of its initial set of plans in September 2003. The governments within the Metro Water District spent the ensuing five years implementing the plans. In 2009, the Metro Water District adopted the first major update of its plans largely based upon lessons learned during the 2004-2009 implementation period.

19. Water conservation is an important element of the Metro Water District's Water Supply and Water Conservation Plan. The water conservation measures in the Plan are the most aggressive in Georgia and among the most aggressive in the United States. The 2003 Plan, as amended, included ten conservation measures applicable to all water systems and/or local governments. The 2009 update retained all and strengthened three of those measures. The Water Supply and Water Conservation Plan was again amended in December 2010 and added seven measures – two measures applicable throughout the District and five that apply to water systems that withdraw from Lake Lanier or the Chattahoochee River (denoted with asterisk). The water conservation measures in the Metro Water District Plan include: 1) conservation pricing; 2) replace older, inefficient plumbing fixtures; 3) pre-rinse spray valve retrofit education; 4) rain sensor shut-offs on new irrigation systems; 5) sub-unit meters in new multi-family buildings; 6) assess water losses with IWA/AWWA water audit methodology and develop programs to reduce systems water loss; 7) residential water audits; 8) low-flow retrofit kits for residential; 9) commercial water audits; 10) education and public awareness activities; 11) high-efficiency toilets and urinals in government buildings; 12) new car washes to recycle water; 13) expedited water loss reduction*; 14) multi-family HET rebates*; 15) meters with point of use leak detection*; 16) private fire lines to be metered*; 17) maintain a water conservation program*; 18) water waste policy or ordinance; and 19) HET plumbing fixtures in new construction consistent with state legislation.

20. The Metro Water District has made water conservation a priority, and local water systems have shown a strong record of implementation of water conservation measures. In annual progress surveys, the District has found: that tiered water conservation rates are in place throughout the metro area; that water systems serving 96% of the population offer toilet rebates, and over 76,872 older toilets have been replaced since 2008; that the larger systems have implemented programs to reduce system water losses, and, in 2010, over 10,000 leaks were repaired; and 98% of the population of the metro area is targeted with educational and outreach programs by local governments.

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21. In 2010, the Georgia Water Stewardship Act was passed by the Georgia General Assembly and signed by Governor Sonny Perdue. For those water users relying on Lake Lanier and the Chattahoochee River above Peachtree Creek, the Water Stewardship Act amplified and supplemented the 19 water conservation policies and programs identified in the Metro Water District's water supply and conservation plan. Among the Act's provisions that supplement the Metro Water District's demand management initiatives are: 1) requiring state government agencies to examine their programs, practices, and rules to identify opportunities to provide for voluntary water conservation; 2) requiring local governments to include water conservation measures in local comprehensive plans; 3) incentives for public water systems to use full cost accounting; and 4) technical assistance to local governments and public water systems for water loss abatement activities.

22. In 2012, EPD conducted an evaluation of the 2000-2010 rates of growth in water demand compared to rates of population growth in the counties with the 15 largest municipal surface water systems in Georgia. Six of the 15 largest municipal surface water systems are located in five counties (i.e., Fulton, DeKalb, Cobb, Gwinnett, and Hall) that rely upon withdrawals or water supply releases from Lake Lanier. The evaluation showed that water use in each of the five counties demonstrated a consistent decreasing trend over the decade, while population in each of those counties increased over the decade. Trends such as these in the five counties and beyond clearly indicate that the water conservation initiatives being implemented in the Atlanta region by the Metro Water District are significantly reducing per capita water demand.

Crediting of Return Flows

23. EPD projects that returns of treated wastewater to Lake Lanier and tributaries immediately upstream of Lake Lanier will mitigate the effect of withdrawals from Lake Lanier. EPD projects that the average annual return of treated wastewater to Lake Lanier and its tributaries in 2040 (assuming withdrawals of 297 mgd) will be approximately 165 mgd. *See* Appendix 4. The net withdrawal from Lake Lanier is therefore expected to be 132 mgd (297 mgd minus 165 mgd).

24. The State of Georgia will allocate the treated wastewater returned to Lake Lanier and its tributaries to particular users of water supply storage in Lake Lanier. This should increase the yield of the storage account or accounts to which the wastewater return is credited rather than count the same as natural inflows, which increase the yield of a water supply storage account only according to the percentage of total conservation storage owned by that user.

25. I am aware of no legal or legitimate policy reason why the Corps should not credit metered return flows to Lake Lanier or its tributaries exclusively to individual water supply storage accounts to which the State of Georgia has allocated such returns.

26. In accordance with federal law, the Corps has long recognized that it is the State, not the Corps, that determines and allocates water rights, and that the Corps should defer to the State's allocation of water rights. Allocation of wastewater return flows to individual users also is a matter of water rights that is best determined by the State.

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Deal, Nathan

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27. The return of highly-treated wastewater to an existing reservoir increases the yield of that reservoir by reducing the net withdrawals. As a result, return flows keep reservoir levels higher and mitigate the impact of water supply withdrawals. Return flows to a water supply reservoir are a form of water reuse that Georgia's statewide water plan favors.

28. EPD-permitted discharges from wastewater treatment plants are a function of water use and not rainfall and runoff, and therefore are more consistent and reliable than natural inflows. Because they are metered and reported to EPD, wastewater discharges also are easily monitored and accounted for, ensuring that a user would not obtain credit for any returns than do not actually occur.

29. It is more expensive for local wastewater utilities to discharge wastewater to Lake Lanier than to the Chattahoochee River or its tributaries, because they must treat the wastewater to a higher degree to meet applicable water quality standards. To make it worthwhile for these utilities to return wastewater to Lake Lanier, there must be policies in place that incentivize those returns. Therefore, EPD desires to credit to individual water users the exclusive right to withdraw or store the wastewater returns that are made. The Corps should do the same, or should defer to the State's allocation.

30. Thus, consistent with federal law and good policy, in determining the yield of the storage space that is held by or for a water supply user, the Corps should count exclusively to that user's storage space such returns as the State has allocated to that user.

Net Municipal and Industrial Water Consumption

31. A large portion of the metro Atlanta area's treated wastewater is returned to the Chattahoochee River downstream of Buford Dam and upstream of the United States Geological Survey ("USGS") gaging station at Whitesburg, Georgia. In 2011, an annual average of 34.4 mgd of treated wastewater was discharged to the Chattahoochee River between Buford Dam and the Peachtree Creek confluence, and an annual average of 184.2 mgd of treated wastewater was discharged to the Chattahoochee River between the Peachtree Creek confluence and the USGS Whitesburg gage. EPD projects that by 2040 (or as of the date when water withdrawals reach 705 mgd), the amount of treated wastewater discharged to the Chattahoochee River between Buford Dam and the Whitesburg gage will be 385 mgd on an annual basis, including 94 mgd discharged to the reach between Buford Dam and the Peachtree Creek confluence, and 291 mgd to the reach between the Peachtree Creek confluence and the USGS Whitesburg gage. When combined with return flow directly into Lake Lanier, the total return of wastewater associated with the withdrawal of 705 mgd is projected to be 550 mgd, or 78% of the total withdrawal.

32. Therefore, Georgia projects that as of 2040, the total consumptive use from municipal and industrial water supply from Lake Lanier and from the Chattahoochee River above the Whitesburg gage will be approximately 155 mgd, or 239 cfs, on an annual average basis. To put this amount into perspective, it is a mere 1.1% of the 21,587 cfs annual average daily flow of the Apalachicola River just downstream of the Georgia-Florida state line.

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In-Stream Demands for Water Quality

33. Metropolitan Atlanta local governments that discharge treated wastewater to the Chattahoochee River also rely upon releases from Lake Lanier to provide consistent flows in the river to assimilate those discharges.

34. EPD has developed a mathematical model, known as the Chattahoochee River Model, to simulate temperature, dissolved oxygen, and the concentrations of individual pollutants (biochemical oxygen demand, organic nitrogen, ammonia, nitrate, organic phosphorus, and ortho phosphate) under different flow, intake, discharge, and meteorological conditions.

35. Based on conditions that existed at the time of Georgia's 2000 water supply request, EPD determined that certain seasonally-varying flows in the Chattahoochee River at the confluence with Peachtree Creek would be needed to meet water quality standards. Thanks to improvements in wastewater treatment since 2000, the Chattahoochee River Model now shows the flows needed to assimilate wastewater in the Chattahoochee River and maintain water quality standards may be reduced.

Why Assurance of Long-Term Supply is Needed Now

36. If Lake Lanier were not available to satisfy the needs included in Georgia's water supply request, additional reservoirs and water resource projects would be needed to replace it. Due to the complexity and uncertainty associated with the permitting processes, planning for the development of new water supply reservoirs must generally begin 15 to 25 years, or even more, before there is a demand for the water.

37. The three major stages of the planning processes are 1) alternatives analysis and source evaluation; 2) detailed engineering and environmental studies; and, 3) state and federal permitting. The first stage includes forecasting future service area population and water demands; evaluating demand management and supply alternatives for meeting the demands; evaluation of source water capacity, quality, and reliability; and development of environmental, historic/archeological, and socio-economic assessments of impacts. In the second stage, detailed engineering and environmental studies must be conducted on the preferred alternatives, and funding sources must be identified and secured. In the third stage, if a new or expanded water supply reservoir is the preferred alternative, the applicant must apply for and secure a Federal Clean Water Act Section 404 permit (issued by the Corps of Engineers), a Clean Water Act Section 401 Water Quality Certification (issued by the State of Georgia), a Safe Dams permit and a water withdrawal permit (both issued by the State of Georgia), and a Safe Drinking Water Act Permit (also issued by the State of Georgia). Before the Corps of Engineers can issue a Section 404 permit, it must comply with provisions of the National Environmental Policy Act (i.e., prepare an Environmental Assessment and possibly an Environmental Impact Statement) and federal regulations. Of all the stages, the Section 404 permitting process generally requires the greatest amount of time and often is followed by legal challenges to the issued permit. As shown in Appendix 6, the process of studying, designing, permitting, financing, and constructing water supply reservoirs in Georgia has required a range of 5 to 25 years to complete, based upon six cases selected for illustration.

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38. Georgia desires assurance of storage for direct lake withdrawals through storage contracts. As for water supply releases, the Corps coordinates those with the Atlanta Regional Commission on a weekly basis. According to the 2011 ruling of the United States Court of Appeals for the Eleventh Circuit, the Corps is authorized to provide these releases without reallocating storage to those water supply users downstream. Nevertheless, to assure long-term certainty for all concerned, it is important that the Corps, Georgia, and local governments that Georgia may designate enter into a written agreement documenting their understandings regarding how and when releases for water supply will be coordinated.

Why Lake Lanier Continues to be the Best Alternative

39. As discussed in the Reheis Affidavit, numerous studies dating back to the 1960s have consistently concluded that Lake Lanier and the Chattahoochee River provide the most economical and environmentally-protective alternative for meeting the water supply needs of the region. *See* Reheis Affidavit at ¶¶ 21-28. As the Reheis Affidavit explains, a number of alternatives were investigated up through 1999, and none of them was determined to be a reasonable alternative. *See id.*

40. As part of the planning process for its 2003 plans and 2009 update, the Metro Water District considered potential water supply source alternatives for the communities in the study area through the planning period. The District's *Water Supply and Water Conservation Management Plan* determined that "after reviewing alternatives to the use of the federal reservoirs, the Metro Water District has concluded that there are no alternatives to the Chattahoochee River and the Etowah River as major water supply sources for north Georgia."

41. A water study task force, comprised of metro Atlanta area government and business leaders and assisted by Boston Consulting Group and technical experts, reached the same conclusion in 2009. The Governor of Georgia convened the task force, known as the Water Contingency Planning Task Force, in response to a decision of the United States District Court that threatened to eliminate virtually all water supply withdrawals and releases from Lake Lanier. The task force studied the costs associated with developing alternative sources of water resources to replace Lake Lanier if the Lake were to cease operating for water supply. The task force concluded that "Lake Lanier is by far the best water supply source for the metro region. If the recommended contingency options were required instead, these options would impose significant incremental costs and environmental impacts the region does not currently face." *See Water Contingency Planning Task Force Findings and Recommendations, 21 December 2009.*

IMPACT OF GEORGIA'S MUNICIPAL AND INDUSTRIAL WATER WITHDRAWAL ON LAKE LANIER AND WATERS DOWNSTREAM

42. EPD has performed computer modeling of the reservoir operations and water withdrawals contemplated in Georgia's water supply request to determine the effects of those operations and withdrawals on Lake Lanier and the Chattahoochee River. EPD's modeling is summarized below and discussed in greater depth in Exhibit A, the Memorandum of Dr. Wei Zeng, manager of EPD's Hydrological Analysis Unit. Although Dr. Zeng, for the purpose of his analysis, assumed that the Corps will continue to operate in accordance with the current version

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of the Revised Interim Operation Plan ("RIOP"), the State of Georgia continues to believe that the ACF system can be operated more efficiently for the benefit of all Basin stakeholders and is proposing alternative to the RIOP in our comments on the ACF Water Control Manual EIS Scoping Comments.

Hydropower Production at Lake Lanier and within the ACF System

43. The projected water withdrawals and Corps operations necessary to support them will not have a material impact on the production of hydropower at Buford Dam or the federal reservoirs in the ACF Basin as a whole, and any impact will be gradual over the next several decades. EPD's modeling indicates that, if viewed in terms of hydropower generation for the federal reservoirs in the ACF Basin as a whole, when Georgia has reached demands of 705 mgd and year 2040 water supply needs are met throughout the rest of Georgia, average annual power generation will be 970,900 MWh, as compared with the 988,055 MWh of (simulated) annual average generation with 2011 water supply levels. Thus, EPD projects a mere 1.7% decrease in hydropower generation basin-wide. *See* Zeng Memorandum at Exhibit A.

44. When Georgia has reached demands of 705 mgd from Lanier and the Chattahoochee River above the Peachtree Creek confluence, and 2040 water supply demands exist throughout the remainder of the basin, the annual average energy generated at Lake Lanier is modeled to be 116,435 MWh, in comparison to the amount of 123,735 MWh under 2011 water use conditions. Thus, the amount of hydropower produced at Lake Lanier with 2040 demands will be only 6% less than the amount being produced with current water supply demands. The effect will be even less in the years before Georgia's water demand has reached 705 mgd. *See* Zeng Memorandum at Exhibit A.

45. Georgia's conclusions are consistent with those reached by the Corps in its assessment of the impact to hydropower from granting Georgia's water supply request as compared with a baseline that assumed virtually no water supply operations at all. Using that baseline of comparison, the Corps concluded that the water supply operations and lake withdrawals would result in less than a 1% reduction to ACF Basin dependable hydropower capacity, and that the lake withdrawals and water supply releases contemplated by Georgia's water supply request would result in reductions in basinwide hydropower value of 4.4% and less than 1%, respectively. *See* Zeng Memorandum at Exhibit A.

Recreation at Federal Reservoirs

46. The Corps has established three thresholds for assessing impact of reservoir elevation to recreation at Lake Lanier. The first threshold is called Initial Recreation Impact Level ("IIL"), which is the level at which falling reservoir elevation first has some adverse effect on recreation. The Corps has determined that the IIL at Lake Lanier is 1066 feet above mean sea level (msl). The second threshold, the Recreation Impact Level ("RIL"), is the level at which significant impacts to concessions and recreation occurs. The RIL at Lake Lanier is 1063 feet above msl. The third threshold is Water Access Limitation Level ("WAL"), which is the elevation at which more serious impacts to recreation are observed. The WAL at Lake Lanier is 1060 feet above msl.

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47. As discussed at greater length in the attached Memorandum of Wei Zeng, under 2007 hydrologic conditions, with existing water supply demands, Lake Lanier is below RIL for 27 days during the primary recreational season in that year (May 1-September 8). EPD's modeling shows that this level of recreation impact will be increased by only 21 days under 2007 hydrologic conditions if Lanier is operated to meet the metro area's 2040 water needs of 705 mgd and Georgia's 2040 water supply needs in the remainder of the basin exist. EPD's modeling also shows that if Lanier is operated to meet Georgia's water supply request, metro area water supply needs from Lake Lanier reach 705 mgd, and 2040 water demands exist elsewhere in the basin, during the recreational season, the elevation of Lake Lanier would be below the ILL for only 5% more of the time, below the RIL for only 8% more of the time, and below the WAL 8% more of the time, than under the baseline condition. *See* Zeng Memorandum at Exhibit A.

48. At West Point Lake, the Corps has designated a ILL of 632 feet above msl, a RAL of 628 feet above msl, and a WAL of 627 feet above msl. If Lake Lanier is operated to meet water supply needs of 705 mgd, the number of days when West Point Lake falls below the RIL and ILL actually will be lessened, and there will be only a 1% increase in the number of days in which the elevation falls below the WAL.

49. For Lake Walter F. George, the ILL is 187 feet above msl, the RAL is 185 feet above msl, and the WAL is 184 feet above msl. With 2040 water supply demands imposed on the system, Lake Walter F. George will not experience elevations below RIL or WAL, and will see an increase of only 1% to 2% in the number of days below the ILL. *See* Zeng Memorandum at Exhibit A.

Navigation

50. As the ACF Basin reservoirs, for reasons unrelated to Georgia's water supply usage, are no longer used to support commercial navigation except under rare circumstances, Georgia's water supply request will not impact navigation.

Lake Lanier's Flood Control Function

51. The current request to reallocate the conservation storage to meet Georgia's projected future water supply needs does not involve changing the elevation of the top of conservation pool or the size of the flood control pool. Thus, reallocating part of the conservation storage to accommodate Georgia's increase water will have no impact on the flood control capability of Lake Lanier or the ACF system. Although changes to the size of the flood control pool are not necessary for the Corps to grant Georgia's request, Georgia may still recommend raising the conservation pool, at the appropriate time, if and when it determines that the benefits of doing so exceed any costs.

Impacts on Georgia/Florida State Line Flows

52. EPD's modeling indicates that the net water consumption associated with the municipal and industrial withdrawals contemplated in Georgia's water supply request is projected to have a

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minor impact on the flow in the Apalachicola River at the state line. *See* Zeng Memorandum at Exhibit A.

CONCLUSION

53. The foregoing information affirms and updates Georgia's 2000 request that the Corps operate Lake Lanier to meet water supply needs of 705 mgd annual average gross withdrawal, including 297 mgd annual average gross withdrawal from Lake Lanier and 408 mgd annual average gross withdrawal from the Chattahoochee River between Buford Dam and the confluence of the Chattahoochee River and Peachtree Creek. Accordingly, the Governor of Georgia has asked that the Corps grant Georgia's request by taking the following actions:

(a) Accommodate water supply demands by providing for 297 mgd annual average gross withdrawal from Lake Lanier and by making releases to allow 408 mgd annual average gross withdrawal from the Chattahoochee River between Buford Dam and the confluence with Peachtree Creek.

(b) Provide certainty for those municipal and industrial water withdrawals from Lake Lanier that require an allocation of storage by entering into long-term contracts. No storage should be required for withdrawals covered by existing relocation contracts or withdrawals of water released to Lake Lanier from Glades Reservoir upstream. Returns to Lake Lanier or its tributaries of treated wastewater should be credited exclusively to the storage accounts of those whom Georgia EPD designates to receive such credit.

(c) Provide certainty for those municipal and industrial water withdrawals from the Chattahoochee River that rely upon special releases from Lake Lanier by entering into agreements that document the parties' understandings about assurance and coordination of releases.

(d) Release from Lake Lanier enough water to provide a flow in the Chattahoochee River at the confluence with Peachtree Creek as EPD may request to maintain applicable water quality standards.

FURTHER AFFIANT SAITH NOT.

This 10th day of January, 2013.

Judson H. Turner

Sworn to and subscribed
before me this 10th day
of January, 2013

Notary Public
My commission expires: Sept. 29, 2013

YOLANDA P. FANNING NOTARY PUBLIC HENRY COUNTY GEORGIA EXPIRES SEPT. 29, 2013

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APPENDIX 1

Historical and Forecasted Population of Counties Using Lake Lanier System for Water Supply

County	1990[1]	2000[1]	2010[1]	2020[2]	2030[2]	2040[3]
Cobb	447,745	607,751	688,078	800,469	909,747	1,033,943
Dawson[4]	9,429	15,999	22,330	27,029	32,022	37,937
DeKalb	545,837	665,865	691,893	761,537	817,276	877,096
Forsyth	44,083	98,407	175,511	256,307	383,258	573,089
Fulton	648,951	816,006	920,581	1,095,897	1,284,954	1,506,626
Gwinnett	352,910	588,448	805,321	1,019,098	1,270,020	1,582,724
Habersham[4]	27,621	35,902	44,553	48,705	54,623	61,260
Hall	95,428	139,277	179,684	226,172	282,164	352,018
Lumpkin[4]	14,573	21,016	29,966	38,075	47,960	60,411
White[4]	13,006	19,944	26,704	31,057	34,841	39,086
Totals[5]	2,199,583	3,008,615	3,584,621	4,273,267	5,116,865	6,127,000

[1]From US Census Bureau

[2]Georgia Office of Planning and Budget 2012 Projections

[3]Projection based upon assumption that 2030 – 2040 growth rate (in per cent) will be same as 2020 – 2030.

[4]Watershed counties not currently withdrawing from Lanier, but may withdraw in future.

[5]This total does not include the additional counties that purchase water from the water systems that withdraw water from Lake Lanier and the Chattahoochee River, such as Paulding County.

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APPENDIX 2

Water Systems That Withdraw Directly from Lake Lanier

County	System Name	2011 Withdrawals (MGD)		
		Max. Month	Max. Day	Annual Average
Forsyth	City of Cumming	17.5	18.8	11.6
Forsyth	Forsyth County	11.8	12.8	8.6
Gwinnett	City of Buford	1.5	1.7	1.3
Gwinnett	Gwinnett County Water & Sewerage Authority	90.9	118.8	76.1
Hall	City of Gainesville	20.7	28.5	17.6
Total				115.2

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APPENDIX 3

Water Systems That Rely on Water Supply Releases from Lake Lanier to the Chattahoochee River

County	System Name	2011 Withdrawals (MGD)		
		Max. Month	Max. Day	Average Annual
Cobb	Cobb County Marietta Water Authority	51.9	64.8	45.1
DeKalb	DeKalb County Public Works (Water and Sewer)	84.7	114.8	72.7
Fulton	Atlanta – Fulton Water Resources Commission	54.3	69.9	38.7
Fulton	City of Atlanta	101.8	123.4	89.2
Total				245.7

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APPENDIX 4

Projected 2040 Water Withdrawals and Returns

(Annual Average)

Table 1 Current and Projected 2040 Water Withdrawals and Returns Above Buford Dam

Time Horizon	Withdrawal (mgd)	Return (mgd)	Net Consumptive Loss (mgd)
2011	120.6[1]	38.1	82.4
2040	297	165	132

Table 2 Current and Projected 2040 Chattahoochee River Water Withdrawals and Returns

Time Horizon	Withdrawal (mgd) (Buford Dam to Peachtree Creek)	Return (mgd)			Net Consumptive Loss (mgd)
		Atlanta Reach (Buford Dam to Peachtree Creek)	Whitesburg Reach (Peachtree Creek to Whitesburg gage)	Total	
2011	247.5[2]	34.5	185.3	219.8	27.7
2040	408	94	291	385	23

Notes:

[1] Including facilities upstream of Lake Lanier. These additional withdrawals are included to provide the sum of all consumptive loss above Buford Dam.

[2] Including facilities that withdrew from tributaries of the Chattahoochee River. These additional withdrawals are included to provide the sum of all consumptive loss below Buford Dam and above the Whitesburg gage.

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APPENDIX 5

TIME REQUIRED TO PLAN, PERMIT, FINANCE, AND CONSTRUCT WATER SUPPLY RESERVOIRS IN GEORGIA [Note: Try to fit all on one page]

Project / Activity	Bear Creek Reservoir, Jackson Co.	Cedar Creek Reservoir, Hall Co.	Tussahaw Creek Reservoir, Butts Co.	Big Haynes Creek Reservoir, Rockdale Co.	Line Creek Reservoir (Lake McIntosh), Fayette Co.	Hickory Log Creek Reservoir, Cherokee Co.
Applicant's initial contact with EPD regarding a new reservoir.	2/2/1994	7/17/1996	9/22/2000	11/5/1987	10/27/1987	3/22/2000
Applicant initial contact with the Corps regarding 404 permit for reservoir.	2/2/1994	2/12/1997	9/22/2000	4/29/1991	1/6/1989	3/22/2000
Applicant submits water withdrawal permit application.	3/3/1997	4/2/2002	3/13/2001	6/21/1999	3/21/2001	10/4/2005
EPD comments on withdrawal application.	5/28/1997	4/22/2002	5/22/2001	12/7/1999	4/16/2001	11/22/2005
EPD provides confirmation of need (to the Corps).	4/20/1995	Information unavailable	11/3/2000	5/6/1991	11/20/2000	11/20/2000
Applicant submits 404 application to the Corps.	2/22/1995	8/26/1997	11/15/2000	5/28/1991	5/1/2002	4/27/2000
The Corps notifies public of the 404 application and requests comments.	5/26/1995	10/8/1997	12/27/2000	11/22/1991	10/3/2002	12/27/2000
The Corps responds to applicant's 404 application.	7/1/1995	11/13/1997	2/1/2001	12/28/1991	11/8/2002	2/28/2001
EPD **issues** 401 Water Quality Cert.	5/17/1996	8/21/1998	5/22/2001	8/31/1992	9/6/2006	8/2/2002
EPD issues withdrawal permit.	4/1/2002	8/1/2002	2/14/2003	3/22/2002	9/6/2006	9/12/2008
The Corps issues final 404 permit to applicant.	7/20/1996	11/16/1998	10/23/2002	10/2/1992	6/27/2007	5/24/2004
EPD issues Safe Dams permit.	10/1999	10/2001	8/25/2003	5/31/1994	12/9/2009	4/29/2008

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Jurisdiction constructs dam.	04/2001	9/11/2003	June 2005	1/27/1997	April 2010	8/5/2005
Jurisdiction fills reservoir.	Spring 2002	8/11/2005	Sept. 2005	June 1998	Started November 1, 2012	6/30/2011

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EXHIBIT A

Memorandum of Dr. Wei Zeng

Manager, Hydrologic Analysis Unit

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Georgia Department of Natural Resources
Environmental Protection Division
Watershed Protection Branch
4220 International Pkwy., Suite 101, Atlanta, Georgia 30354
Linda MacGregor, P.E., Branch Chief
(404) 675-6232

Memorandum

To: Judson Turner, Director, Georgia EPD
From: Wei Zeng, Hydrology Unit, Georgia EPD
Date: January 10, 2013
Subject: Technical Analysis of Georgia's 2000 Water Supply Request

Introduction

You asked me to analyze the impact to the federal reservoirs in the Apalachicola-Chattahoochee-Flint (ACF) River Basin, to hydropower production and recreation at those reservoirs, and to river flows at the state line with Florida, of Georgia's 2000 Water Supply Request. Georgia submitted the water supply request to the U.S. Army Corps of Engineers in May 2000, asking for the Corps to operate Lake Lanier to accommodate future municipal and industrial direct withdrawals from Lake Lanier and river withdrawals downstream totaling 705 million gallons per day (mgd). As more than twelve years have passed since Georgia submitted its water supply request to the Corps, Georgia is providing the Corps updated demographic and water demand information in support of its request. Georgia forecasts that its municipal and industrial water supply demands from Lake Lanier will reach or exceed 705 mgd by approximately 2040.

The Hydrology Unit of EPD set up a mathematical model of the ACF Basin to analyze the potential impacts of Georgia's request. This memorandum documents the model settings and results.

Platform Model – HEC-ResSim

The mathematical model that we used for this analysis was developed by the U.S. Army Corps of Engineers Hydrologic Engineering Center (HEC) for analyzing reservoir operations and basin-wide water resource management. The Corps calls this platform model "HEC-ResSim." The Corps periodically upgrades HEC-ResSim's capability. The Corps released its current version of the model to the public in May 2011. This version of the model reflected the Corps' then-current ACF Basin reservoir operating plan, known as the Revised Interim Operation Plan (RIOP), as it existed as of May 2011.

Since May 2011, the Corps has made minor changes to the RIOP. The Hydrology Unit of EPD has added these changes to the Corps' May 2011 platform model. Thus, EPD's version of the HEC-ResSim model reflects operations under the current RIOP.

We modeled a 34-year period, assuming rainfall and inflow conditions that occurred from January 1, 1975 to December 31, 2008, and applied to each of these years the Corps' RIOP and, as discussed below, varying levels of water supply use. We chose the 1975-2008 period for several reasons. First, the Unimpaired Flow (UIF) data developed by the Corps only covers hydrologic conditions through December 31, 2008. In addition, this period excludes the period before all ACF federal reservoirs have been in operation. Finally, the U.S. Fish and Wildlife Service has used the same simulation period for its analyses of various ACF operations. It should be noted that the droughts

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that most affected the federal reservoirs in the ACF Basin occurred within in this period, with the possible exception of the current drought, the duration and severity of which cannot yet be determined.

Model Setting on Water Demand

To understand the impacts of Georgia's water supply request, we compiled current and proposed future water use conditions and ran three different scenarios: what we call Baseline Condition, Scenario A, and Scenario B. The Baseline Condition assumes current water use, as further defined below. Scenario A isolates the effect of the withdrawals associated with Georgia's water supply request by applying to the model annual average gross withdrawals of 705 mgd from Lake Lanier and the Chattahoochee River through Atlanta but keeps current demands throughout the remainder of the ACF Basin. Scenario B evaluates the effects of the water use contemplated in Georgia's water supply request in combination with forecasted demands throughout the basin by assuming annual average gross withdrawals of 705 mgd from Lake Lanier and the Chattahoochee River through Atlanta and year 2040 water use throughout the remainder of the ACF Basin in Georgia, plus increasing water use in ACF Basin in Alabama, as discussed further below.

Baseline Condition

To capture the effect of current water use within the ACF Basin, we included in the model the most recent available annual (2011) withdrawal and discharge data of all permitted municipal and industrial facilities in the Georgia portion of the ACF Basin. These include thermal electric power generating facilities that use water for cooling purposes and that incur consumptive water losses as a result of their cooling operations. We included the estimate of 2007 total ACF Basin agricultural water use that Georgia developed as part of its statewide water planning, which is the best information that we have on Georgia's current agricultural use.

We included Alabama's 2007 water consumption from the ACF Basin as estimated by the Alabama Office of Water Resources (OWR) in 2009. For water consumption in Florida, we used the numbers contained in the Corps' platform model.

In the Baseline Condition, and in Scenarios A and B, we assumed the current RIOP would remain in effect.

Scenario A – Impact of Water Supply Request

As Georgia's water supply request remains 297 mgd annual average gross lake withdrawal and 408 mgd annual average gross river withdrawal, for a total of 705 mgd, those are the amounts of withdrawal that we used in the impact analysis. We added back projected returns of treated wastewater to Lake Lanier and the Chattahoochee River. Using EPD projections, we assumed that 78% of the 705 mgd that is withdrawn will be discharged back to surface waters within the basin in the form of highly treated wastewater. This includes 165 mgd returned to Lanier and its upstream tributaries, 94 mgd returned to the Chattahoochee River between Buford Dam and Peachtree Creek, and 291 mgd returned to the Chattahoochee River downstream of Peachtree Creek.

As Scenario A is intended to isolate the impact of meeting the forecasted water supply needs that would be dependent on withdrawals and water supply releases from Lake Lanier, we held water use elsewhere in the basin at current levels (that is, levels according to most recent data available).

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Scenario B – Impact of Water Supply Request in Combination with Other 2040 Georgia Demands in ACF Basin

In Scenario B, we added to the water supply uses contemplated by Georgia's water supply request the other projected 2040 water demands within the ACF Basin in Georgia. These include projected municipal, industrial, and agricultural water needs. EPD developed the forecasts for those demands as part of the planning associated with the State Water Plan and Regional Water Development Plans. We do not have projected water demands for portions of the basin that are in Alabama. To estimate the cumulative impact resulting from future Alabama demand, we assumed an increase of 15% to the current Alabama figure used in the baseline condition alternative. We held the level of water use in the Apalachicola River reach the same as in the Baseline Condition because we have no information upon which to base an estimate of future water use in the State of Florida.
I have enclosed a DVD containing these models.

Results and Analysis

In my discussion of the modeling results, Scenarios A and B are compared to the Baseline Condition. The potential impact of Georgia's Request is described with regard to:

(1) Average elevations in the federal reservoirs of Lanier, West Point, and Walter F. George;
(2) Minimum elevations in these reservoirs;
(3) Elevation duration curves in these reservoirs;
(4) Daily average power generation in the federal reservoirs;
(5) Percentage of time when there is some level of recreational impact; and
(6) State line flow duration curve.

Reservoir Elevations

Using the Res-Sim Model, we determined the average and minimum daily elevations, and the elevation duration curves, of the federal reservoirs in the ACF Basin under the Baseline Condition and Scenarios A and B. The average and minimum daily elevations of a reservoir are obtained by looking at the daily elevation of the period of simulation, from January 1, 1975 to December 31, 2008, and calculating the average and minimum daily value for each of the 365 days in a year. The elevation duration curve shows the percentages of time over the entire 34-year period that the reservoirs will exceed certain elevations.

As shown in Slides 9 and 25 of the attached Exhibit 1, the average daily elevation of Lake Lanier under both Scenarios A and B will be no more than 0.7 feet lower around May 1 as compared with the Baseline Condition. May 1 is the date on which the top of conservation pool guide curve for Lake Lanier rises to 1071 feet for the first time in the year and is the beginning of the primary recreational season. Similarly, the average daily elevation of Lake Lanier around December 1 under Scenarios A and B is no more than 1.5 feet lower than under the Baseline Condition.

The difference between the Baseline Condition and Scenarios A and B is more pronounced in terms of the daily minimum elevation in Lake Lanier. (See Slides 10 and 26.) At the lowest point on the minimum daily elevation curve, which usually takes place in the month of December, the elevation under Scenarios A and B is approximately 6 feet lower than in the Baseline Condition.

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The elevation duration curves for Lake Lanier are shown on Slides 11 and 27. For the upper 30% of the duration curve (representing the times of higher reservoir elevation), the elevation of Lake Lanier is essentially the same in the Baseline Condition and Scenarios A and B. Moreover, for approximately 70% of the duration curve, the elevation under Scenarios A and B is only approximately one foot or less lower than in the Baseline Condition. The difference is greater, up to 6 feet, at the lowest point in the lower 30% of the duration curve.

The impact on Lakes West Point and Walter F. George is minor. (See Slides 12 through 17 and Slides 28 through 33.) There is very little, only inches, difference in average daily elevation at both West Point and Walter F. George between the Baseline Condition and Scenarios A and B. In terms of minimum daily elevation, the greatest difference between the Baseline Condition and Scenarios A and B is only 1.5 feet in West Point (in the months of September and October), and up to 1.2 feet at Walter F. George (in September and October). At the point in the year when West Point and Walter F. George typically reach their lowest elevation for the year (usually in November or December), there is little difference between the Baseline Condition and Scenarios A and B. Even less of a change is evident in the elevation duration curves for Lakes West Point and Walter F. George. (See Slides 14, 17, 30, and 33).

Power Generation

The projected water withdrawals and Corps operations necessary to support them will not have a material impact on the production of hydropower at Buford Dam. Under Scenario A, with water supply needs of 705 mgd for the Metro Atlanta Area and current demands elsewhere, the daily average energy generated at Lake Lanier is modeled to be 319 MWh, and the annual average energy generated at Lake Lanier is modeled to be 116,435 MWh. In comparison, the daily average energy generated under the Baseline Condition is modeled to be 339 MWh and the annual average is 123,735 MWh. When Georgia has reached demands of 705 mgd from Lake Lanier and the Chattahoochee River above the Peachtree Creek confluence, combined with 2040 water supply demands throughout the remainder of the basin, the annual average energy generated at Lake Lanier is modeled to be 116,435 MWh, in comparison to 123,735 MWh under the Baseline Condition. Thus, assuming 2040 water supply demands throughout the ACF Basin, there would be less than a 6% reduction in power produced at Lanier. The impact will be even less in the years before Georgia's water demand has reached 705 mgd.

As shown by Slides 18 and 34, Georgia's future water supply demands will have very little impact on the total amount of energy produced by all of the federal reservoirs in the ACF Basin. Under Scenario A, when Georgia has reached demands of 705 mgd, the daily average energy output from all ACF federal reservoirs is modeled to be 2,671 MWh (annual average 974,915 MWh). The daily average energy output under the Baseline Condition is 2,707 MWh, and the annual average is 988,055 MWh. Thus, there will be only a reduction in daily average generation of 36 MWh (annual average reduction of 13,140 MWh) for all reservoirs combined. Under Scenario B, the daily average energy output from all ACF federal reservoirs is modeled to be 2,660 MWh (annual average 970,900 MWh). The reduction in daily average generation will be only 47 MWh (annual average reduction of 17,155 MWh). For the combined generation of all of the federal reservoirs in the ACF Basin, there is only a 1.3% reduction under Scenario A and a 1.7% reduction under Scenario B.
Georgia's conclusions are consistent with those reached by the Corps in its assessment of the impact to hydropower from granting Georgia's water supply request as compared with a baseline that assumed virtually no water supply operations at all. Using that baseline of comparison, the Corps concluded that the water supply operations and lake withdrawals under Georgia's water supply

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request each would result in less than a 1% reduction to ACF Basin dependable hydropower capacity; that the lake withdrawals contemplated by the request would result in a reduction in basin-wide hydropower value of 4.4%; and, that the water supply releases contemplated by the request would result in a reduction in basin-wide hydropower value of less than 1%.

Recreational Impact

We evaluated the recreational impact by looking at the primary recreational season, defined by the Corps as May 1st through September 8th, and tallying the percentage of days when elevation of a reservoir is lower than the three levels of recreational impact, which are, in increasing degree of impact, the Initial Impact Line (IIL), Recreational Impact Line (RIL), and Water Access Limitation (WAL). According to the Corps, the IIL at Lake Lanier is 1066 feet above mean sea level (msl), the RIL is 1063 feet above msl, and the WAL is 1060 feet above msl. For West Point Lake, the ILL is 632 feet above msl, RAL is 628 feet above msl, and WAL is 627 feet above msl. For Lake Walter F. George, the ILL is 187 feet above msl, the RAL is 185 feet above msl, and the WAL is 184 feet above msl.

The impact to recreation is shown on Slides 19 through 21 and 35 through 37. In Scenarios A and B as compared with the Baseline Condition, the increase in percentage of days of IIL, RIL, and WAL at Lake Lanier will be 5%, 8%, and 8% respectively. Under hydrologic conditions of Year 2007, a drought year of exceptional dry conditions, the total number of days when the elevation of Lanier falls below the RIL under Scenario A is 47 days, under Scenario B is 48 days, and under the Baseline Condition is 27 days.

The recreational impact on West Point and Walter F. George is virtually non-existent. The only impact on West Point under Scenario A and Scenario B is a 1% increase in the frequency of WAL, while the recreational impact of IIL and RIL actually are lessened. At Walter F. George, there is a 1% and 2% increase in IIL in Scenario A and Scenario B, respectively. The elevation of Walter F. George does not fall to the RIL or WAL in any of the three scenarios.

State Line Flow

There is no noticeable difference between Scenario A and the Baseline Condition alternative in terms of state line flow duration curve, which suggests that the isolated increase in water supply in the metro Atlanta area itself will not result in any significant change in state line flow. (See Slides 22 and 23.) When we look at the portion of the graph between the 80 and 95 percentiles exceedence, the curve resulting from Scenario B is only around 200 cfs below the curve resulting from the Baseline Condition. (See Slides 38 and 39.) This 200 cfs is only 4% of the minimum flow requirement of 5,000 cfs, and less than 1% of the long term average simulated flow. At the very bottom of the duration curve, note that the RIOP's Drought Zone Operation will be triggered roughly 0.2% of the time under Scenario A and only 0.2% more often under Scenario B. Overall, the change in state line flow is minor in comparison to the magnitude of state line flow assuming the RIOP remains in place, and will likely remain so in any new operation plan that replaces the RIOP.

Enclosure

Deal, Nathan

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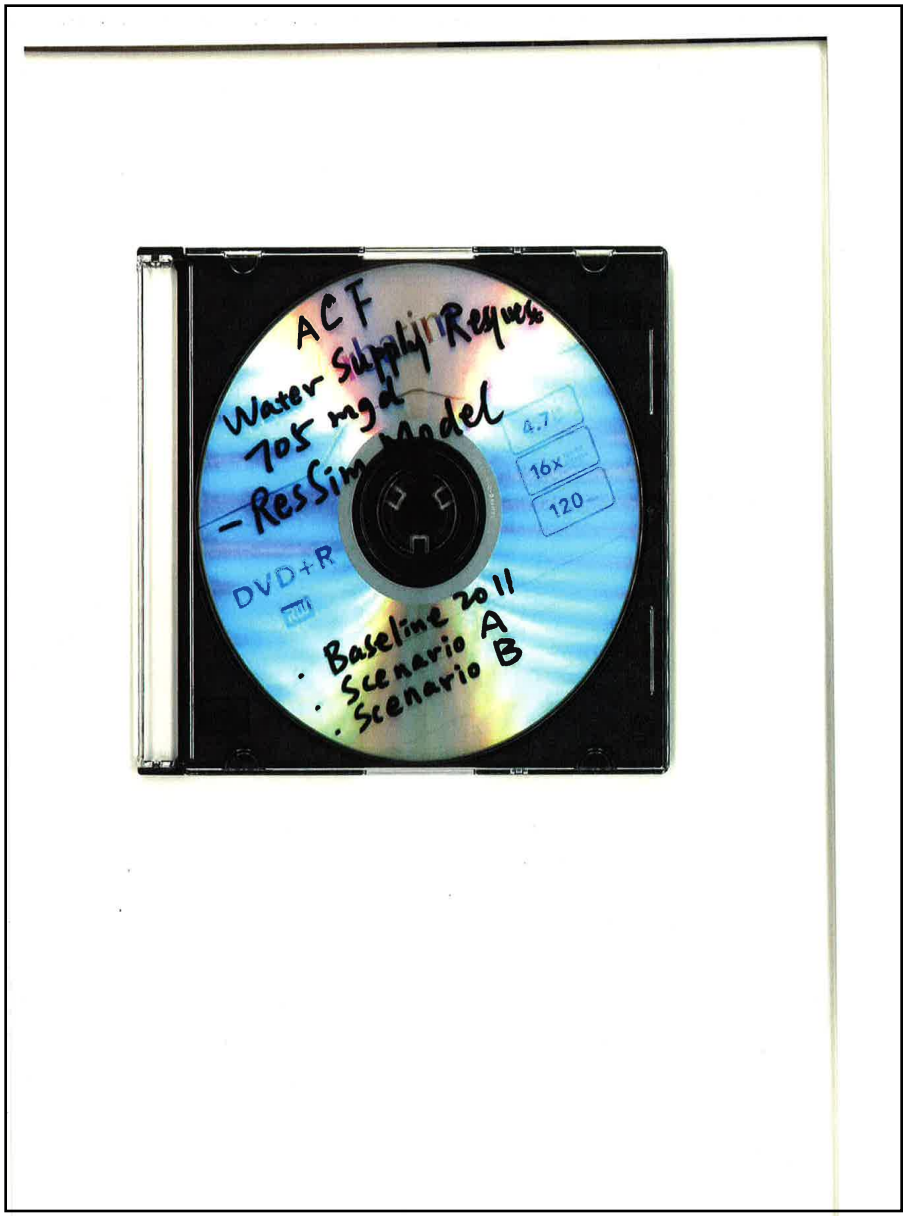

Deal, Nathan

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ACF Water Supply Request Evaluations

Georgia EPD

Hydrology Unit

January 2013

Model Scenarios

- Scenario A
  - Projected 2040 Metro District (Atlanta area) water use as revised from 2009 Metro District Plan
  - Water use conditions held unchanged in the other reaches
  - May 2011 version ACF ResSim model
  - RIOP operation as revised and reflected in May 2012 Biological Opinion

3

Model Scenarios

- Baseline
  - Recorded 2011 M&I and thermal water use
  - Estimated 2007 Agricultural water use
  - 2007 Alabama reach-wise (Columbus, WFG, and Jim Woodruff reaches) water use as provided in UIF data
  - May 2011 version ACF ResSim model
  - RIOP operation as revised and reflected in May 2012 Biological Opinion

2

Modeled 2040 Metro District Water Demand

- Withdrawal
  - 297 mgd in Lanier reach including 256 mgd from metro District entities and 41 mgd reserved for upstream entities
  - 408 mgd in the upper Chattahoochee River
- Return
  - 165 mgd to Lanier
  - 94 mgd to Chattahoochee River between Buford Dam and Peachtree Creek
  - 291 mgd to Chattahoochee River between Peachtree Creek and Whitesburg gage

5

Model Scenarios

- Scenario B
  - Projected 2040 Metro District (Atlanta area) water use as revised from 2009 Metro District Plan
  - Projected 2040 water use for the other reaches per State Water Plan
  - Alabama 2007 use water with a 15% increase
  - May 2011 version ResSim model
  - RIOP operation as revised and reflected in May 2012 Biological Opinion

4

Modeling Results

- Average lake elevations
- Minimum lake elevations
- Lake elevation exceedance
- Average power generation
- Recreation impacts
- State line flow

7

Period of Simulation

- January 1, 1975 through December 31, 2008
- Corresponding to period when all federal reservoirs are in place
- Period containing the most severe droughts in the past three decades
- Corresponding to the period used by USFWS for alternative evaluations

6

Deal, Nathan

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Scenario A vs. Baseline

8

Deal, Nathan

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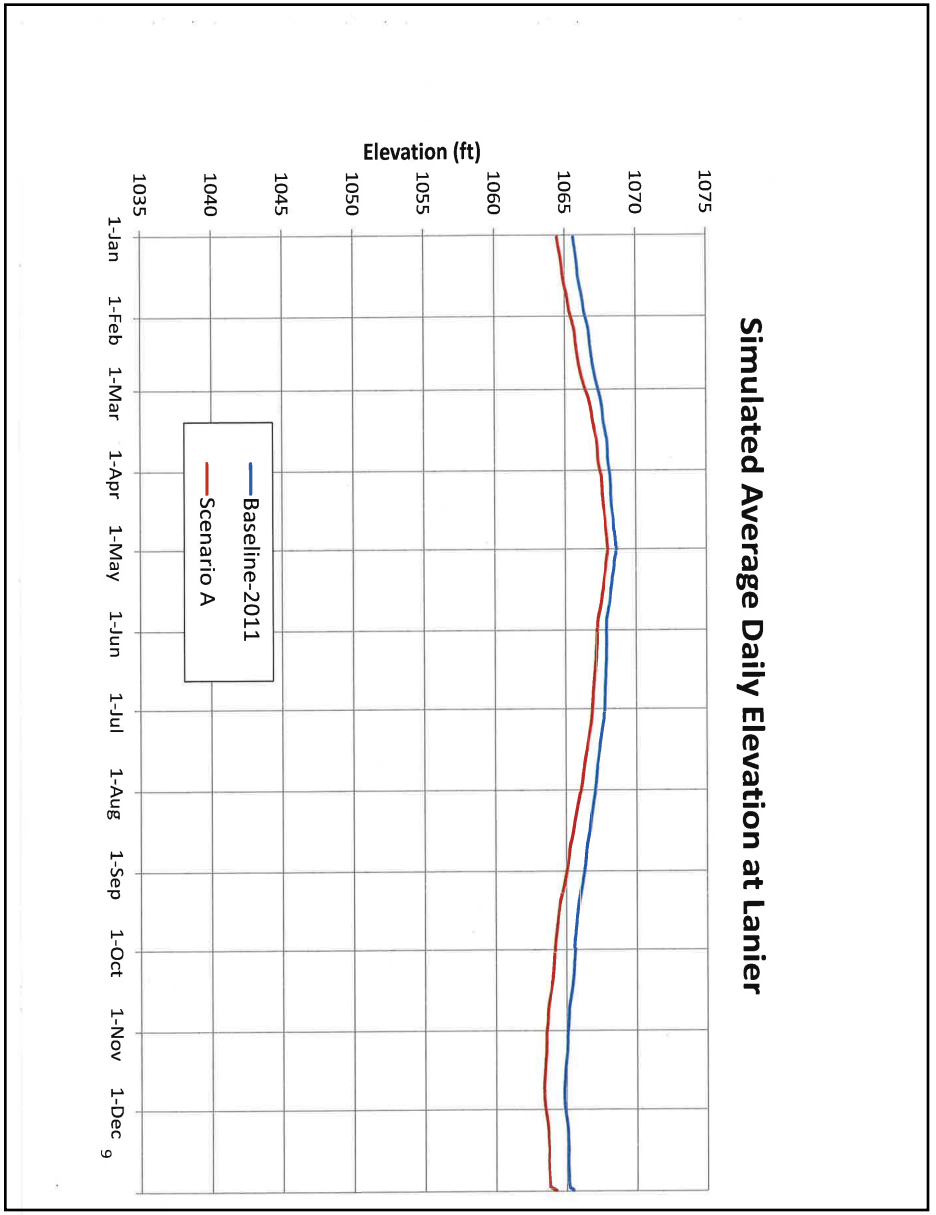

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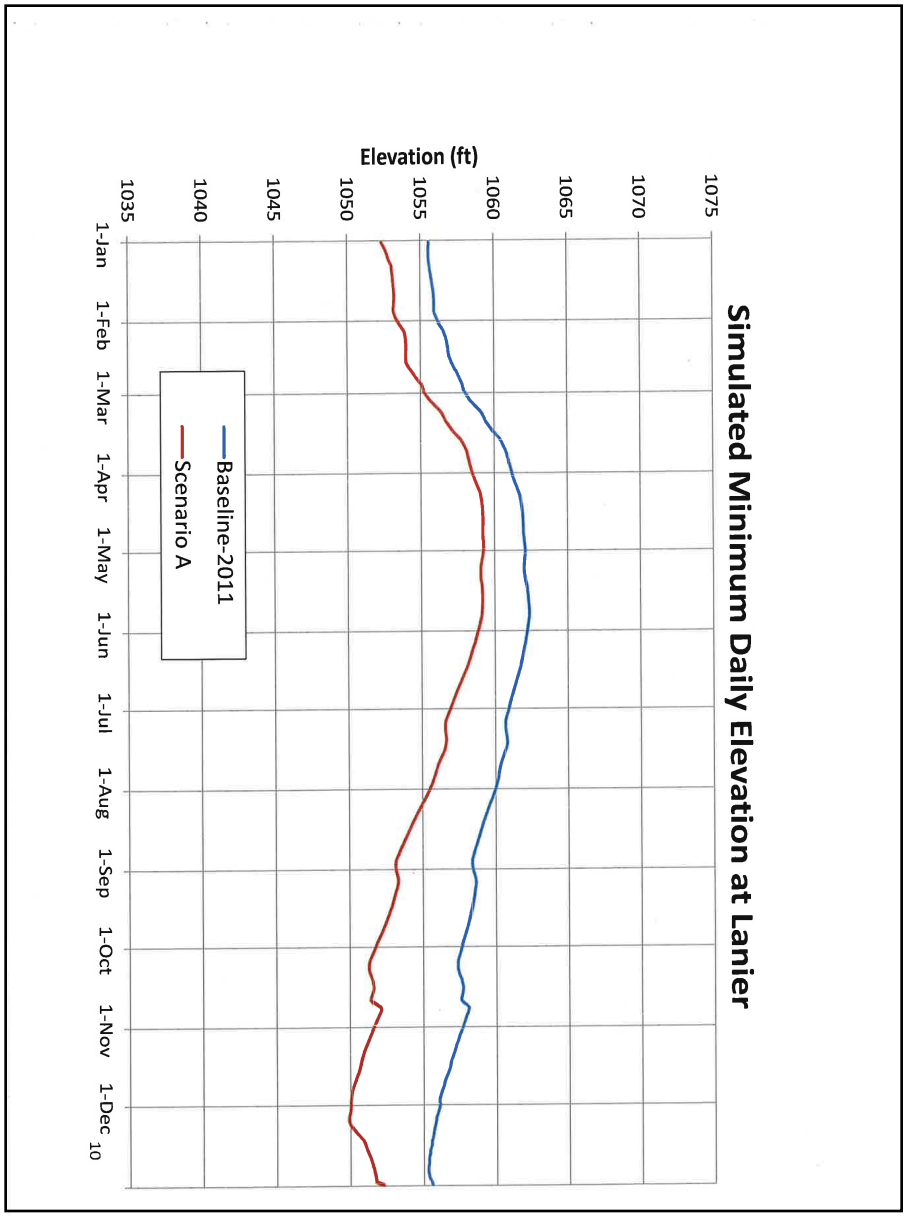

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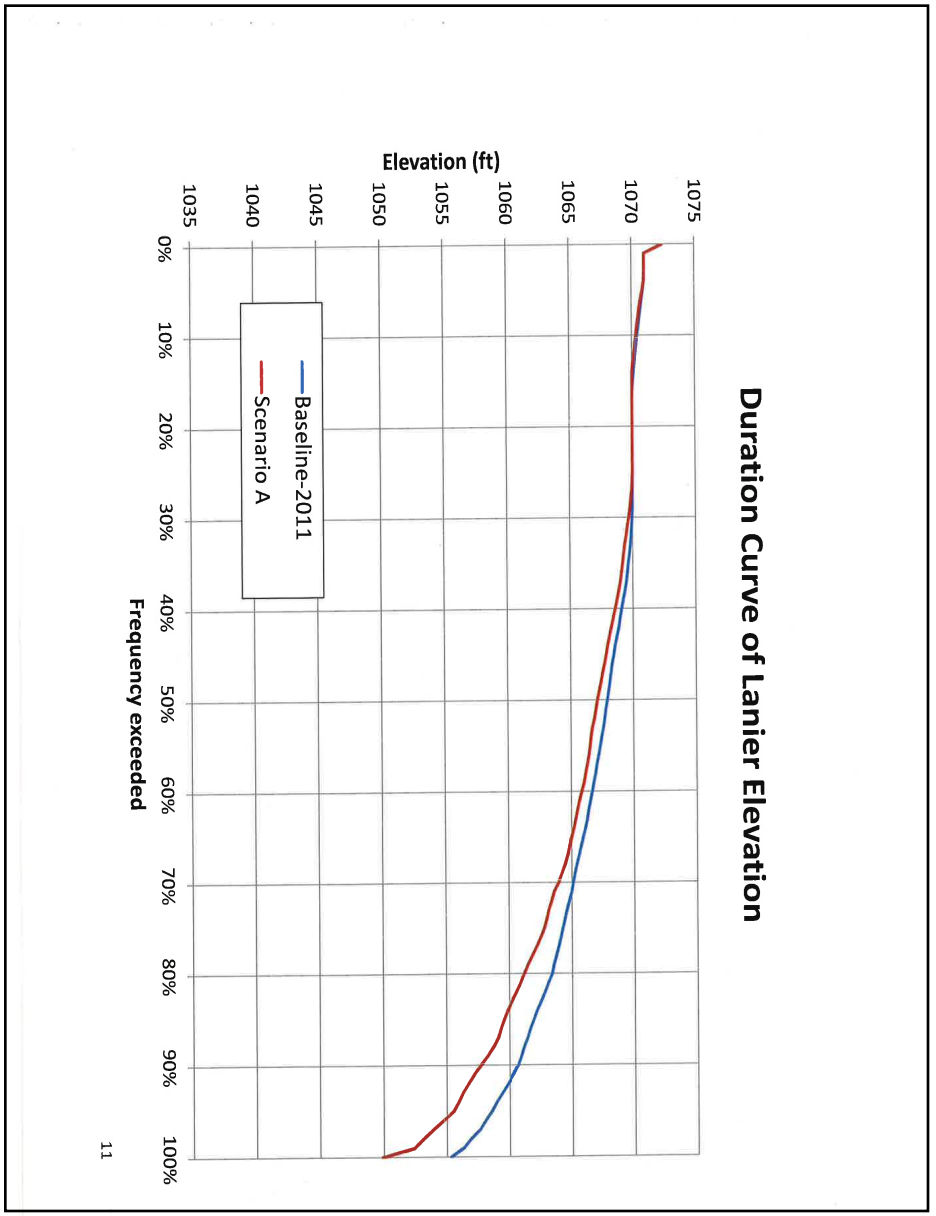

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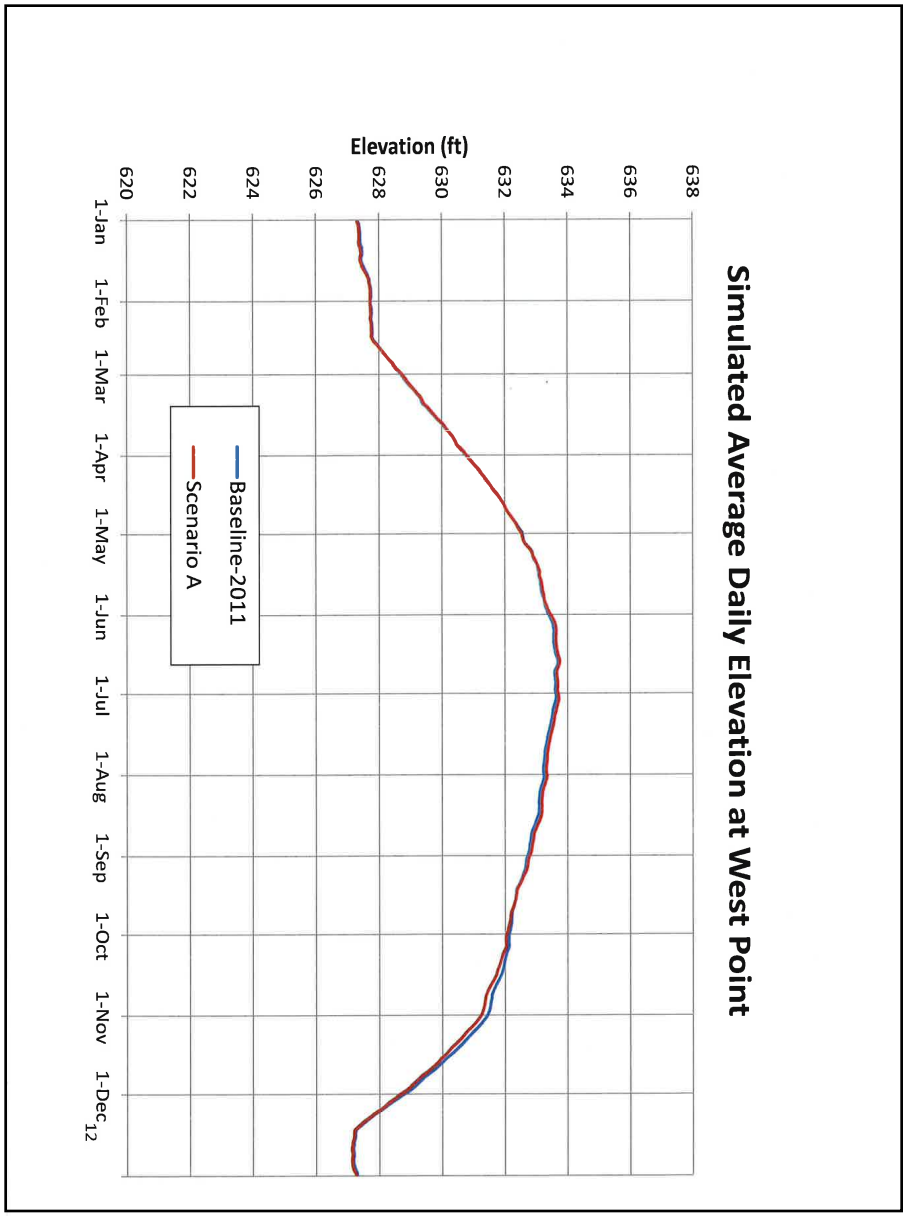

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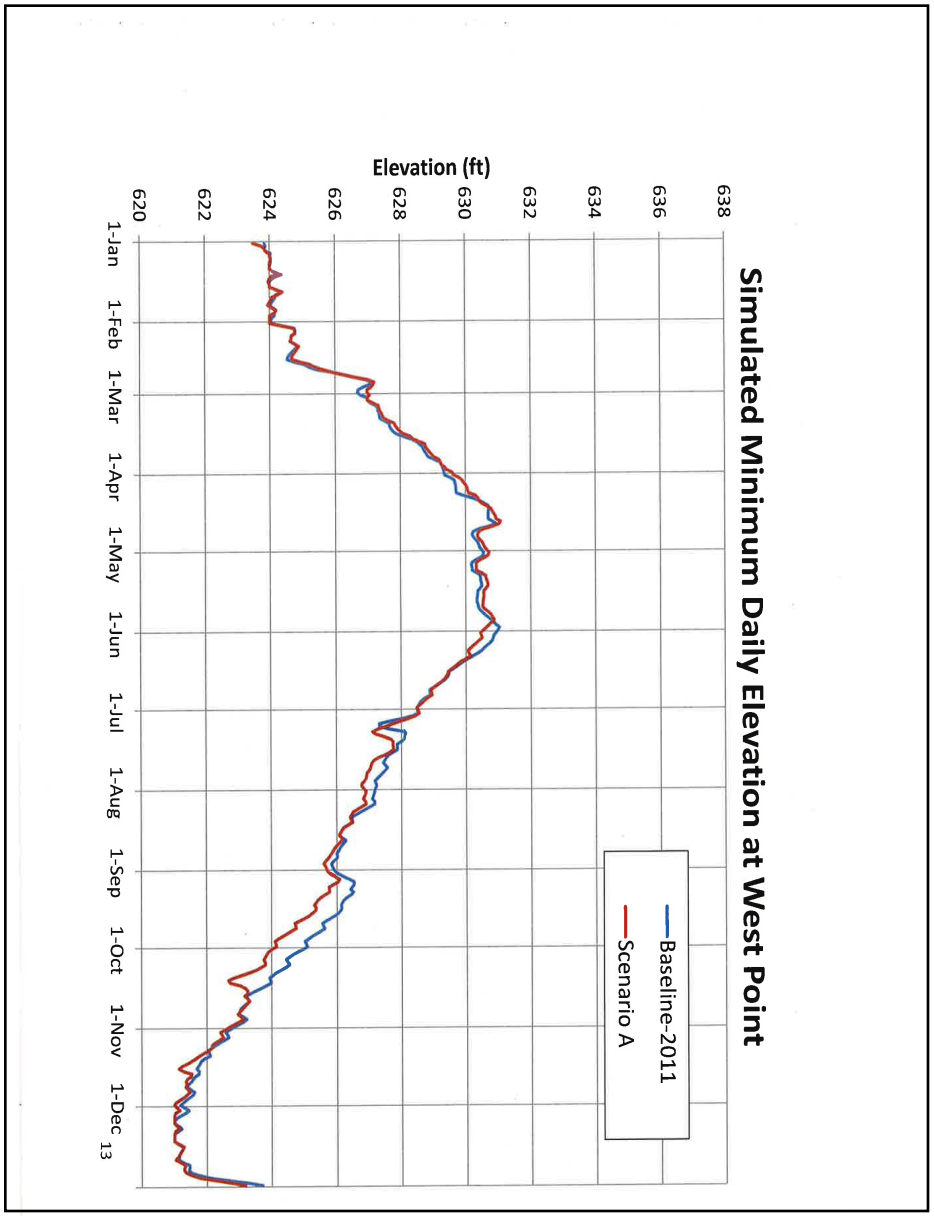

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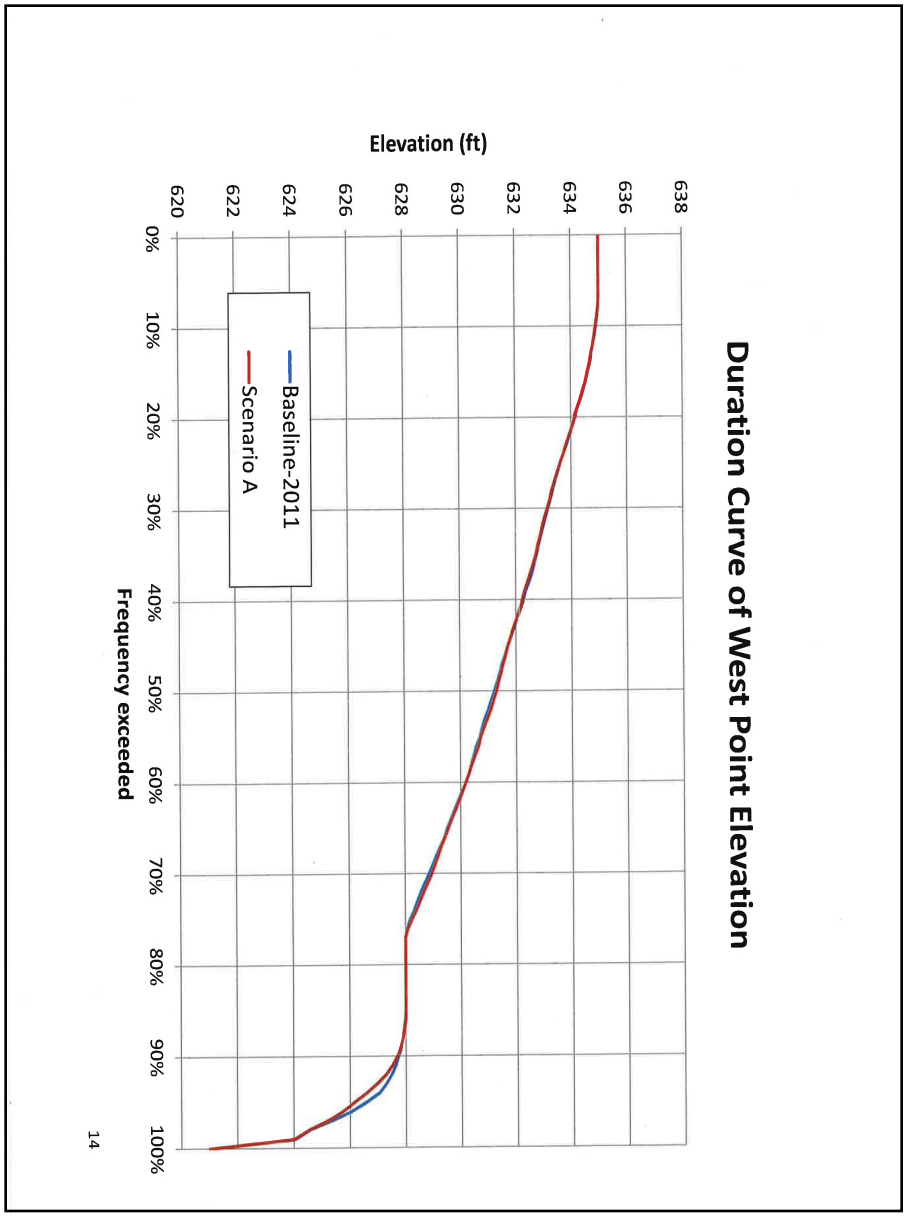

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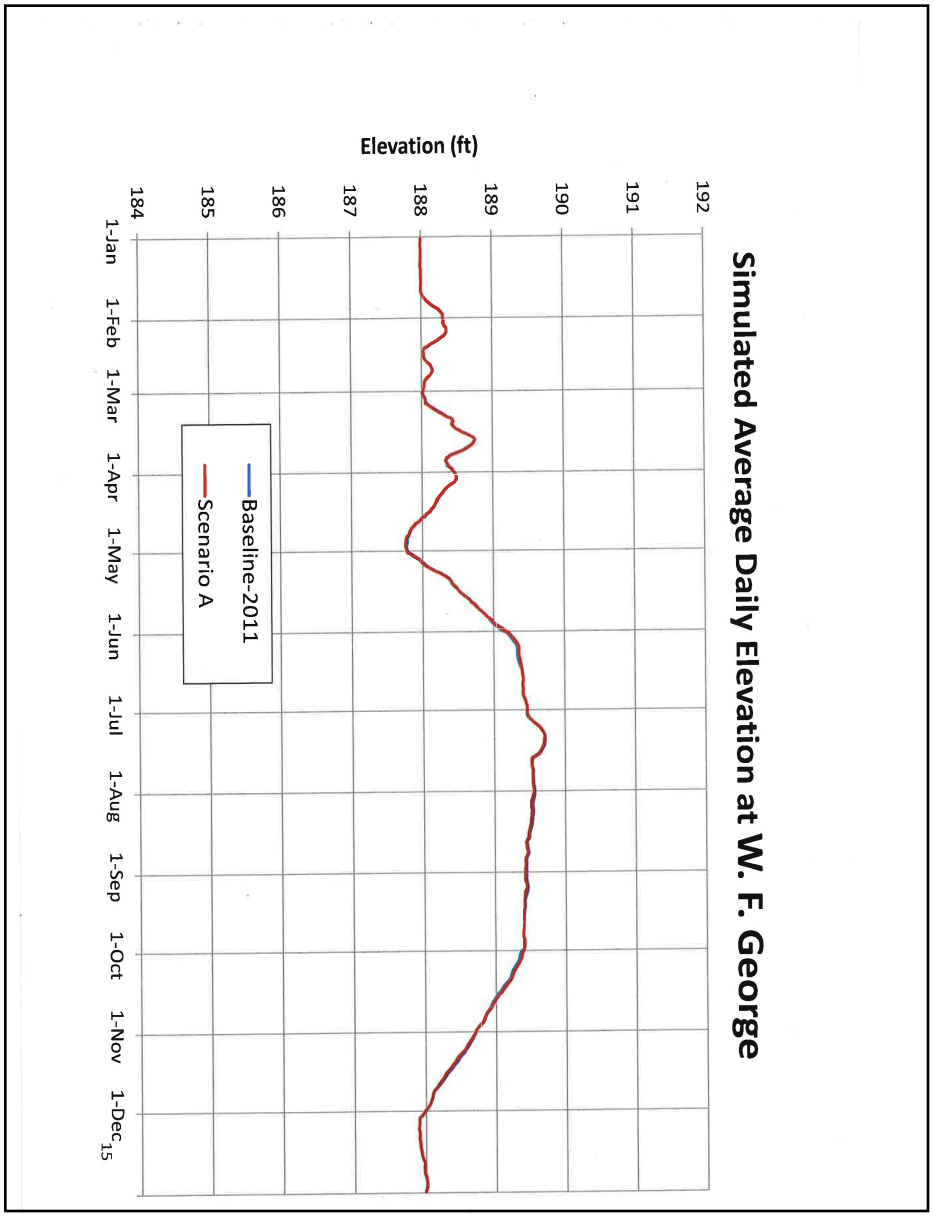

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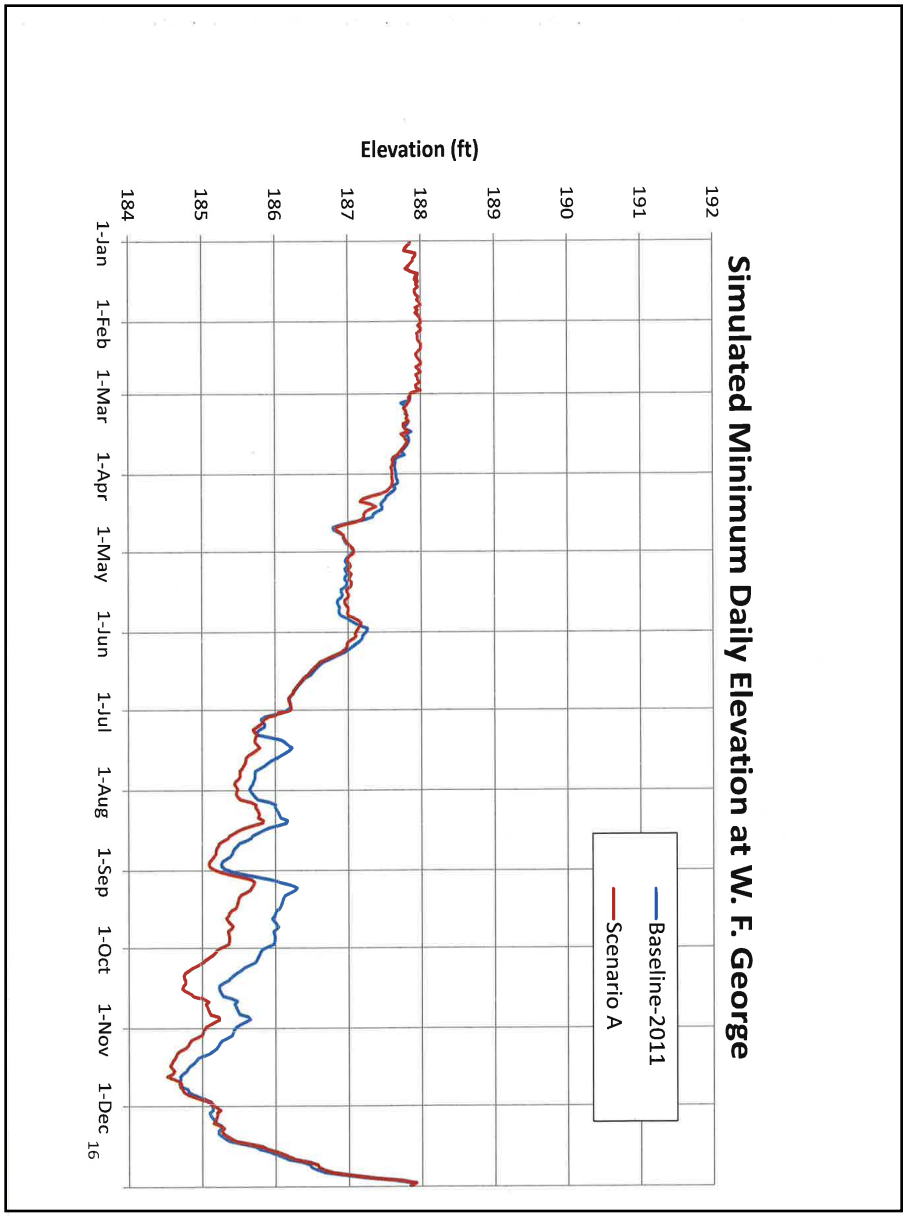

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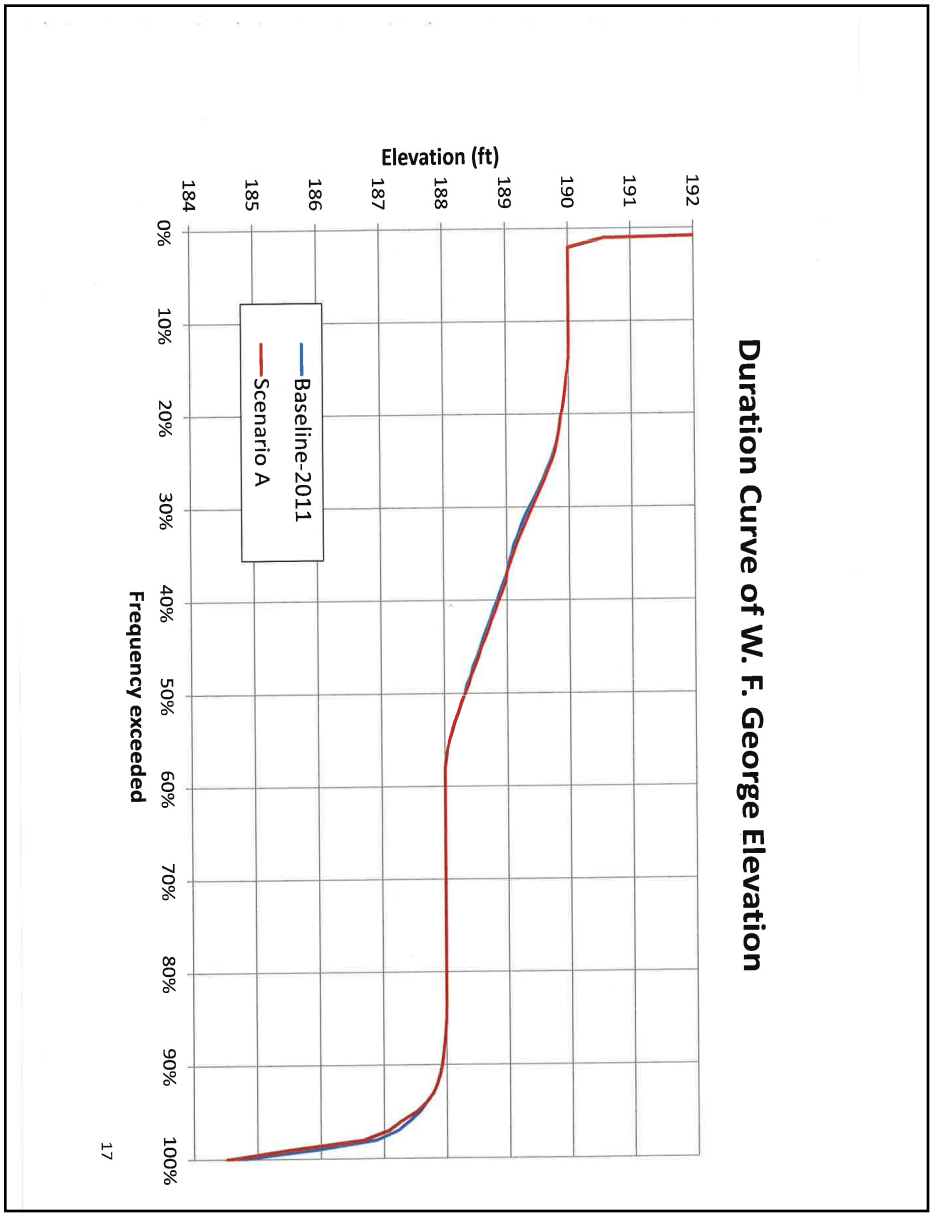

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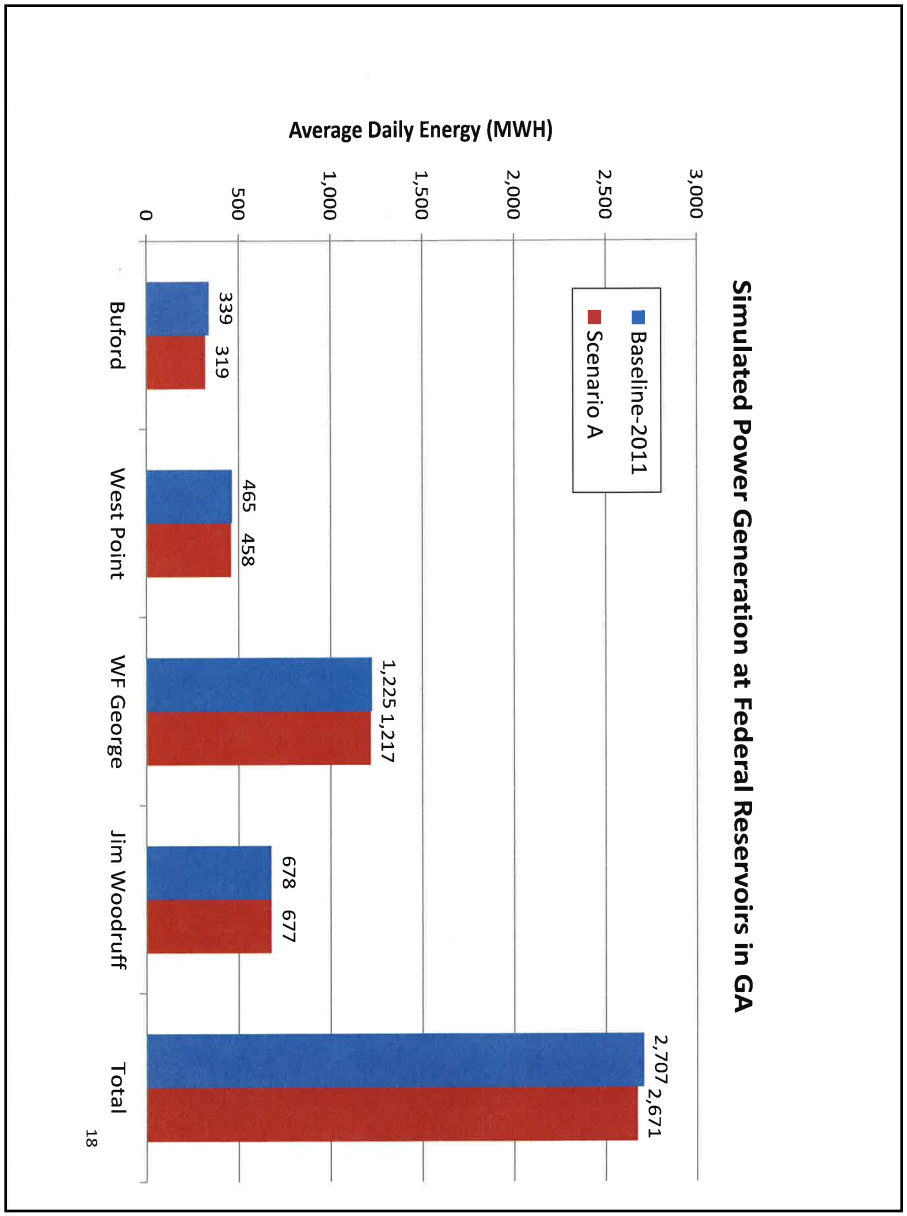

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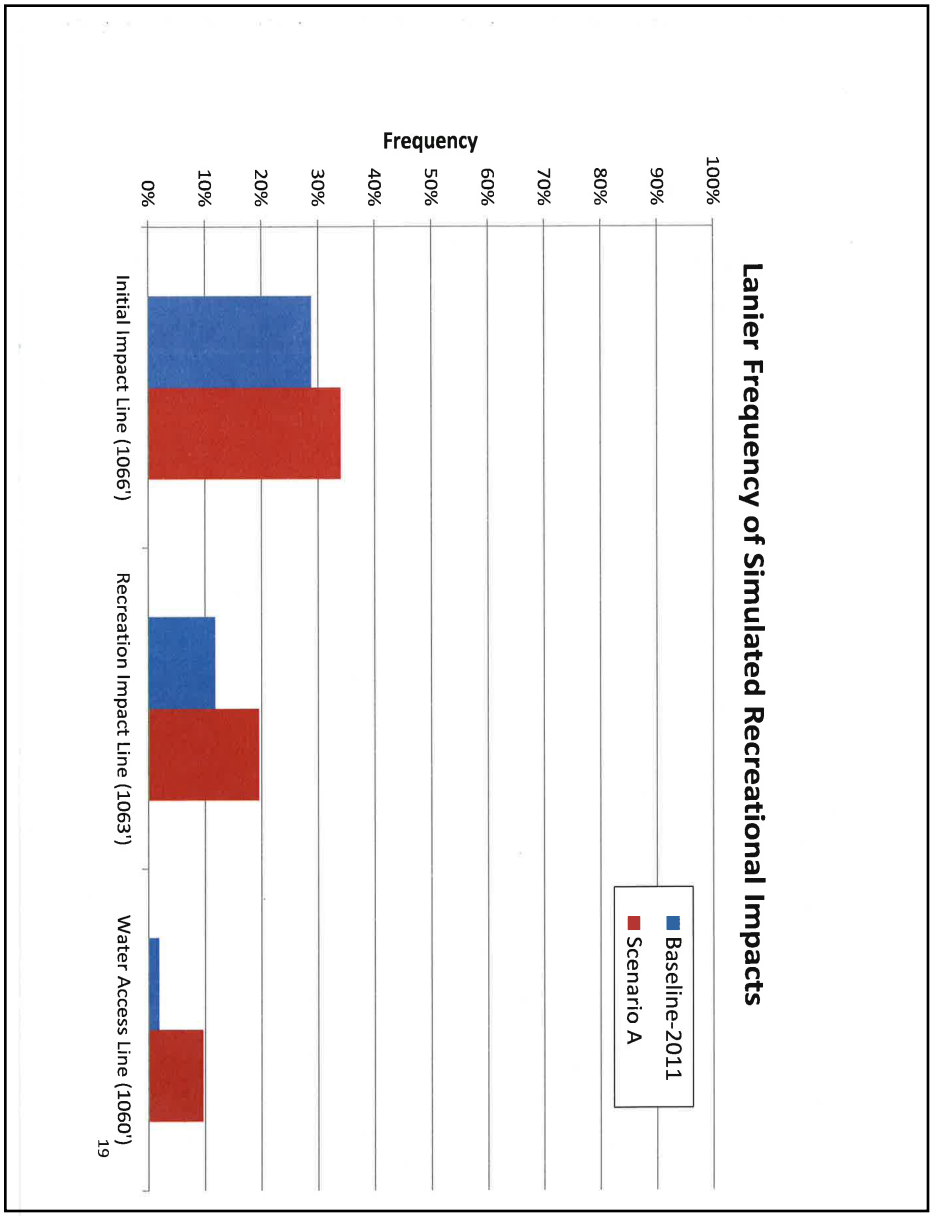

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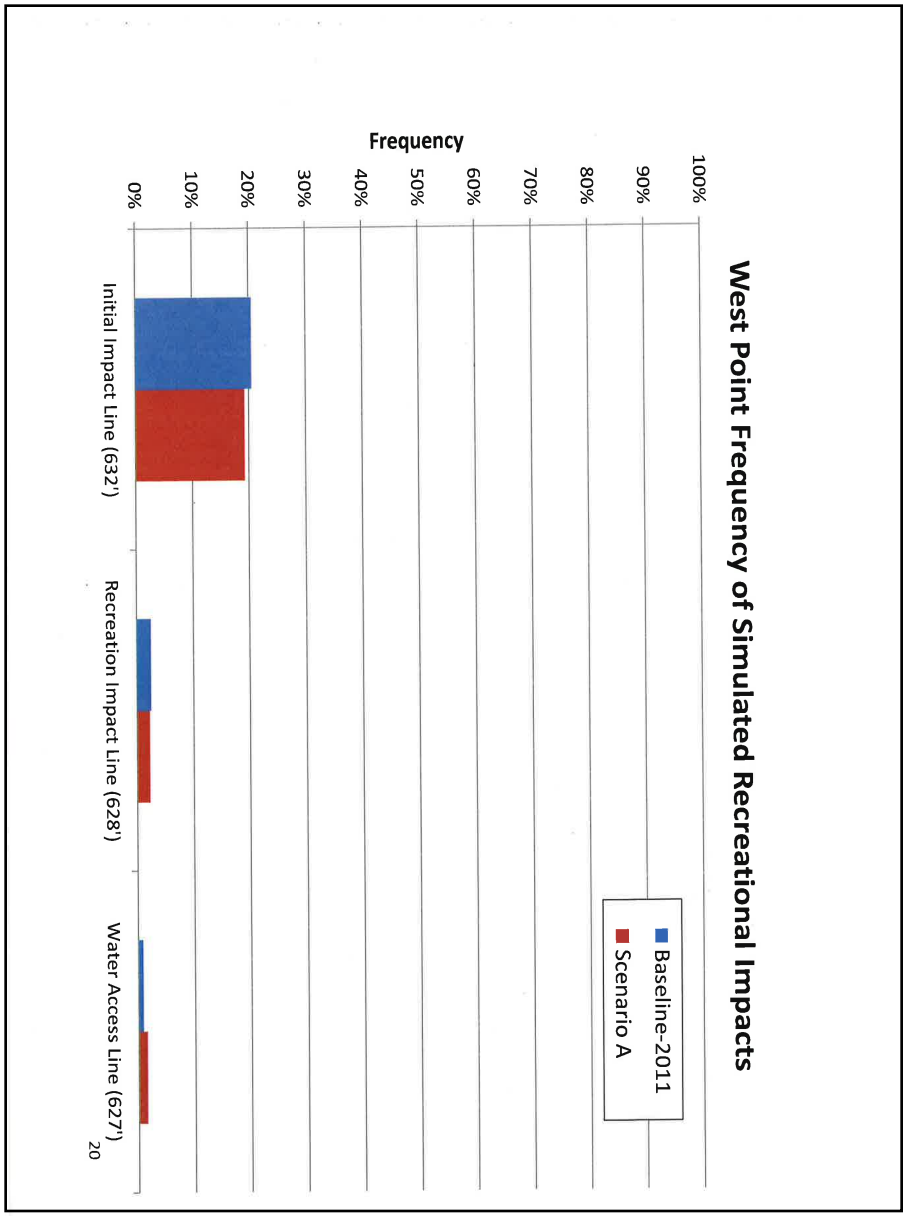

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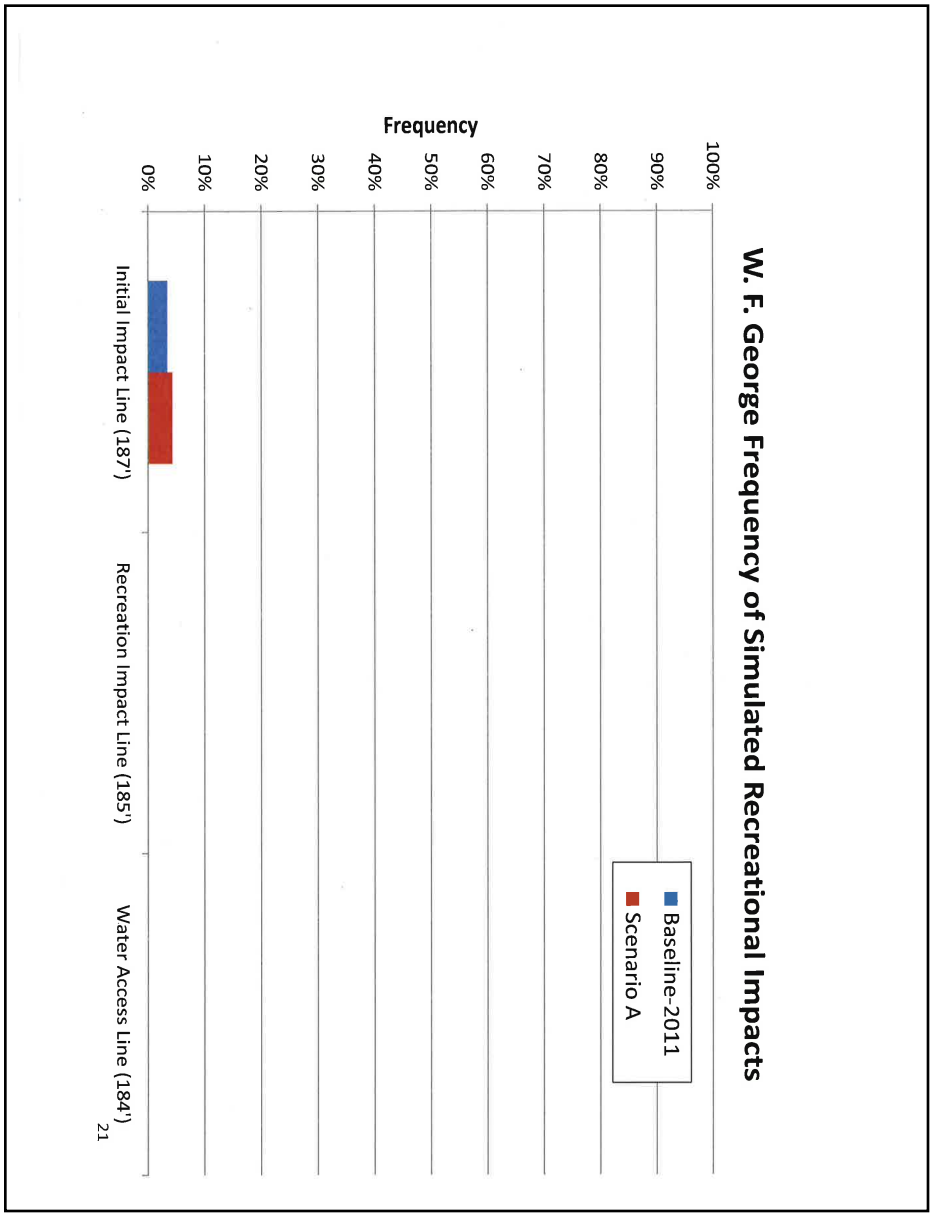

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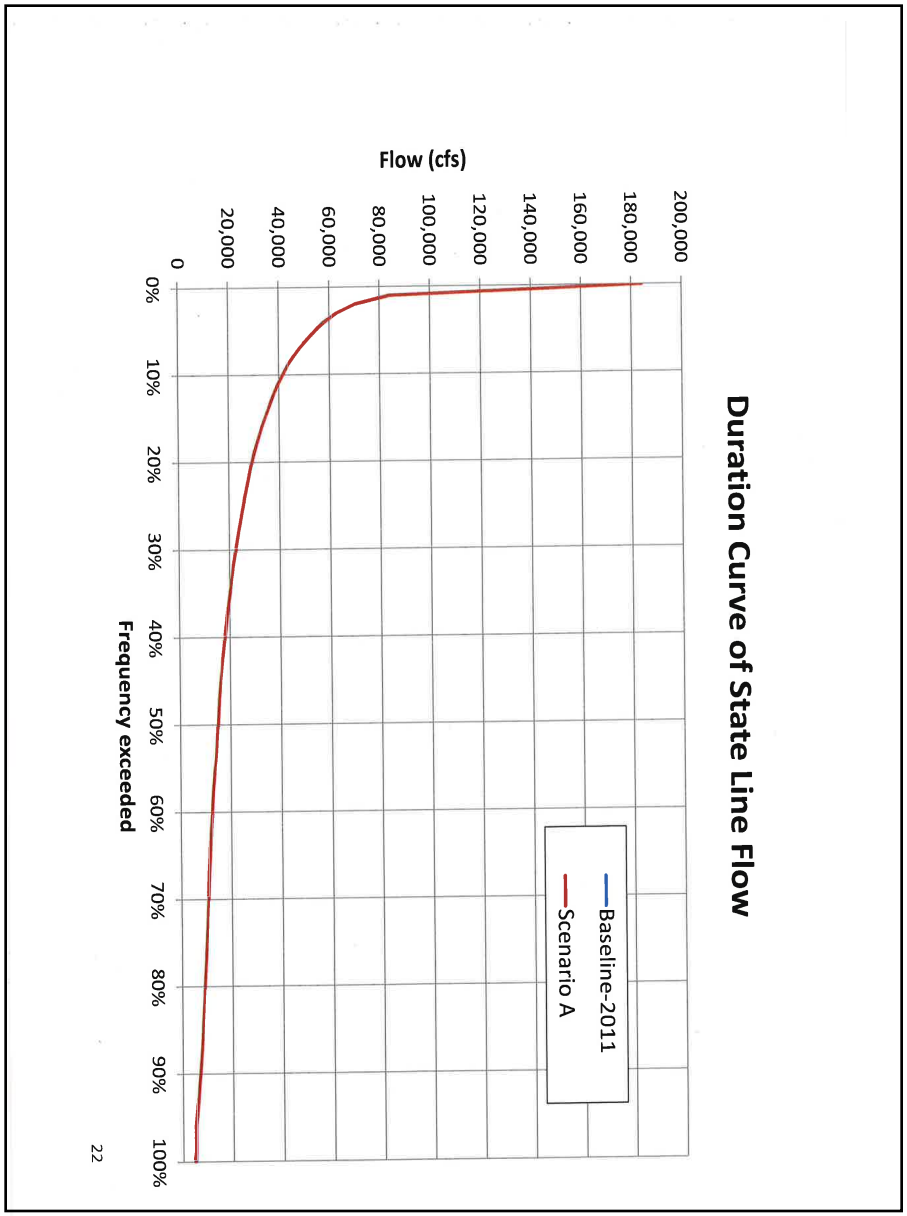

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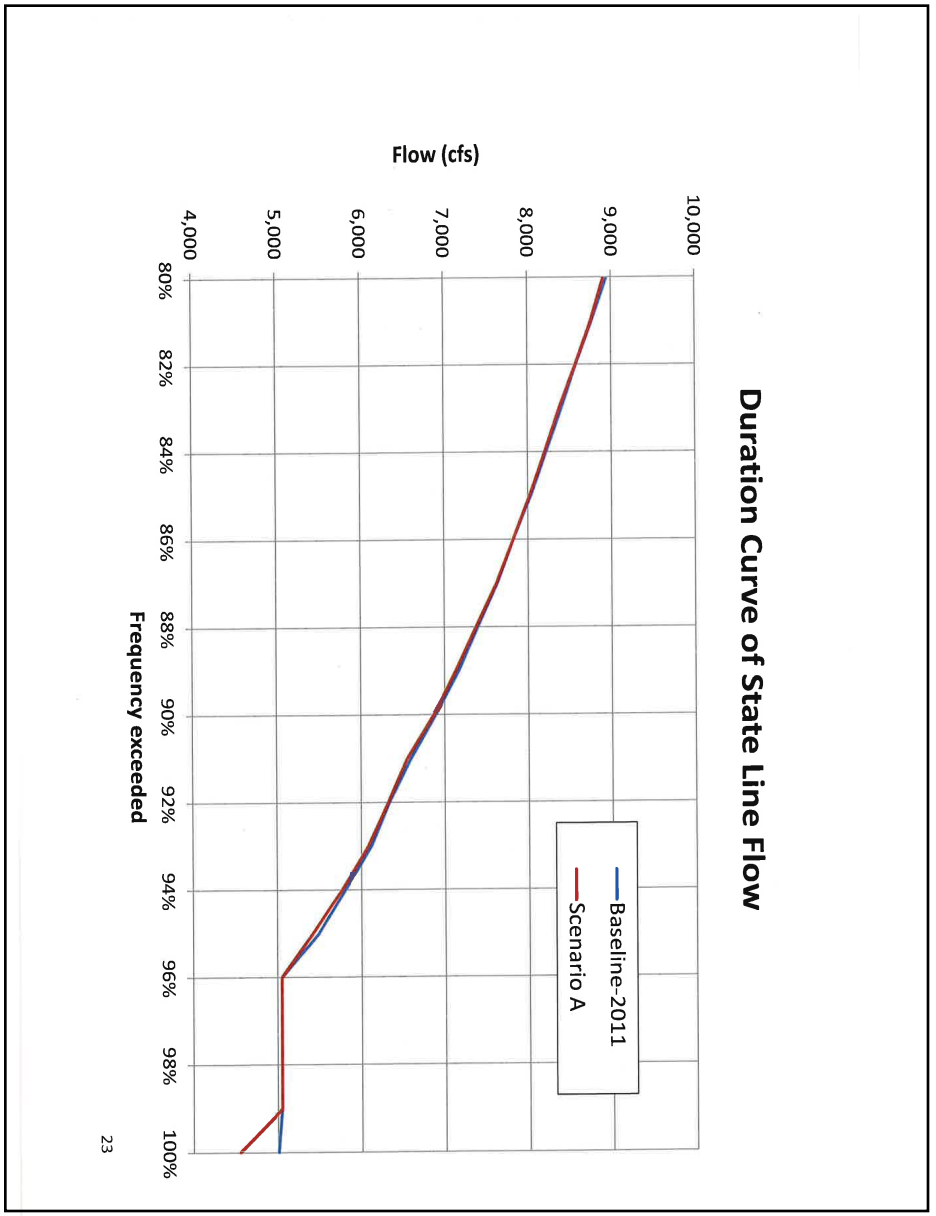

Deal, Nathan

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Scenario B vs. Baseline

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Deal, Nathan

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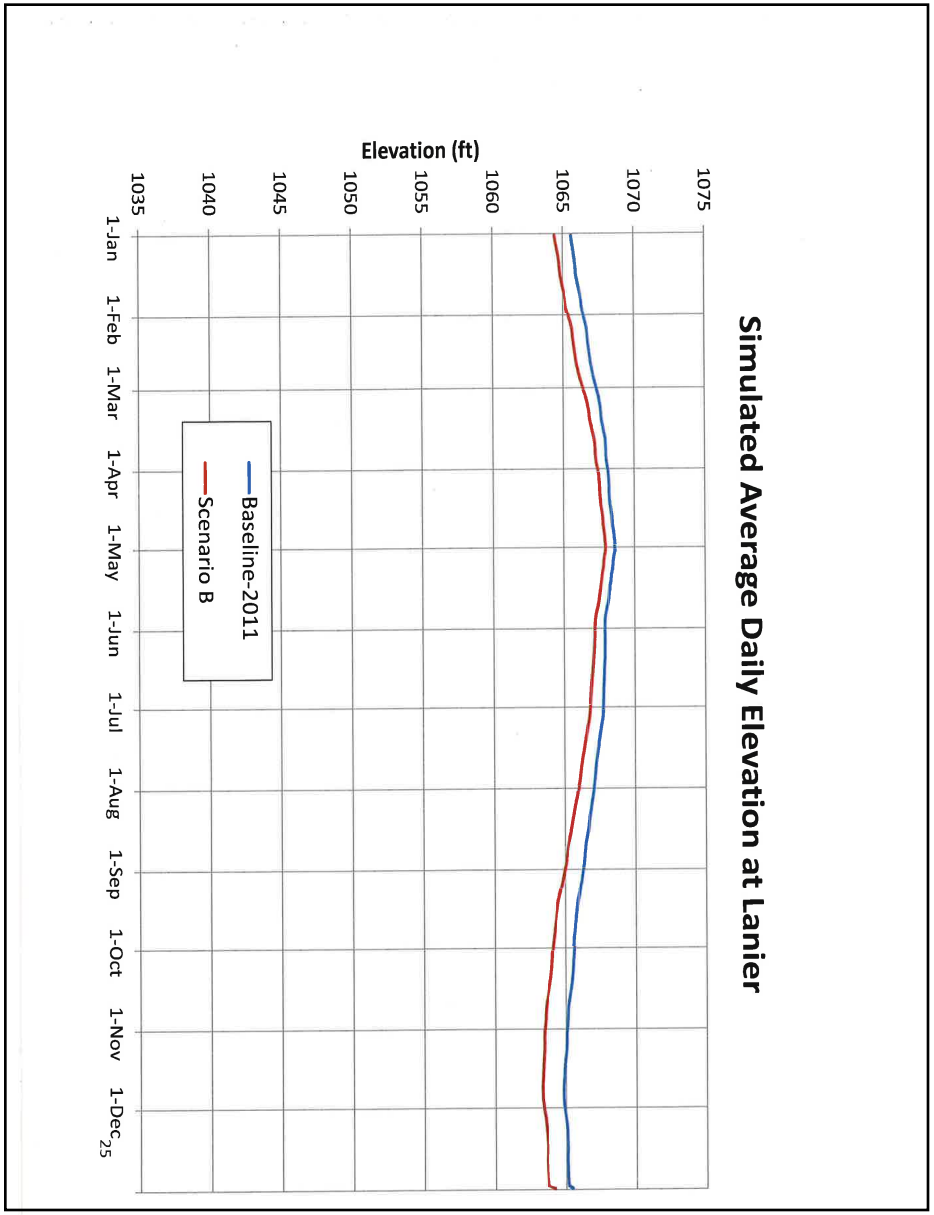

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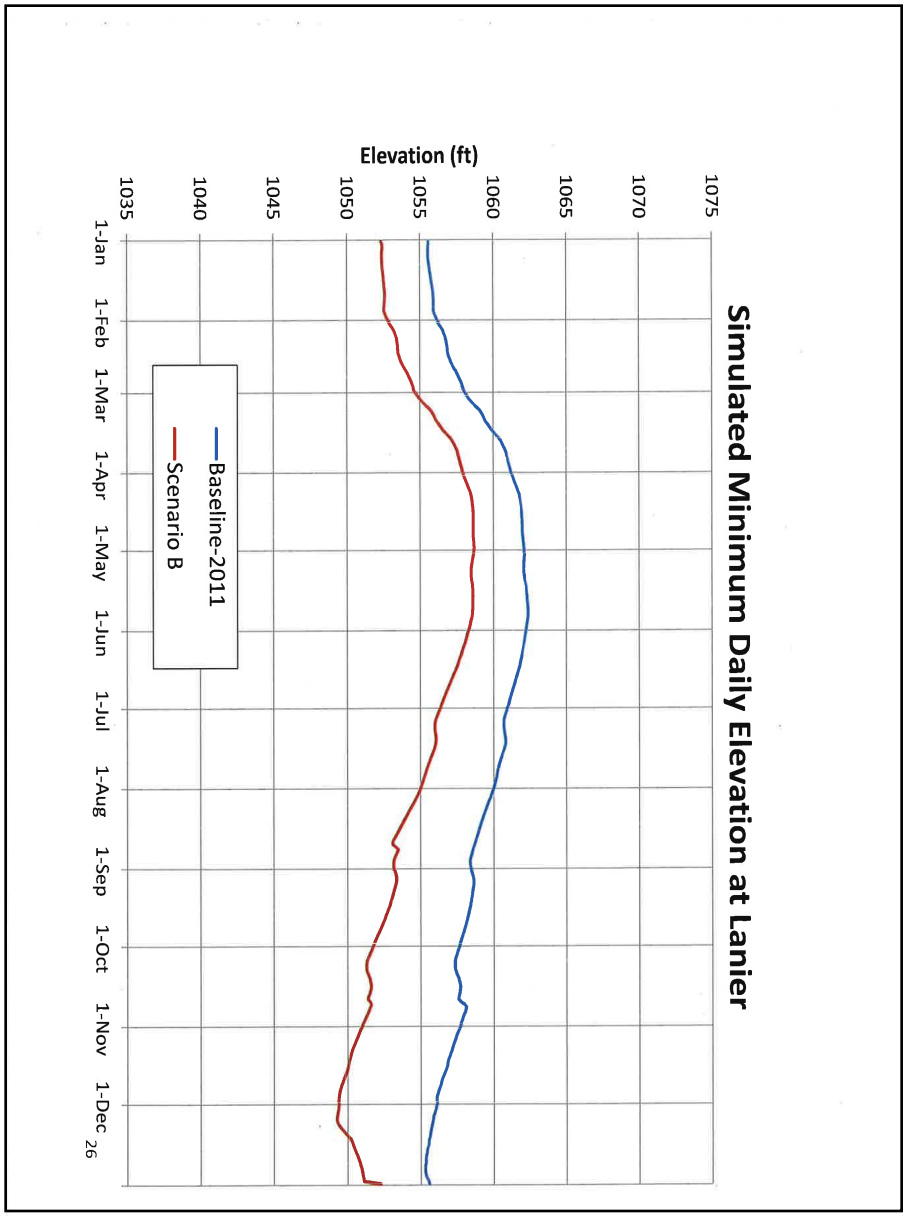

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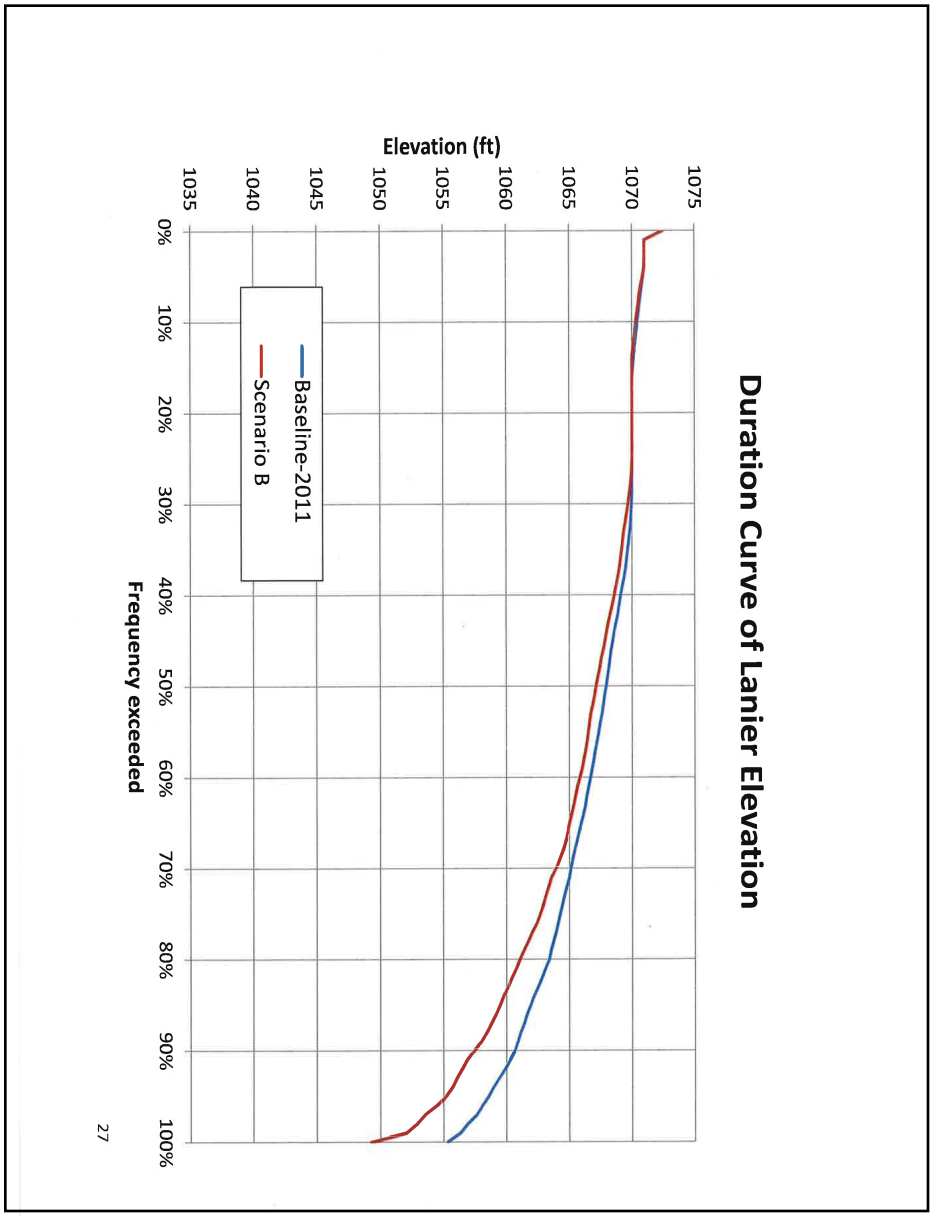

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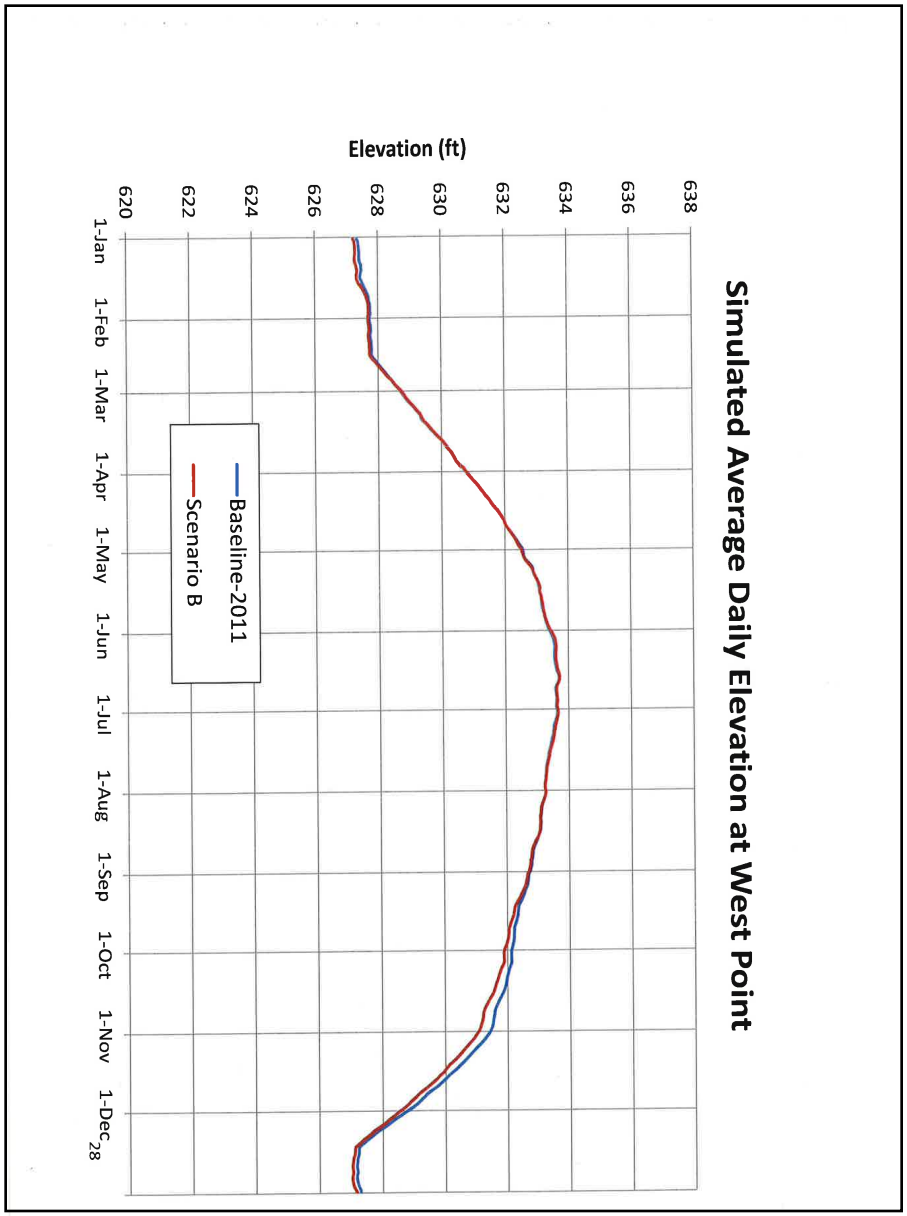

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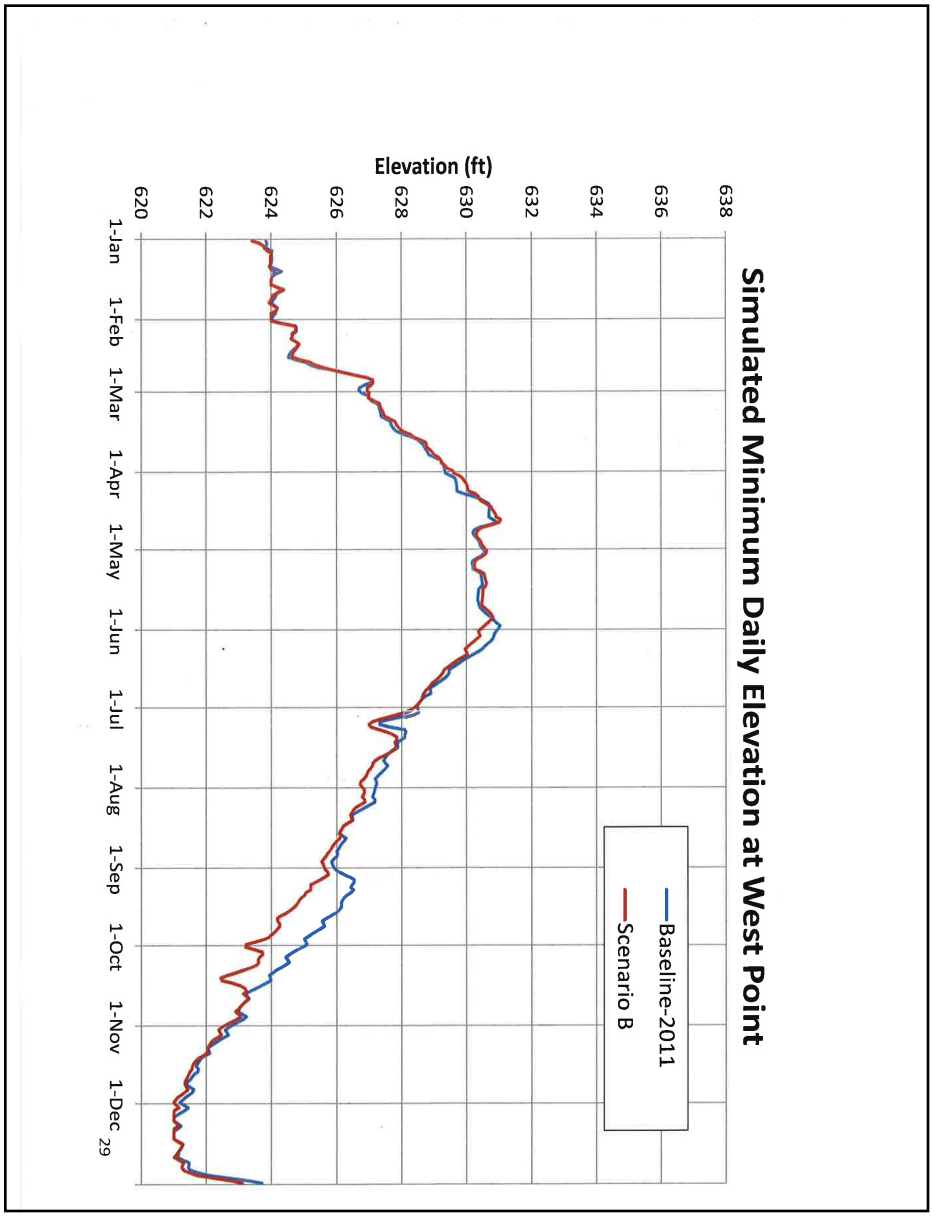

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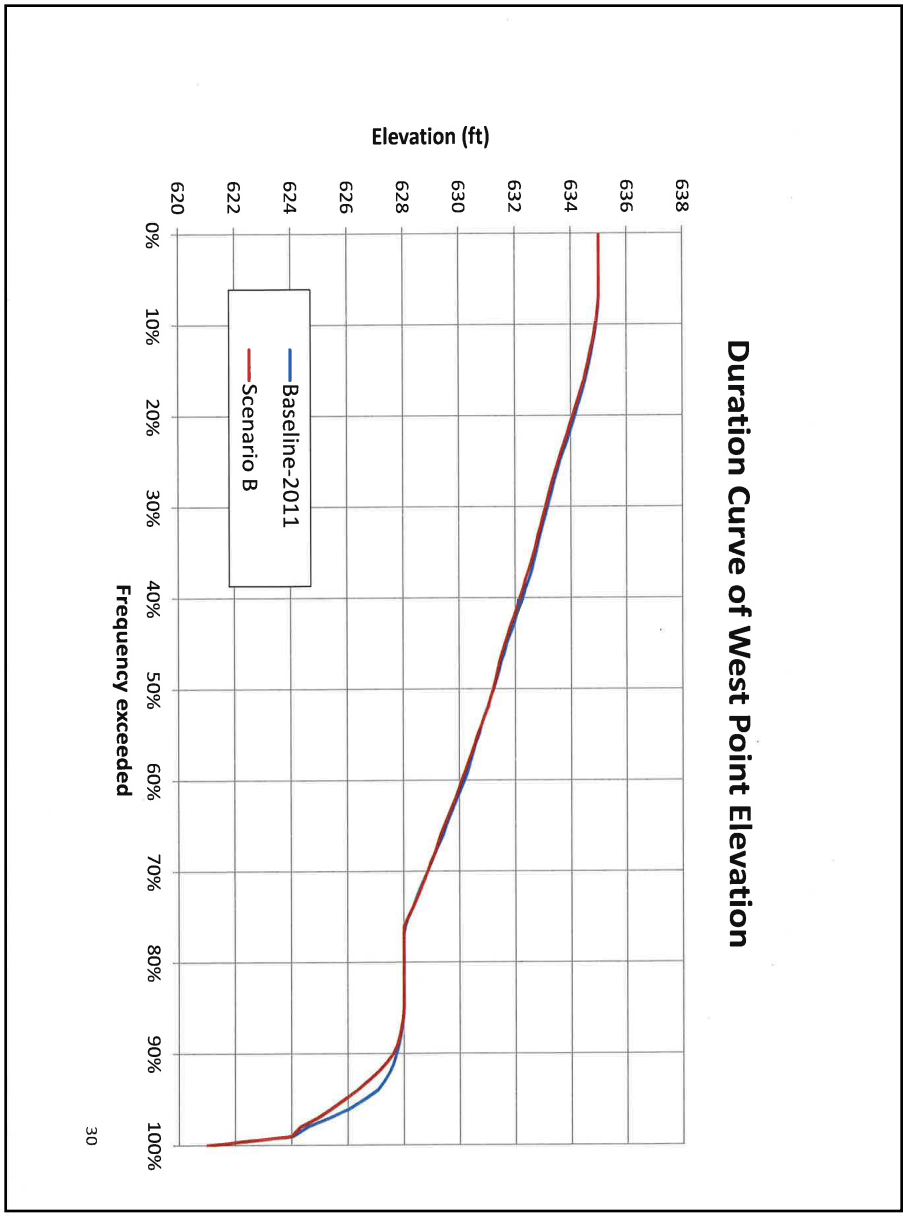

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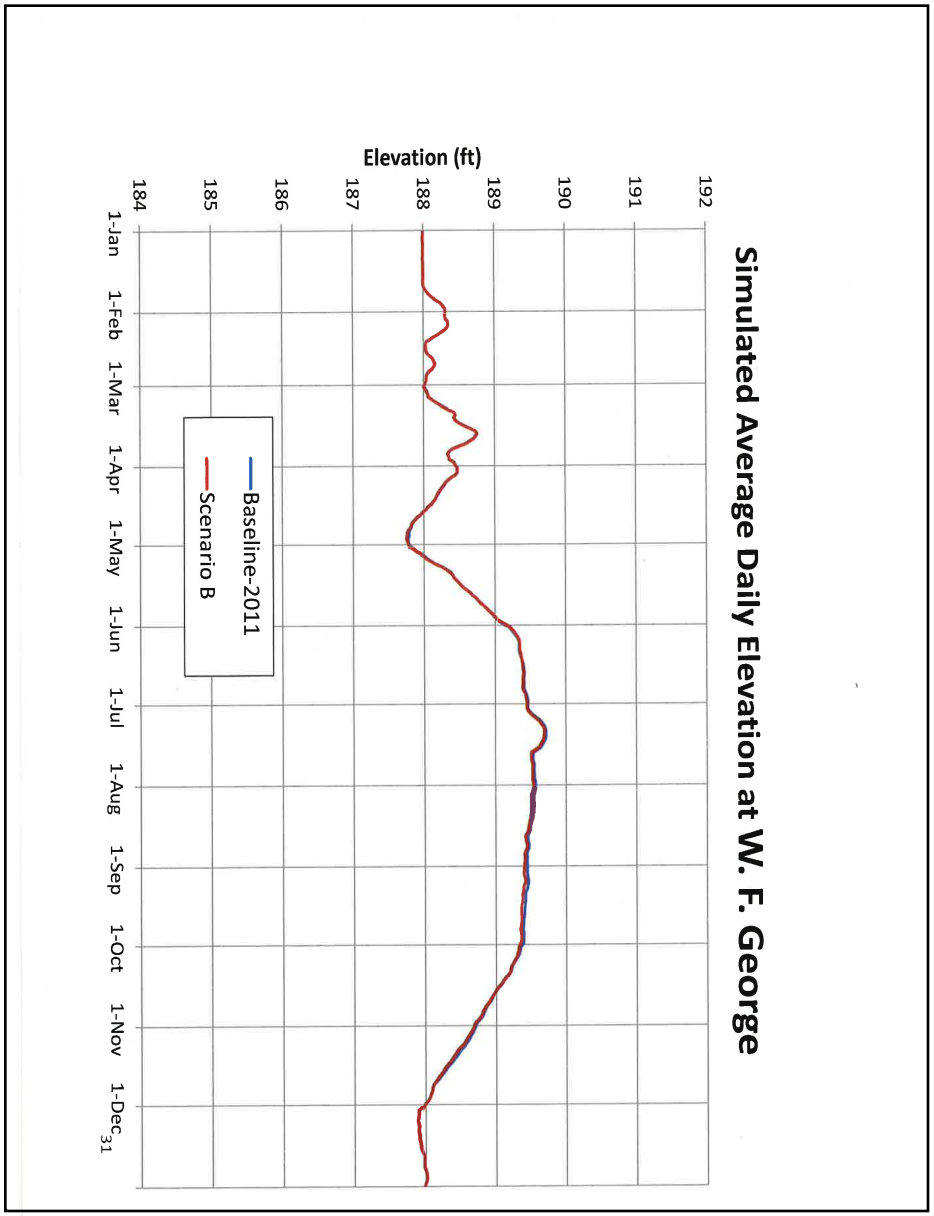

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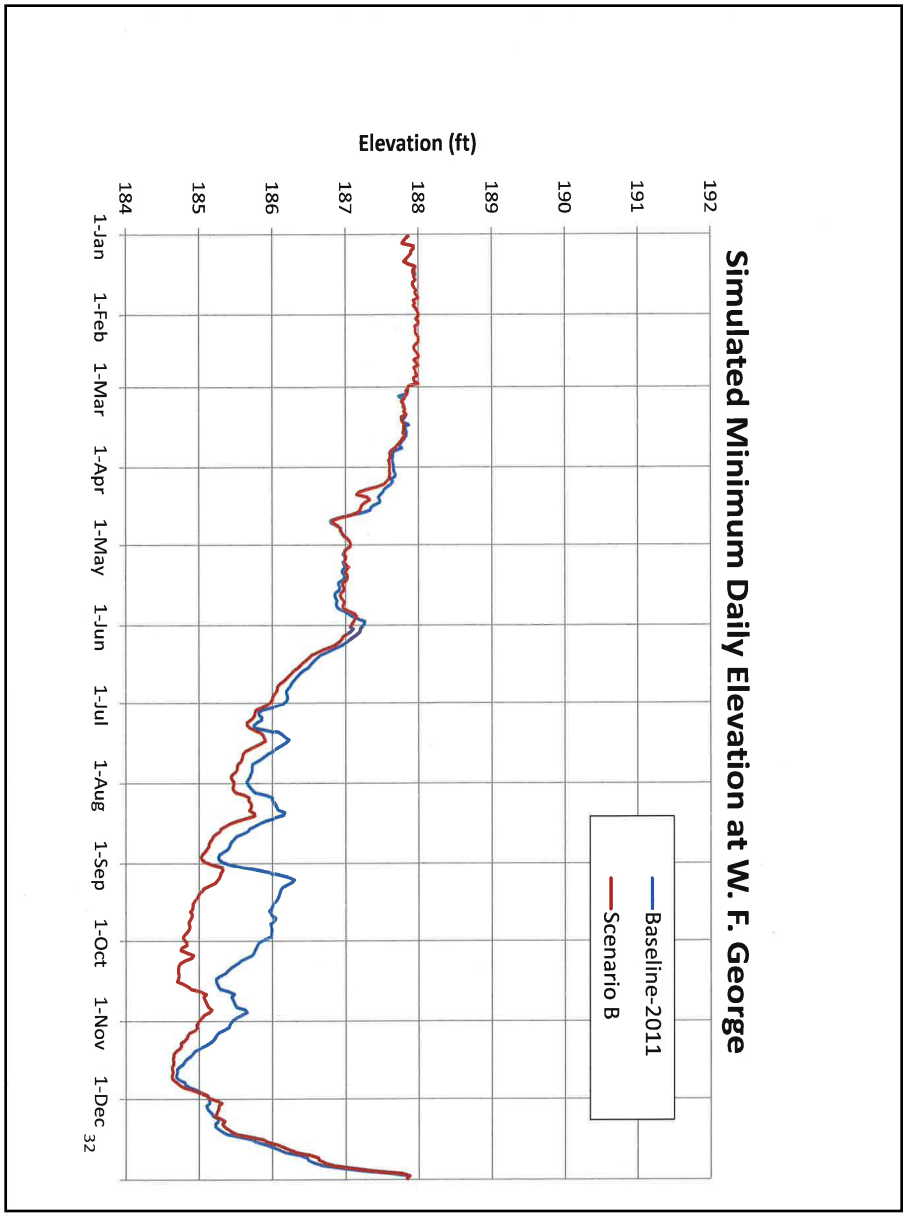

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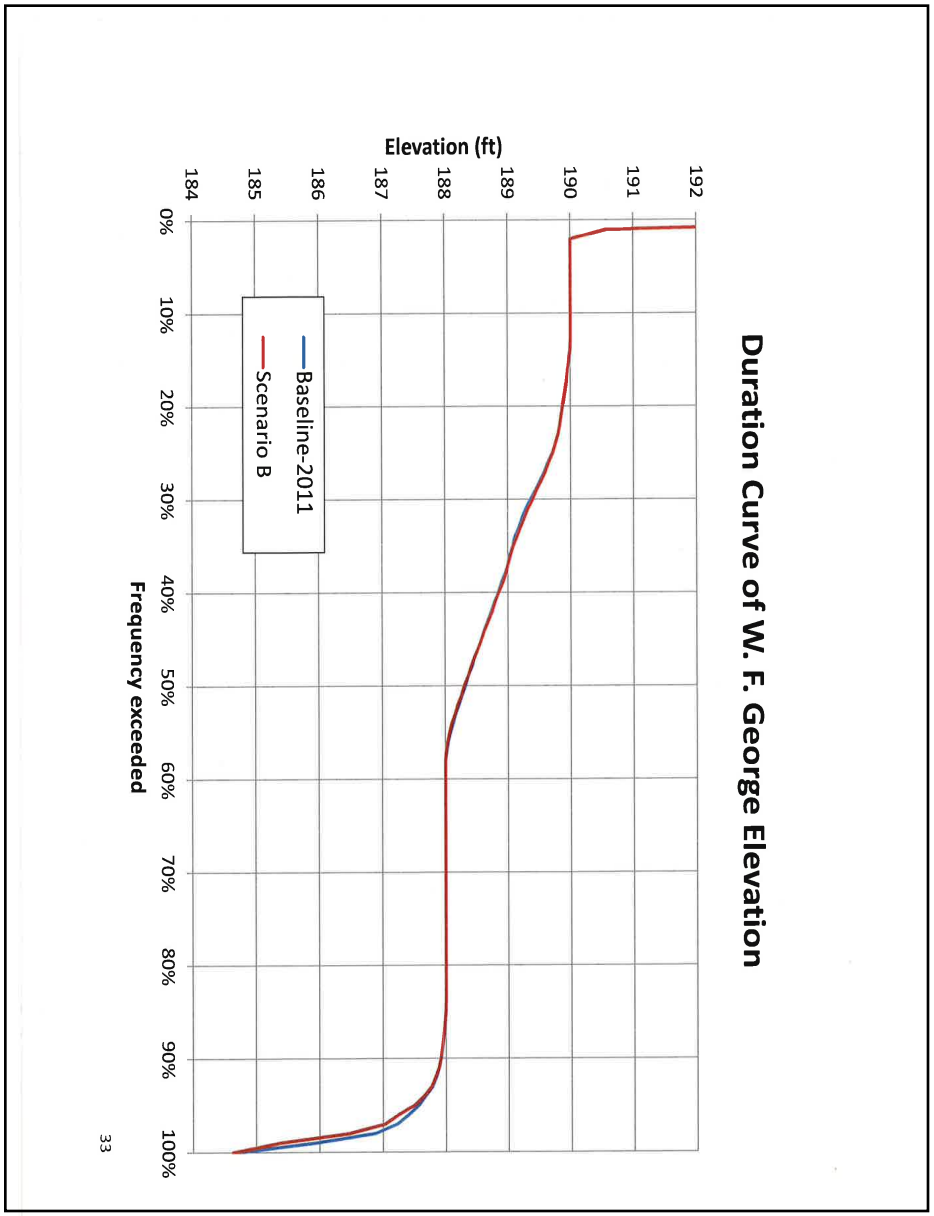

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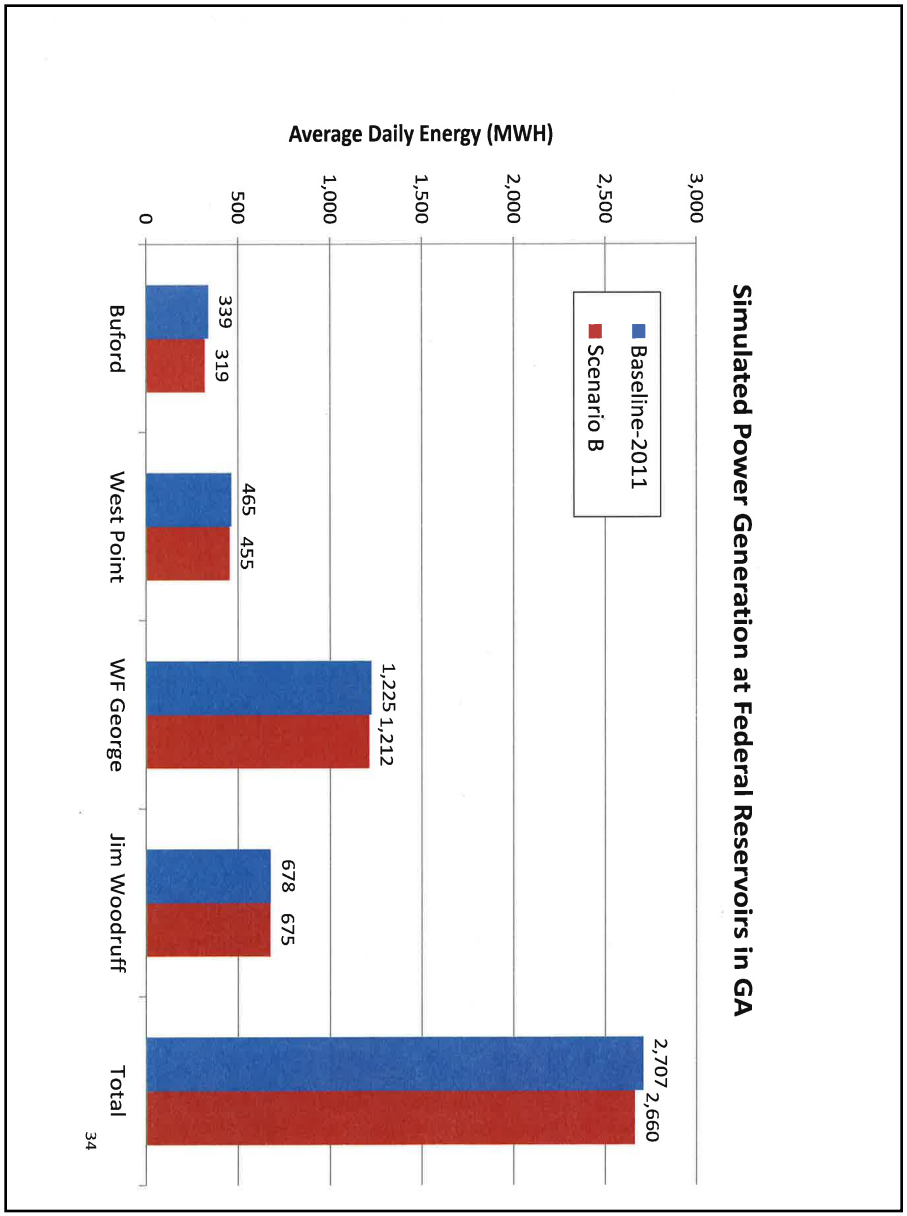

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Deal, Nathan

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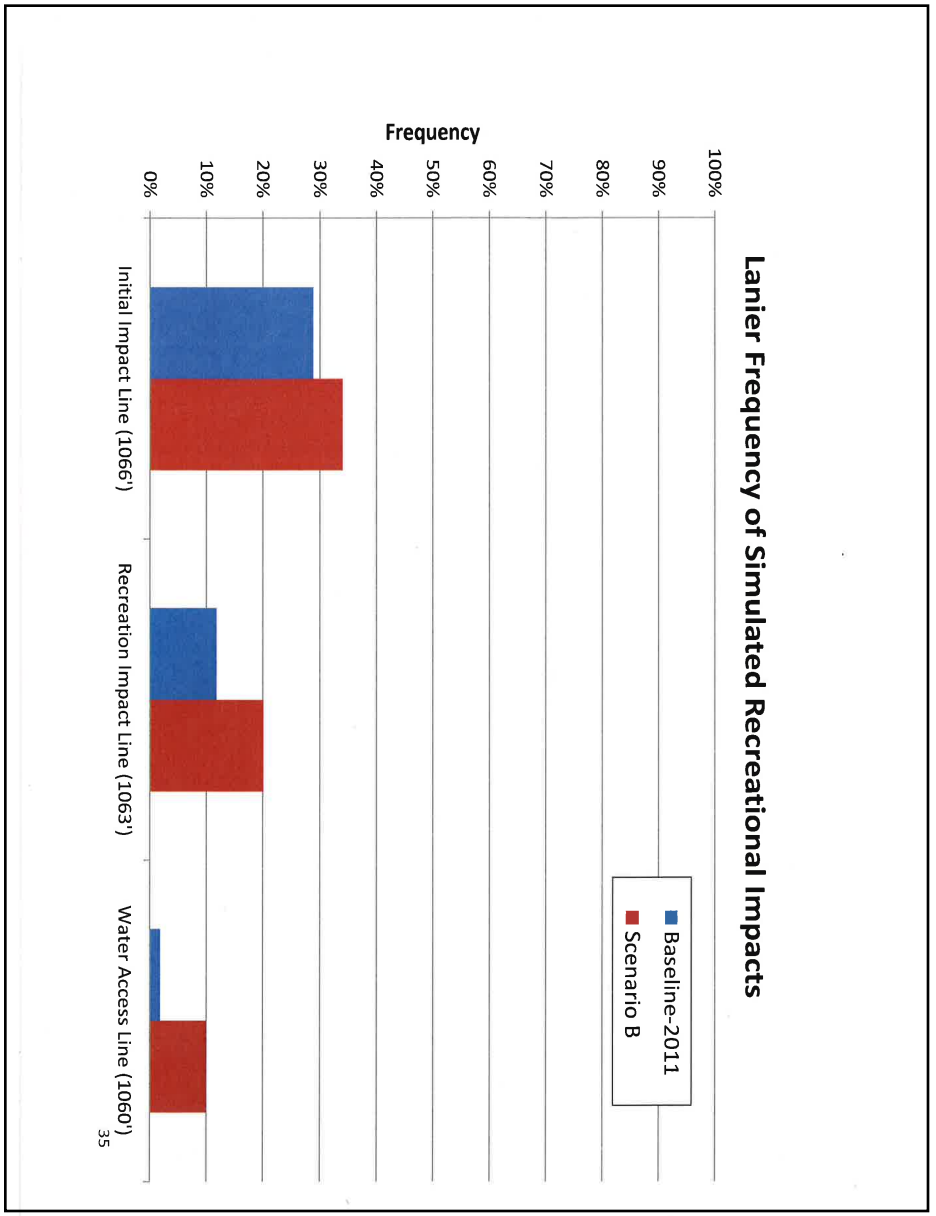

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Deal, Nathan

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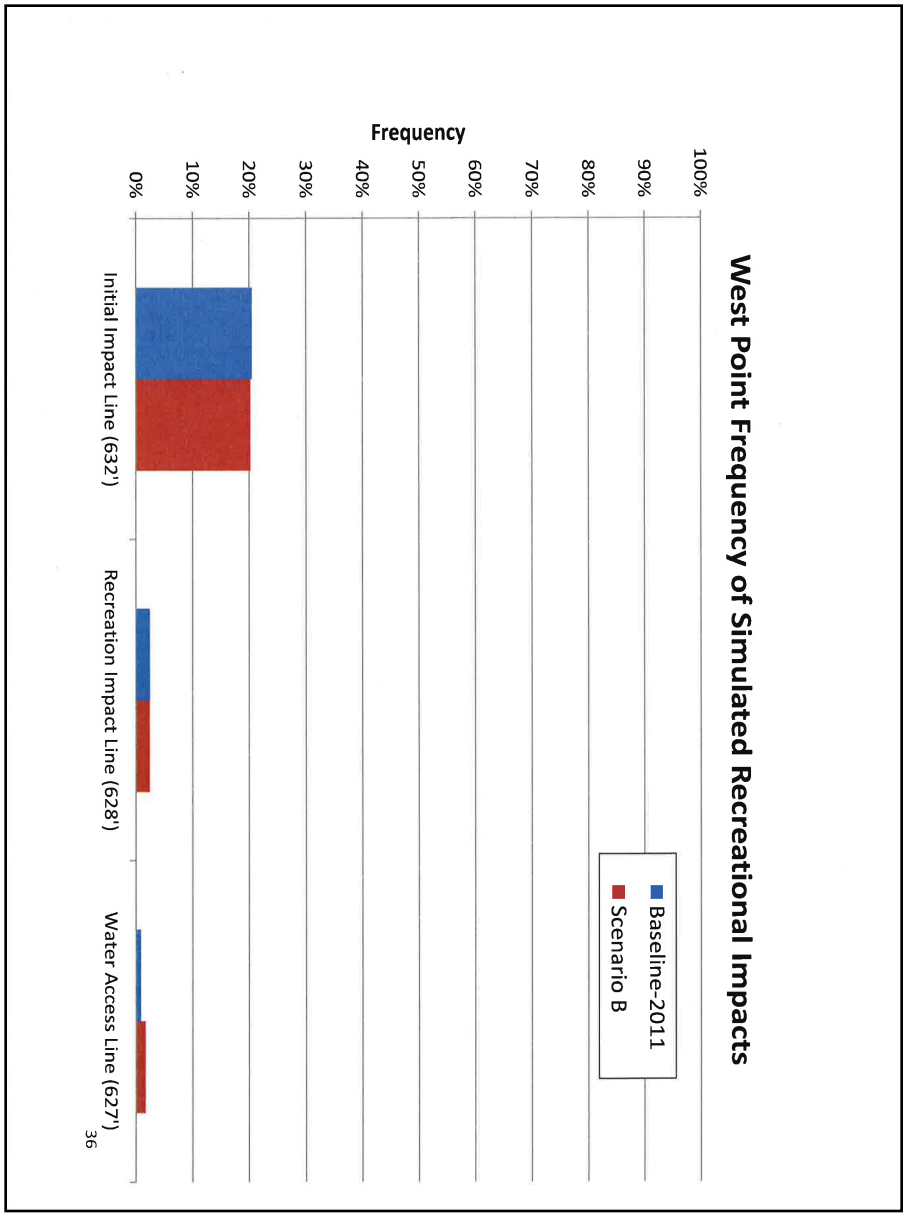

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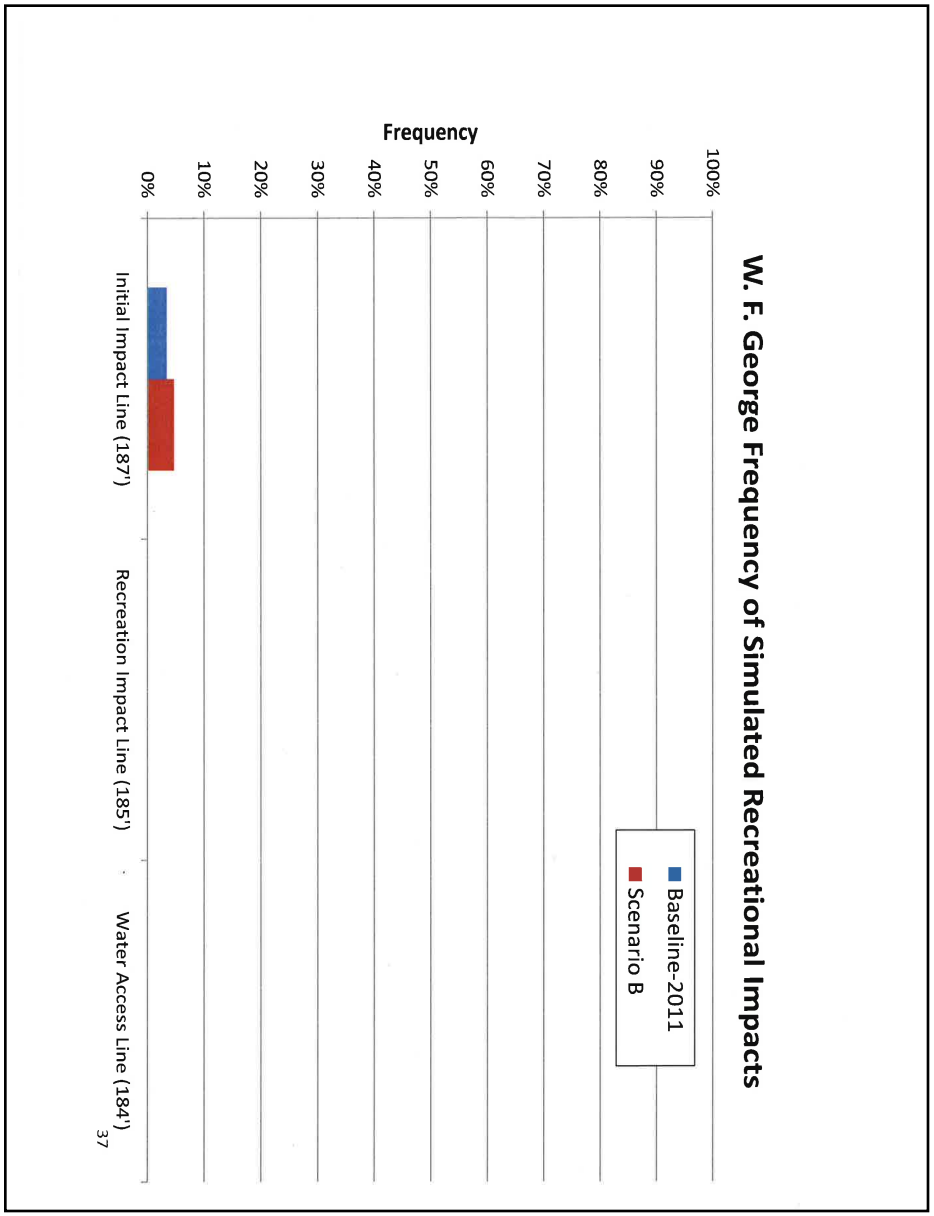

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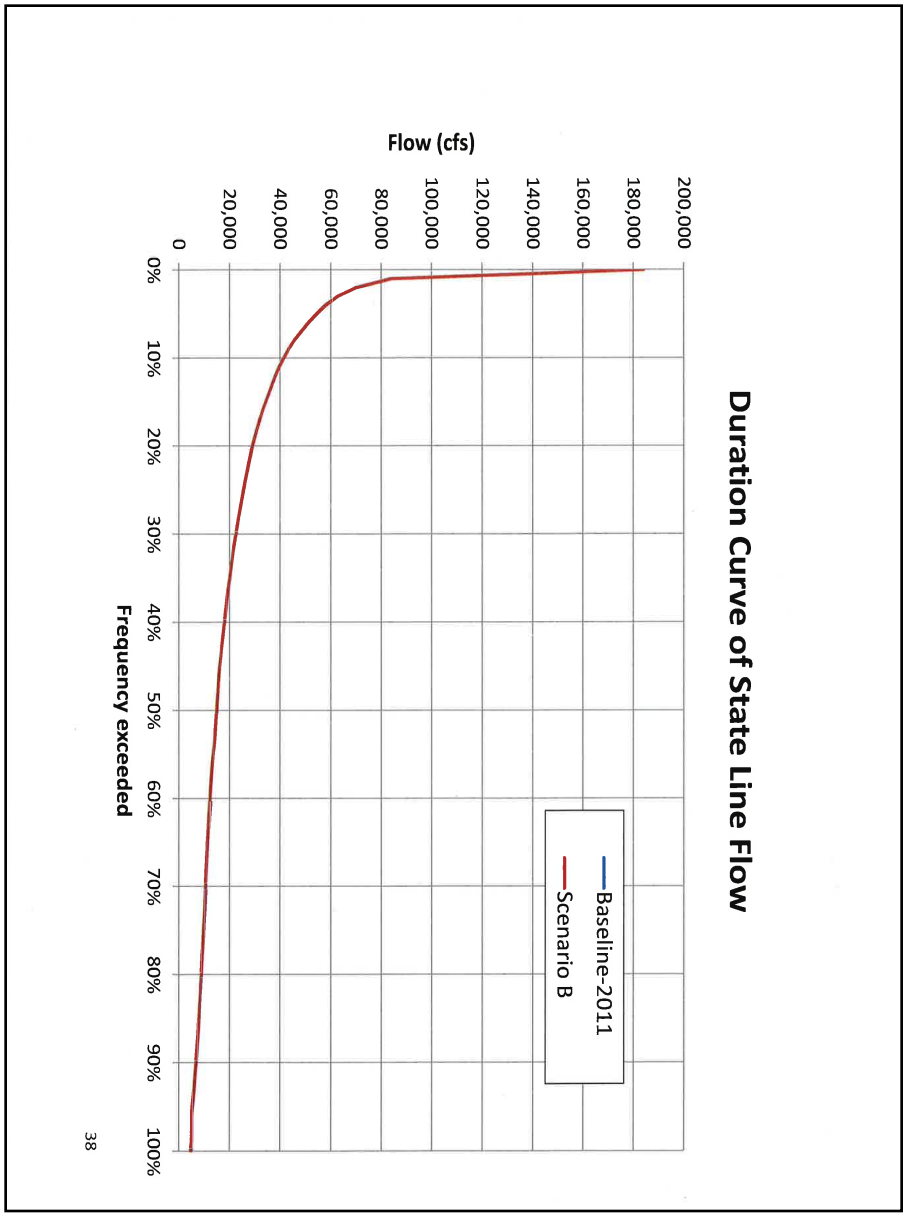

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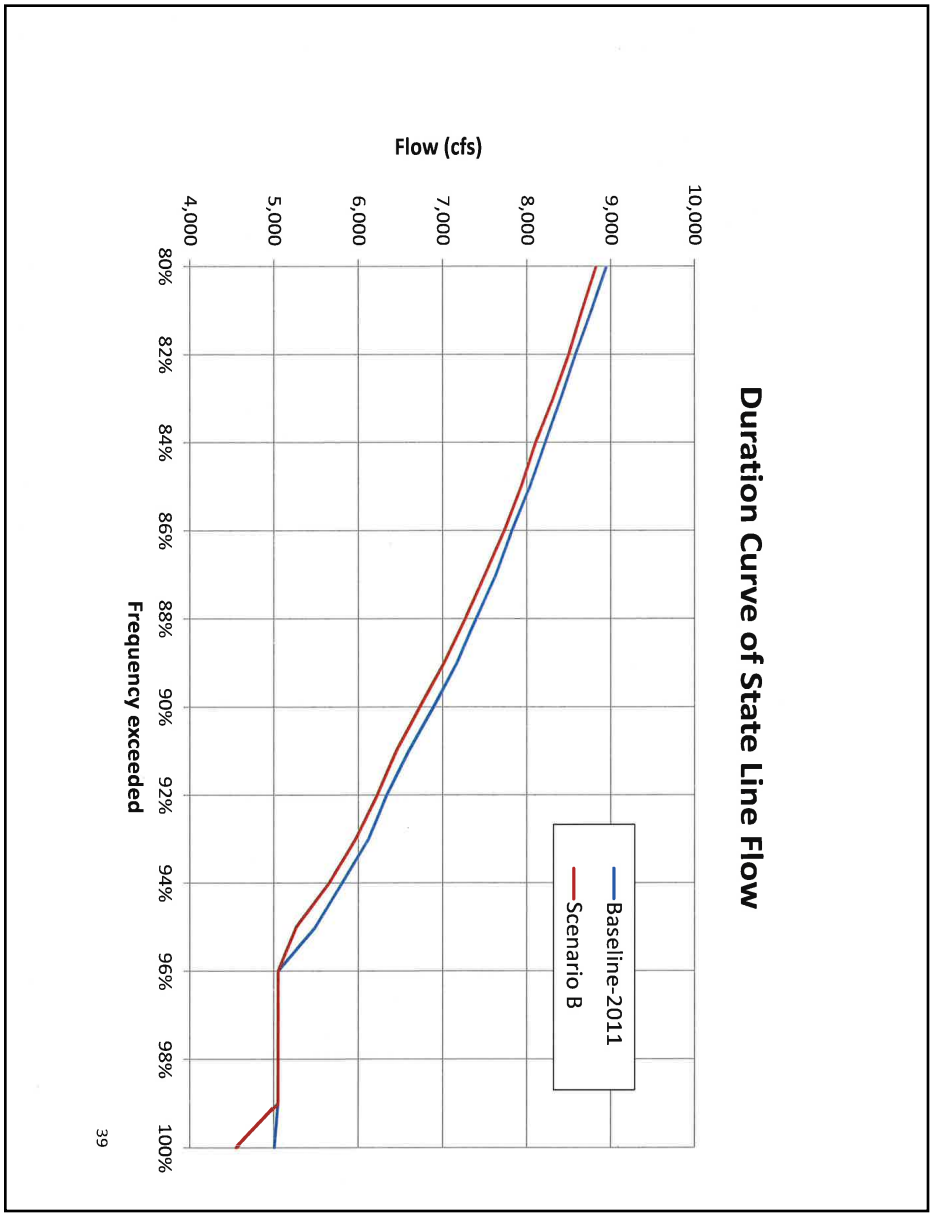

Deloach, Tonya

Page 1 of 2

12512

Tetra Tech
Attention: ACF-WCM
61 St. Joseph Street
Suite 550
Mobile, AL 36602-3521

Scoping Comments for ACF Water Control Manual

I submit the following comments in the recently reopened public scoping period:

1) There is a definitive need for additional storage in the ACF Basin; and that storage is readily and safely available in West Point Lake. Recent studies submitted to the USACE demonstrate that West Point Lake (WPL) can be maintained at a minimum 632.5 MSL year round; and if managed differently, the risk of downstream flooding during major rain events can actually be reduced! The trifecta is there to be won: Increased storage + Better management = Reduced flooding!

2) WPL is specifically authorized by Congress for Recreation and Sport Fishing/Wildlife Development in addition to Flood Control, Navigation, and Hydropower. Flood Control can be improved as outlined in the Operations Study referred to in #1 above and which study has been previously submitted to the USACE. Hydropower and Navigation both benefit from the availability of increased storage. The USACE must deliver and honor the Recreation and Sport Fishing/Wildlife Development Authorizations stipulated under law by Congress.

3) In order to accomplish #1 and #2 above, the Rule Curve needs to be adjusted upward to a minimum 632.5 MSL and the Action Zones need to be modified upward as well to a minimum 630.0 at the bottom of Action Zone 4. The parameters of 632.5 and 630.0 MSL are significant because they represent the initial and second recreation impact levels respectively as defined by the USACE.

Deloach, Tonya

Page 2 of 2

2.

4) The economic damages to the WPL communities and the lack of economic development due to unnecessarily low and undependable lake levels need to be assessed and stopped. Small businesses have gone bankrupt and others have been stretched to keep their doors open. Major fishing tournaments have been cancelled damaging hotels, restaurants, marinas, and lake related businesses. Visitation is down and campgrounds have been closed. Land specifically set aside for a hotel, conference center, golf course, etc. has never been developed. We are blessed with a moderate climate and WPL should be managed as a 52 week a year lake with the corresponding benefit of a 52 week a year lake related economy! WPL needs a dependable and reliable lake level to provide for economic development and stop the economic harm.

5) Environmental harm to WPL needs to be documented. Due to wildly vacillating lake levels, the fish spawn has suffered significantly in 3 of the last 5 years and the quality of the fishery, specifically the bass and crappie, has declined. Thousands, if not hundreds of thousands of mussels have been killed threatening water quality; erosion has increased the cost of water treatment; and siltation continues to eliminate valuable storage.

6) USFWS needs to be challenged to provide their science and document the need for 5,000 cfs for endangered species. Why 5,000 cfs? Why not 2,000 cfs? How many of each endangered species are there? Do they exist in deeper water than previously thought? What is the Recovery Plan? Are they still endangered, threatened, or neither? Can they be relocated to other areas where water is more plentiful and the economic damages are less. Who is looking out for the welfare of the small businessman? Common sense would seem to dictate that the needs of man should be balanced with the needs of the critters. The RIOP needs close analysis as part of the EIS to see what changes can be made to avoid destroying the economic, environmental, and recreational value of WPL during all times other than "extreme" drought!

I thank you for the opportunity to comment and ask that the above issues be submitted and studied during the EIS period.

Sincerely,

Tonya Deloach

Derck, Jim and Lynn

Page 1 of 1

1/12/2013

COMMENTER: Jim and Lynn Derck
603 W 3rd St
Carrabelle, FL 32322

ORGANIZATION: none

COMMENTS: We strongly urge all efforts to maintain the health of the Apalachicola River and Bay. The estuary is a vital link for marine life and human life and livelihood. A precious balance will maintain quality for all. We also support continuing research on water conservation methods for population centers. Thank you.

Diaz de Villegas, Rob

Page 1 of 1

1/11/2013

COMMENTER: Rob Diaz de Villegas
1201 S. Gadsden St.
Tallahassee, FL 32301

ORGANIZATION:

COMMENTS: The Apalachicola River Basin needs a higher flow of water to sustain its unique ecology and the economy it supports. There are not many places in this country where people rely on a natural resource like the people of Franklin County rely on Apalachicola Bay and the system that feeds it. There may be industries in other parts of the ACF basin that are more profitable than our local seafood industry; I haven't done that research. But none of the other ACF stakeholders north of the Woodruff Dam are as dependent as these seafood workers are on this resource. They are the front line of a multibillion dollar seafood economy in Florida, yet locally the money is not concentrated in large corporations but spread among self employed fishermen and oystermen and small family owned businesses. This has been the way for over one hundred years, and it is a large part of this area's identity. Economically and culturally, the crisis centralized in Apalachicola and East Point will ripple through the area, changing it permanently. The dollars and cents side of this matters, and it is substantial. But families are suffering, longstanding traditions are on the verge of being broken, and a community is on the verge of being torn apart.

Dodgen, Charles

Page 1 of 1

1/14/2013

COMMENTER: Charles Dodgen
6000 Warpath Rd
Flowery Branch, GA 30542

ORGANIZATION:

COMMENTS: - The 5,000 cfs minimum flow required at the state line is not representative of the true lowest historical flows in the ACF and is not sustainable.

- Lanier was never designed to support ALL downstream demands and can't be expected to because the dams originally proposed on the Flint River were never built.

- The Corps' current operating rules require more water to be released from Lanier than is necessary and do not allow as much to be stored as is possible. These draw the lake down more than necessary and make it less likely to refill to full pool under contemporary climatic conditions.

- The Endangered Species Act does not require the Corps to augment Apalachicola River flows above run-of-river levels and the practice should not be required because it depletes Lanier unnecessarily.

- Regular navigation is no longer feasible on the ACF and the Corps should not try to support it in view of the other demands on Lanier as a resource of last resort.

Dombrowski, Michael

Page 1 of 1

1/12/2013

COMMENTER: Michael E Dombrowski
130 Wagers Mill Rd.
Newnan, GA 30263

ORGANIZATION:

COMMENTS: Gentlemen, It is imperative that flow rates in the ACF be maintained at high enough levels to sustain the fishing industry of the Apalachicola area, particularly as relates to shell fisheries.

Drennen, Eileen

From: DIV.ACF.EIS
Subject: FW: Mobile District Contact Form: apalachicola river basin (UNCLASSIFIED)

-----Original Message-----
From: eileen527@yahoo.com [mailto:eileen527@yahoo.com]
Sent: Saturday, January 12, 2013 11:33 AM
To: webcontent SAM
Subject: Re: Mobile District Contact Form: apalachicola river basin

say - i just filled out a comment form & sent! spoooky!!
xoxox

On Jan 12, 2013, at 12:30 PM, webcontent@usace.army.mil wrote:

> This message was sent from the Mobile District website.
>
> Message From: Eileen Drennen
> Email: eileen527@yahoo.com
> Response requested: Yes
>
> Message:
>
> Please do the right thing to preserve and protect the irreplaceable Apalachicola River Basin. I am writing to ask for increased water flow from Woodruff dam and to request a sustainable water management plan for the ACF Basin--for the protection of The, River, The Estuary, and The Bay.

Classification: UNCLASSIFIED
Caveats: NONE

Dukes, Michael

1/14/2013

COMMENTER: Michael Dukes
5452 Redbark Place
Dunwoody, GA 30338

ORGANIZATION:

COMMENTS: As a Lake Lanier homeowner, I join the thousands of other interested individuals who own property surrounding Lake Lanier, and fully support the comments and efforts of the Lake Lanier Association- as has been detailed to you. The operations of the Corps of Engineers has drastically impacted the value of my home and investment, that of every other property owner in the region, as well as hundreds of businesses in the region. In an economy like we have, it is simply devastating to be impacted like this by the misguided operations and priorities established by the Corps of Engineers as they relate to Lake Lanier and its priority when it comes to supposed water needs throughout the rest of the ACF.

Give us our lake back!

Duncan, Peggy

Page 1 of 2

12/21/12

Tetra Tech
Attention: ACF-WCM
61 St. Joseph Street
Suite 550
Mobile, AL 36602-3521

Scoping Comments for ACF Water Control Manual

I submit the following comments in the recently reopened public scoping period:

1) There is a definitive need for additional storage in the ACF Basin; and that storage is readily and safely available in West Point Lake. Recent studies submitted to the USACE demonstrate that West Point Lake (WPL) can be maintained at a minimum 632.5 MSL year round; and if managed differently, the risk of downstream flooding during major rain events can actually be reduced! The trifecta is there to be won: Increased storage + Better management = Reduced flooding!

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3) In order to accomplish #1 and #2 above, the Rule Curve needs to be adjusted upward to a minimum 632.5 MSL and the Action Zones need to be modified upward as well to a minimum 630.0 at the bottom of Action Zone 4. The parameters of 632.5 and 630.0 MSL are significant because they represent the initial and second recreation impact levels respectively as defined by the USACE.

Duncan, Peggy

Page 2 of 2

2.

4) The economic damages to the WPL communities and the lack of economic development due to unnecessarily low and undependable lake levels need to be assessed and stopped. Small businesses have gone bankrupt and others have been stretched to keep their doors open. Major fishing tournaments have been cancelled damaging hotels, restaurants, marinas, and lake related businesses. Visitation is down and campgrounds have been closed. Land specifically set aside for a hotel, conference center, golf course, etc. has never been developed. We are blessed with a moderate climate and WPL should be managed as a 52 week a year lake with the corresponding benefit of a 52 week a year lake related economy! WPL needs a dependable and reliable lake level to provide for economic development and stop the economic harm.

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6) USFWS needs to be challenged to provide their science and document the need for 5,000 cfs for endangered species. Why 5,000 cfs? Why not 2,000 cfs? How many of each endangered species are there? Do they exist in deeper water than previously thought? What is the Recovery Plan? Are they still endangered, threatened, or neither? Can they be relocated to other areas where water is more plentiful and the economic damages are less. Who is looking out for the welfare of the small businessman? Common sense would seem to dictate that the needs of man should be balanced with the needs of the critters. The RIOP needs close analysis as part of the EIS to see what changes can be made to avoid destroying the economic, environmental, and recreational value of WPL during all times other than "extreme" drought!

I thank you for the opportunity to comment and ask that the above issues be submitted and studied during the EIS period.

Sincerely,

Peggy Duncan
Lake Harding Owner!!!

Dykes, Jimmy

Page 1 of 1

10/31/2012

COMMENTER: jimmy dykes
204 baugh ave
hogansville, GA 30230

ORGANIZATION:

COMMENTS: really need to get something done about the mudhole that use to be called westpoint lake. i cant even put my pontoon boat in the water at neither of the two boat ramps closest to my house. i would love to take my kids fishing but cant get the boat out the county is loosing money cause no one will come here to fish anymore. its ridiculous to have a lake that big you cant even use

Edwards, Peter

Page 1 of 1

12/7/2012

COMMENTER: Peter Edwards
3473 Maritime Glen
Gainesville, GA 30506

ORGANIZATION: www.LanierLuxuryHomes.com

COMMENTS: Another waste of time, money and resources, since the issue of the missing storage facilities on the Flint River will be ignored again! To attempt to re-allocate an undersized resource among increased demands will yield the usual results of failure.

Ellis, Judy

Page 1 of 1

10/31/2012

COMMENTER: Judy Ellis
102 Lakeshore Pointe
LaGrange, GA 30240

ORGANIZATION: Private Citizen

COMMENTS: Our lovely lake access/dock has been high and dry for most of the summer and fall. Our family has been denighted recreationly activities specified in the lake's charter and a prime reason we bought the property in the first place. No need to invite visitors for an evening cruise. What a shame.

Elmore, Greg

Page 1 of 5

Southern Nuclear
Operating Company, Inc.
40 Inverness Center Parkway
Post Office Box 1295
Birmingham, Alabama 35201

SOUTHERN COMPANY
Energy to Serve Your World™

File: E.02.50
Log: EV-13-0116

January 14, 2013

FEDERAL EXPRESS AND E-MAIL TO ACF-WCM@usace.army.mil

Colonel Steven J. Roemhildt
Commander, Mobile District
U.S. Army Corps of Engineers
c/o Tetra Tech, Inc.
Attn: ACF-WCM
61 St. Joseph Street, Suite 550
Mobile, Alabama 36602-3521

Re: Scoping for Draft Environmental Impact Statement for Updating the Water Control Manual for the Apalachicola-Chattahoochee-Flint River Basin

Dear Colonel Roemhildt:

The U.S. Army Corps of Engineers ("Corps") has solicited public comments regarding the Corps' revision of the scope of issues to consider as it updates its water control manual for the Apalachicola-Chattahoochee-Flint ("ACF") River Basin. 77 Fed. Reg. 62,224 (Oct. 12, 2012). This letter provides the comments of Alabama Power Company ("Alabama Power") and the Southern Nuclear Operating Company ("Southern Nuclear").[1]

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 is owned by Alabama Power. 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, Alabama Power and

[1] Southern Nuclear has previously submitted comments in connection with the scoping for this manual update, and these comments supplement those previous comments. Southern Nuclear also agrees with the comments of the State of Alabama and incorporates them by reference.

Elmore, Greg

Page 2 of 5

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EV-13-0116

Southern Nuclear have a significant interest in the Corps' management of its reservoirs in the ACF River Basin.

As the Corps revises its ACF water control manual, and considers new water supply operations for the Atlanta-metropolitan area, it is the position of Alabama Power and Southern Nuclear that the Corps must ensure minimum flows of 2,000 cubic feet per second ("cfs") in the Chattahoochee River at Columbia, Alabama and support navigation on the Apalachicola and Chattahoochee Rivers. Each of these issues is explained more fully below.

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.

Certain operational parameters concerning the Corps' ACF projects were assumed as part of Plant Farley's construction. The Final Environmental Impact Statement ("FEIS") of the Atomic Energy Commission for construction of Plant Farley 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.

Elmore, Greg

Page 3 of 5

Page 3
EV-13-0116

Plant Farley's flow and elevation needs have always been taken into consideration by the three states served by the ACF system. 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. 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 ACF 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 the 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.

Elmore, Greg

Page 4 of 5

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 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—Lanier, Walter F. George, and West Point—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).

West Point and Walter F. George are thus essential in maintaining adequate flows in the middle Chattahoochee and the Apalachicola River. The more depleted these reservoirs become, the less likely they can adequately provide that support. Therefore, lowering action zones at these reservoirs to protect storage at Lake Lanier negatively impacts downstream flow support. Any revision to the ACF water control manual must ensure that both West Point and Walter F. George are able to continue their important role in maintaining adequate flows in the middle Chattahoochee and Apalachicola Rivers. And the Corps should reject any alternatives that shift the burden of supporting Atlanta-area water supply to these downstream reservoirs.

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. Any new operations to support Atlanta-

Elmore, Greg

Page 5 of 5

area water supply must take account of the downstream flow requirements of Plant Farley and the congressionally mandated navigation support function of the ACF reservoir system. The Corps has not consistently 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. In short, 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' revised water control manual for the ACF Basin must ensure adequate flows to support navigation. Support of navigation is among the primary congressionally authorized purposes of the ACF reservoirs. Accordingly, the Corps has no discretion to abandon navigation support or to disfavor it in support of other reservoir purposes. Nothing in the legislative history of the ACF system or the Eleventh Circuit's *Tri-State* opinion authorizes the Corps to subordinate navigation support to other project purposes. Rather, navigation support is a co-equal authorized functions of the ACF reservoir system; therefore, each purpose must 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. At a minimum, a reasonable amount of conservation storage in Lanier should be reserved for navigation support.

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 205-992-5264.

Sincerely,

Greg Elmore
Environmental Services Supervisor

GDE:ahl

Eslinger, Emma

Page 1 of 2

11/16/12

Tetra Tech
Attention: ACF-WCM
61 St. Joseph Street
Suite 550
Mobile, AL 36602-3521

Scoping Comments for ACF Water Control Manual

I submit the following comments in the recently reopened public scoping period:

1) **There is a definitive need for additional storage in the ACF Basin; and that storage is readily and safely available in West Point Lake. Recent studies submitted to the USACE demonstrate that West Point Lake (WPL) can be maintained at a minimum 632.5 MSL year round; and if managed differently, the risk of downstream flooding during major rain events can actually be reduced! The trifecta is there to be won: Increased storage + Better management = Reduced flooding!**

2) **WPL is specifically authorized by Congress for Recreation and Sport Fishing/Wildlife Development in addition to Flood Control, Navigation, and Hydropower. Flood Control can be improved as outlined in the Operations Study referred to in #1 above and which study has been previously submitted to the USACE. Hydropower and Navigation both benefit from the availability of increased storage. The USACE must deliver and honor the Recreation and Sport Fishing/Wildlife Development Authorizations stipulated under law by Congress.**

3) **In order to accomplish #1 and #2 above, the Rule Curve needs to be adjusted upward to a minimum 632.5 MSL and the Action Zones need to be modified upward as well to a minimum 630.0 at the bottom of Action Zone 4. The parameters of 632.5 and 630.0 MSL are significant because they represent the initial and second recreation impact levels respectively as defined by the USACE.**

Eslinger, Emma

Page 2 of 2

2.

4) **The economic damages to the WPL communities and the lack of economic development due to unnecessarily low and undependable lake levels need to be assessed and stopped. Small businesses have gone bankrupt and others have been stretched to keep their doors open. Major fishing tournaments have been cancelled damaging hotels, restaurants, marinas, and lake related businesses. Visitation is down and campgrounds have been closed. Land specifically set aside for a hotel, conference center, golf course, etc. has never been developed. We are blessed with a moderate climate and WPL should be managed as a 52 week a year lake with the corresponding benefit of a 52 week a year lake related economy! WPL needs a dependable and reliable lake level to provide for economic development and stop the economic harm.**

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6) **USFWS needs to be challenged to provide their science and document the need for 5,000 cfs for endangered species. Why 5,000 cfs? Why not 2,000 cfs? How many of each endangered species are there? Do they exist in deeper water than previously thought? What is the Recovery Plan? Are they still endangered, threatened, or neither? Can they be relocated to other areas where water is more plentiful and the economic damages are less. Who is looking out for the welfare of the small businessman? Common sense would seem to dictate that the needs of man should be balanced with the needs of the critters. The RIOP needs close analysis as part of the EIS to see what changes can be made to avoid destroying the economic, environmental, and recreational value of WPL during all times other than "extreme" drought!**

I thank you for the opportunity to comment and ask that the above issues be submitted and studied during the EIS period.

Sincerely,

Emma Eslinger

Eslinger, Rhonda

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11/16/12

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Eslinger, Rhonda

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Sincerely,

Rhonda Eslinger

Evans, Arthur

Page 1 of 1

1/13/2013

COMMENTER: Arthur Evans
PO Box 186
Gravette, AR 72736

ORGANIZATION:

COMMENTS: One of the great bottomland and estuarine ecosystems is dying for lack of water. The people upstream can and ought to use less water from this system and find new sources for planned growth. Please maintain adequate flows to keep the Apalachicola basin and its estuary healthy.

Evans, Bonnie

Page 1 of 1

12/15/2012

COMMENTER: Bonnie Evans
114 View Pointe Drive
LaGrange, GA 30241

ORGANIZATION:

COMMENTS: West Point is very important economically and aesthetically to our area. It can be a beautiful healthy lake and an asset to our community but the fluctuating water level makes it an eyesore. We live on the lake and our home value is affected by the health of the lake. Please help us keep it a level to support the life in the lake as well as the beauty of the lake.

E_____(illegible), Frank

Page 1 of 2

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Sincerely,

Fay, Virginia

Page 1 of 2

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

Southeast Regional Office
263 13th Avenue South
St. Petersburg, Florida 33701-5505
(727) 824-5317; FAX (727) 824-5300
http://sero.nmfs.noaa.gov/

January 14, 2013 F/SER47:PB/pw

(Sent via electronic mail)

Colonel Steven J. Roemhildt, District Engineer
United States Army Corps of Engineers, Mobile
61 St. Joseph Street, Suite 550
Mobile, Alabama 36602-3521

Attention E. Patrick Robbins

Dear: Colonel Roemhildt:

NOAA's National Marine Fisheries Service (NMFS) reviewed the Notice of Intent (NOI), dated October 12, 2012, that indicates the Mobile District is revising the Draft Environmental Impact Statement (DEIS) for the Apalachicola-Chattahoochee-Flint (ACF) River Basin Water Control Manual (WCM). The new scoping is necessary to accommodate a June 2011 decision of the U.S. Court of Appeals for the Eleventh Circuit and a June 2012 legal opinion by the Chief Counsel, US Army Corps of Engineers, regarding the Corps' authority to consider municipal and industrial water supplies at the Buford Dam/Lake Lanier Project. In addition to the NOI, NMFS has reviewed the 2011 Draft Fish and Wildlife Coordination Act Report, which includes recommendations from the U.S. Fish and Wildlife Service (FWS) for dam operations and flow improvements within the ACF basin. As the nation's federal trustee for the conservation and management of marine, estuarine, and diadromous fishery resources, the following comments and recommendations are provided pursuant to authorities of the Fish and Wildlife Coordination Act, Endangered Species Act, and the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act).

NMFS supports the recommendations by FWS and other resource agencies to increase flows in the Apalachicola River above the minimum 5000 cubic feet per second (cfs) in the WCM, and NMFS believes this could be done by developing a water control plan that more fully integrates all water storage projects within the ACF basin rather than relying almost exclusively on Lake Lanier. Minimum flows greater than 5000 cfs are more supportive of the essential fish habitat (EFH) within the Apalachicola estuary. Further, improved river flows during the migratory season for diadromous fish species (January to May) would also support restoration of spawning areas used by Alabama shad, Gulf sturgeon, and striped bass.

FWS in their Draft Fish and Wildlife Coordination Act Report and letter, dated January 11, 2013, responding to the NOI provide additional detail on seasonal water flows within the ACF basin that should be targeted. The FWS recommendations are based upon results from the hydrologic model of the ACF basin and a technical workshop FWS hosted on November 29 and 30, 2012, that included stakeholders representing multiple interest groups and the states of Alabama, Florida, and Georgia. NMFS supports

Fay, Virginia

Page 2 of 2

the FWS recommendations and would like to work with the Mobile District to refine further the WCM to support flows for diadromous fish and EFH.

Thank you for the opportunity to provide these comments. Related correspondence should be directed to the attention of Mr. Prescott Brownell at our Charleston office, 219 Fort Johnson Road, Charleston, South Carolina, 29412. He also may be reached by telephone at (843) 762-8609 or by e-mail at Prescott.Brownell@noaa.gov.

Sincerely,

/ for

Virginia M. Fay
Assistant Regional Administrator
Habitat Conservation Division

cc:

COE, Ervin.P.Robbins@usace.army.mil
COE, acf-wcm@usace.army.mil
FWS, Sandy_Tucker@fws.gov
FWS, Jerry_Ziewitz@fws.gov
GADNR, John_Biagi@mail.dnr.state.ga.us
GADNR, Matt_Thomas@mail.dnr.state.ga.us
F/SER4, David.Dale@noaa.gov
F/SER47, Prescott.Brownell@noaa.gov

Feaver, Marylyn

Page 1 of 1

1/12/2013

COMMENTER: Marylyn Feaver
115 Byrd Rd.
QUINCY, FL 32351

ORGANIZATION: Florida Panhandle Canoe and Kayak Connection

COMMENTS: I kayak the Apalachicola River and streams and rivers within its watershed. I can see the water above the Jim Woodruff dam full and down river the land and river is suffering. I fear for the ecology of the Apalachicola floodplain -- it doesn't take much to forever change it. Please begin to develop a comprehensive study of this area and in developing flow policies please note that the land itself, and the non-human creatures have a right to survive. I go to Atlanta a lot and don't see much in the way of water conservation practiced there. In our place, we have rain barrels, try to use our secondary water and landscape with native plants to ensure hardier species for this area without watering. And we installed a minimum watering system in our vegetable garden,recommended by the Extension Service. If people, municipalities, commercial and agricultural interests upriver are less concerned about husbanding our water resources, perhaps policies which allow for more equitable draw downs at the Woodruff Dam will do so.

Ficklen, Susan

Page 1 of 1

1/14/2013

COMMENTER: Susan Ficklen
801 W. Gorrie Drive
St. George Island, FL 32328

ORGANIZATION:

COMMENTS: Please include the following in the Water Control Mgmt Plan EIS: An assessment/consideration of the freshwater needs to sustain the health of the Apalachicola River and Bay. Increase the water released from the Woodruff Dam in timely manner. Develop ACF basin wide mgmt plan that protects the Apalachicola River and Bay and equitably shares the water of this basin. These waters are among the largest estuaries in the world, enhancing the production of oysters and all life support for our fisheries. Share the water!

Fields, Ken

10/15/2012

COMMENTER: Ken Fields
5995 Lanier Heights Circle
Buford, GA 30518

ORGANIZATION:

COMMENTS: Lanier begins to beome dangerous when the level falls below 1065. Every effort should be made to keep the level above 1065.

Fiman, Elizabeth

From: rollerama@aol.com [mailto:rollerama@aol.com]

Sent: Monday, January 14, 2013 12:15 PM
To: ACF-WCM
Subject: Comments

The 5,000 cfs minimum flow required at the state line is not representative of the true lowest historical flows in the ACF and is not sustainable.
- Lanier was never designed to support ALL downstream demands and can't be expected to because the dams originally proposed on the Flint River were never built.
- The Corps' current operating rules require more water to be released from Lanier than is necessary and do not allow as much to be stored as is possible. These draw the lake down more than necessary and make it less likely to refill to full pool under contemporary climatic conditions.
- The Endangered Species Act does not require the Corps to augment Apalachicola River flows above run-of-river levels and the practice should not be required because it depletes Lanier unnecessarily.
- Regular navigation is no longer feasible on the ACF and the Corps should not try to support it in view of the other demands on Lanier as a resource of last resort.

Elizabeth Weller Fiman
Lake Lanier Homeowner

1

Fineout, Dennis

Page 1 of 1

1/14/2013

COMMENTER: Dennis Fineout
404 Woodlawn Drive
EUFAULA, AL 36027

ORGANIZATION:

COMMENTS: First, thank you to the USACE for the excellent work that have done managing this public asset. While not agreeing with every decision, my family and I have great appreciation for their efforts.

Following are a few areas that I would like to see given more attention.

Commercial waterway usage. The commercial barge traffic, an excellent alternative to over the road semi-truck wear and tear, is not currently feasible due to the lack of dredging in the Blounstown area. My understanding is that dredging requires a permit from Florida, which is not being granted. There must be some means of working through this issue.

Lake Lanier. They need a long term water plan, period, and that is not to continue to try to ignore the stakeholders down stream.

Endangered species in Apalachicola and minimum flow rate to support. At some point, consideration needs to focus on the greater good; people versus mussels.

Thank you.

Fineout, Mary Beth

Page 1 of 1

1/14/2013

COMMENTER: Mary Beth Fineout
404 Woodlawn Dr.
Eufaula, AL 36027

ORGANIZATION:

COMMENTS: Communities and businesses located and grew around Lake Eufaula with the full expectation that the Corps would operate the ACF reservoirs according to the laws authorizing their construction and operation. Those communities spent significant dollars to build public works projects as well as infrastructure including the Eufaula Inland Dock. 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.
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 and lake levels for their future survival. Industry and commerce will continue to grow in southeastern Alabama and southwestern Georgia with adequate flows and channel maintenance.

We want to see barge and commercial traffic returned to our region. It is an excellent alternative to "over the road" semi-truck wear and tear and is not currently feasible due to the lack of dredging in the Blounstown area.

We also want to maintain Walter F. George lake at a level of 187.5 ft or greater. When lake level is below 187.5 ft then recreational activities on the lake are curtailed. With lower lake levels submerged stumps become uncovered or lay just barely below the waters surface and present safety hazards. At lake levels nearing 185 ft some boat ramps become difficult to use. Walter F. George has the second highest amount of recreational activity on the ACF and this is an important driver in the local communities economies. In addition, from a geology and soils aspect a lower lake level results in greater wave generated undercutting of the bank.

Regarding the endangered species in Apalachicola and minimum flow rate to support them; at some point, consideration needs to focus on the greater good; people versus mussels.

Regarding Lake Lanier; they need a long term water plan, period, one that does not continue to try to ignore the stakeholders down stream.

Respectfully,
Mary Beth Fineout

Fletcher, Dan

Page 1 of 2

W. C. Bradley Farms, Inc.

WC FARMS

11/28/2012

P.O. Box 140
Columbus, GA 31902-0140

Tetra Tech
Attention: ACF-WCM
61 Saint Joseph Street
Ste 550
Mobile, AL 36602-3521

To Whom It May Concern,

I am writing on behalf of WC Bradley Farms, Inc. relative to the public scoping for the proposed update of the Master Water Control Manual for the Apalachicola-Chattahoochee-Flint River Basin (ACF) in Alabama, Florida and Georgia.

The Bradley family has been reliant on the Chattahoochee River for nearly 150 years. In the 1880's their steamboats were used to transport cotton and fertilizer from Columbus, Georgia to Apalachicola, Florida. Some years later, when the dam at Columbus was built, the power was used to support their cotton mills and iron works. More recently the family provided the impetus to have the dam removed in order to restore the natural flow of the river. In the early 1900's the family began their farming operation in Quitman and Stewart Counties in Georgia and for the past 36 years have irrigated approximately 1700 acres from 8 pump stations located on various tributaries leading to Lake George. We have in the past, and continue to make considerable investments in our irrigated farming operations and in conjunction with our forest management program these activities provide the economic sustenance for our long history of protecting water quality/quantity and the biological resources of the ACF watersheds.

The Farm has a long-history of conservation accomplishments and partnerships which include:

- A perpetual easement on 4.7-acres of non-tidal wetland in 1996
- A 671-acre Wetland Reserve project (largest project in Georgia), in 2003
- The development of restoration of 123-acre long-leaf pine habitat in 2005

Page **1** of **2**

Fletcher, Dan

Page 2 of 2

- Converting a 172-acre irrigated field into migratory bird habitat in 2010
- The establishment of a 5613-acre perpetual conservation easement in 2007.
- The development of a 371.7-acre Wetland Mitigation Bank which will soon be placed in a perpetual conservation easement.

The family has been united in the goal of obtaining economic and environmental sustainability by working toward a balance between the production of agricultural and forestry crops, employing 22 people in an economically distressed community while concurrently incorporating conservation projects in all aspects of farm management. Water supply for our agricultural irrigation is a vital link in our historical and future success.

We are very proud of our accomplishments. If new performance measures are needed to protect water supply, water quality, biological resources and water management within the ACF these changes should not impact historical and existing water uses which have allowed us to balance the successful production of agricultural and forestall crops while promoting conservation practices in all we do.

Thank you for your consideration our comments and we look forward in actively participating in the development of the USACE Water Control Manual. I look forward to hearing from you.

Sincerely,

Dan Fletcher
Farm Manager

c.c. Steve J. Roemhildt
District Engineer and Commanding Officer
US Army Corps of Engineer Mobile District
PO Box 2288
Mobile, Al 36628-0001

Steve Butler –CEO, WC Bradley Co.

John Turner – Chair, WC Bradley Family Council

Page **2** of **2**

Fogg, Mike

Page 1 of 2

12/10/2012

COMMENTER: Mike Fogg
31 Turkey Point Ct.
LaGrange, GA 30240

ORGANIZATION:

COMMENTS: I am a homeowner on West Point Lake. Since we bought our house in 2005, we have rarely seen the lake at full pool even during the summer. Most years I have to repeatedly move my dock out throughout the year use to keep it useable for docking our boat.

The low water levels and exposed shoreline also make the lake much less attractive. At full pool (or at least close to it) it is one of the most beautiful lakes in the Southeast.

I realize that there have been two major factors over the past few years that contribute to the extreme low lake levels. That being the drought cycle that we have been in and the requirement that USACE is held to by U.S. Fish and Wildlife to provide minimum flow rates to the Apalachicola River.

To help offset the impact of these two factors, I suggest that the operating procedures for the lake and the ACF system be modified to allow more year-round water storage in West Point Lake. By keeping the lake level in the 632 to 633 (minimum) range it will help in offsetting the impact of drought conditions. Even by keeping the lake at these levels, Flood Control can still be maintained. This was proved in September 2009 when North Georgia experienced extreme rainfall amounts and had massive flooding. The water level at West Point Lake rose above full pool but no downstream flooding occurred. The point here is that in the past when lake levels have been down below 630 and the area receives significant rainfall and the lake level rises, immediately that water is released to bring the lake level down because it is above what ýit should be at that time of yearý. The area then has reduced rainfall amounts through the year and the lake never recovers.

My other main comment relates to the minimum flow requirements set by the USFWS. I believe that USACE needs to challenge this requirement through whatever channels available and this criteria needs to be revisited. If lower river levels where the result of drought and reduced flow from upstream, could the endangered mussels survive by moving deeper? Are they still endangered or threatened? Environmentally, there has been a negative impact to West Point Lake by having reduced and fluctuating water levels in the spring and early summer to meet these downstream flow requirements. There have been times when lake levels were at 633-634 in the early spring and bass and crappie were spawning in the shallows. Then within a couple of weeks the lake level is dropped two feet or more to meet the flow requirements. This has a dramatically negatively impact on these species. The same thing happens later in the spring with bream and shad spawn. Does this impact to these species not matter versus the impact to the mussels? Ask the taxpaying citizens which species they would prefer to have considerations made for.

The continued low lake levels have had a very negative economic impact to this area from property values being reduced to small businesses either going out of business or barely able to stay open due to reduced number of visitors to the lake. Hotels, marinas, campgrounds all have less business when the

Fogg, Mike

Page 2 of 2

lake levels are down. The West Point Lake Coalition and the Chamber of Commerce have had economic impact studies done that prove this point. One of the Congressional Authorized uses of West Point Lake was recreation and I believe that this should be a major consideration in the modification of the operating procedures.

Thank you for the opportunity to provide my comments on West Point Lake and itý's operation. It is a great lake and it has so much potential to be even better if lake levels are kept at a higher level. I look forward to a revised Water Control Manual which will benefit us all and allow the Lake to live up to itý's full potential.

Foley, Rachel

Page 1 of 1

1/14/2013

COMMENTER: Rachel Foley
7890 Floyd Lane
Gainesville, GA 30506

ORGANIZATION:

COMMENTS: The following summarizes my concerns:

- The 5,000 cfs minimum flow required at the state line is not representative of the true lowest historical flows in the ACF and is not sustainable.

- Lanier was never designed to support ALL downstream demands and can't be expected to because the dams originally proposed on the Flint River were never built.

- The Corps' current operating rules require more water to be released from Lanier than is necessary and do not allow as much to be stored as is possible. These draw the lake down more than necessary and make it less likely to refill to full pool under contemporary climatic conditions.

- The Endangered Species Act does not require the Corps to augment Apalachicola River flows above run-of-river levels and the practice should not be required because it depletes Lanier unnecessarily.

- Regular navigation is no longer feasible on the ACF and the Corps should not try to support it in view of the other demands on Lanier as a resource of last resort.

Fortune, Ray

Page 1 of 1

1/1/2013

COMMENTER: Ray Fortune
1361 Villa Rica Rd.
Powder Springs, GA 30127

ORGANIZATION: Private Citizen

COMMENTS: Would like to understand more about the plans to cut back water suppy/ time the lake is up to full pool at West Point Lake.Thanks

Foster, Betty

Page 1 of 2

12/8/12

Tetra Tech
Attention: ACF-WCM
61 St. Joseph Street
Suite 550
Mobile, AL 36602-3521

Scoping Comments for ACF Water Control Manual

I submit the following comments in the recently reopened public scoping period:

1) There is a definitive need for additional storage in the ACF Basin; and that storage is readily and safely available in West Point Lake. Recent studies submitted to the USACE demonstrate that West Point Lake (WPL) can be maintained at a minimum 632.5 MSL year round; and if managed differently, the risk of downstream flooding during major rain events can actually be reduced! The trifecta is there to be won: Increased storage + Better management = Reduced flooding!

2) WPL is specifically authorized by Congress for Recreation and Sport Fishing/Wildlife Development in addition to Flood Control, Navigation, and Hydropower. Flood Control can be improved as outlined in the Operations Study referred to in #1 above and which study has been previously submitted to the USACE. Hydropower and Navigation both benefit from the availability of increased storage. The USACE must deliver and honor the Recreation and Sport Fishing/Wildlife Development Authorizations stipulated under law by Congress.

3) In order to accomplish #1 and #2 above, the Rule Curve needs to be adjusted upward to a minimum 632.5 MSL and the Action Zones need to be modified upward as well to a minimum 630.0 at the bottom of Action Zone 4. The parameters of 632.5 and 630.0 MSL are significant because they represent the initial and second recreation impact levels respectively as defined by the USACE.

Foster, Betty

Page 2 of 2

2.

4) The economic damages to the WPL communities and the lack of economic development due to unnecessarily low and undependable lake levels need to be assessed and stopped. Small businesses have gone bankrupt and others have been stretched to keep their doors open. Major fishing tournaments have been cancelled damaging hotels, restaurants, marinas, and lake related businesses. Visitation is down and campgrounds have been closed. Land specifically set aside for a hotel, conference center, golf course, etc. has never been developed. We are blessed with a moderate climate and WPL should be managed as a 52 week a year lake with the corresponding benefit of a 52 week a year lake related economy! WPL needs a dependable and reliable lake level to provide for economic development and stop the economic harm.

5) Environmental harm to WPL needs to be documented. Due to wildly vacillating lake levels, the fish spawn has suffered significantly in 3 of the last 5 years and the quality of the fishery, specifically the bass and crappie, has declined. Thousands, if not hundreds of thousands of mussels have been killed threatening water quality; erosion has increased the cost of water treatment; and siltation continues to eliminate valuable storage.

6) USFWS needs to be challenged to provide their science and document the need for 5,000 cfs for endangered species. Why 5,000 cfs? Why not 2,000 cfs? How many of each endangered species are there? Do they exist in deeper water than previously thought? What is the Recovery Plan? Are they still endangered, threatened, or neither? Can they be relocated to other areas where water is more plentiful and the economic damages are less. Who is looking out for the welfare of the small businessman? Common sense would seem to dictate that the needs of man should be balanced with the needs of the critters. The RIOP needs close analysis as part of the EIS to see what changes can be made to avoid destroying the economic, environmental, and recreational value of WPL during all times other than "extreme" drought!

I thank you for the opportunity to comment and ask that the above issues be submitted and studied during the EIS period.

Sincerely,

Betty J Foster

Foster, Betty

Page 1 of 2

12/14/12

Tetra Tech
Attention: ACF-WCM
61 St. Joseph Street
Suite 550
Mobile, AL 36602-3521

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Foster, Betty

Page 2 of 2

___/___/___

Tetra Tech
Attention: ACF-WCM
61 St. Joseph Street
Suite 550
Mobile, AL 36602-3521

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Betty J. Foster

Foster, Oliver

Page 1 of 2

12/14/12

Tetra Tech
Attention: ACF-WCM
61 St. Joseph Street
Suite 550
Mobile, AL 36602-3521

Scoping Comments for ACF Water Control Manual

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Foster, Oliver

Page 2 of 2

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5) Environmental harm to WPL needs to be documented. Due to wildly vacillating lake levels, the fish spawn has suffered significantly in 3 of the last 5 years and the quality of the fishery, specifically the bass and crappie, has declined. Thousands, if not hundreds of thousands of mussels have been killed threatening water quality; erosion has increased the cost of water treatment; and siltation continues to eliminate valuable storage.

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I thank you for the opportunity to comment and ask that the above issues be submitted and studied during the EIS period.

Sincerely,

Oliver O. Foster

Franks, James

Page 1 of 1

12/10/2012

COMMENTER: James Franks
233 Linda LANE
LaGrange, GA 30240

ORGANIZATION:

COMMENTS: The constant lowering of West Point Lake has been very detrimental to my lakeside property. I have gotten into the habit of calling it the yo-yo lake. Please raise the target level for the winter time as well as the low level you would take it to in drought conditions.

Frazier, Earl

Page 1 of 2

12/21/2012

Tetra Tech
Attention: ACF-WCM
61 St. Joseph Street
Suite 550
Mobile, AL 36602-3521

Scoping Comments for ACF Water Control Manual

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Frazier, Earl

Page 2 of 2

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I thank you for the opportunity to comment and ask that the above issues be submitted and studied during the EIS period.

Sincerely, Earl Frazier

Freed, Charles

Page 1 of 21

Jan 10, 2013

Atlanta Rowing Club
P.O. Box 500937
Atlanta, GA 31150
ATTN: Charles Freed
cfreed2@bellsouth.net
www.atlantarow.org

U.S. Army Corps of Engineers (USACE)
Mobile District Office
Mobile, Alabama
ACF-WCM@usace.army.mil

Re: USACE ACF Master Control Manual Update.

Focus: Recreational and ecologic concerns for the Upper Chattahoochee River between Buford Dam and Morgan Falls Dam

Thank you for the opportunity to share with the USACE the concerns of recreational users of the Upper Chattahoochee River. As stakeholders we ask the USACE to include our concerns within the scope of study as you prepare the ACF Master Control Manual Update process.

Six rowing clubs with over 600 members use the 6.5 mile section of the Chattahoochee between the GA400 Bridge and Morgan Falls Dam throughout the year. These rowers represent: The Atlanta Rowing Club, The Atlanta Junior Rowing Association, Georgia Tech Crew, Georgia State Crew, Saint Andrew Rowing Club and the Westminster Schools Rowing Club. These non-profit clubs work to ensure safety on the water, develop the skills of new young and adult rowers and compete locally and nationally. They collaborate in events that have raised over $300,000 for the Susan G Komen for the Cure Foundation. The Atlanta Rowing Club has developed an adaptive rowing program for those who are physically or mentally challenged. The Atlanta Rowing Club sponsors and manages the largest rowing regatta in the Southeast, "Head of the Hooch". The 2012 two-day regatta hosted over 7,000 rowers of all ages, from 30 states and 4 foreign countries. This event generated an estimated economic impact of over $4,000,000 for the Chattanooga area (Chattanoogan, 2012).

We are very concerned over threats to recreation and the long term ecology of the river. When the elevation at Morgan Falls Dam is at or above 864 feet there is adequate depth for rowing the 6.5 mile section above the dam. The long term average water level (elevation) at Morgan Falls Dam is 865 feet (USGS 2335810). This is the only section of the Chattahoochee in the Atlanta area that is suitable for rowing. In addition to rowers, a large number of people use this section of the river to kayak, canoe, raft, tube, or fish. We are deeply concerned about the gradual loss of water depth in this area to sedimentary deposits and the loss of the ecosystem.

This special environment and its recreational use are threatened by the sedimentary deposits which have been related to the discharge patterns at Buford Dam. These patterns yield dramatic changes in flow rate and water levels, increased turbidity, riverbank erosion,

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unnecessary deposition of sediment and loss of capacity at Bull Sluice Lake. Additional concerns for public safety and several impacts of turbidity levels will be presented. We recommend changes in the pattern of water releases at Buford Dam. More controlled, gradual discharges would reduce risks to public safety, enhance recreational use and could slow the deposition of sediment deposits in the area. Specific details are in the following sections.

Until the river can be dredged, we feel that it is critical to take actions that will mitigate the growth of sandbars and deposits to this section of the river as soon as possible. Therefore we request that the items that follow be considered in this scoping effort.

Thank you for the opportunity to comment on these important issues. We would welcome your visit to Atlanta to join us in touring this section of the Chattahoochee and discussing the relevant issues.

For the Atlanta Rowing Club:

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Supported By:

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Introduction

This document requests items for inclusion in the scoping phase of the USACE ACF Master Control Manual Update. These remarks address the 36 mile section of the Chattahoochee between Buford Dam and Morgan Falls Dam with special focus on the 6.5 mile section above Morgan Falls Dam.

The timeframes for the USGS data that are used in the various figures were selected to represent typical recent data (October & November, 2012). In order to show consistency of data, a ten day timeframe with zero measured rainfall was selected. The same 10-day period was used for all examples with two exceptions. Figure 5 (June 2012) was selected to coordinate with a photograph of typical sandbar exposures seen with water levels on that day. The dates for Table 4 were selected to examine the hottest two weeks of 2012. Days 13 and 14 of this period had about 0.7" of precipitation which was not relevant to the point of that table.

This document will recommend reduction of the peak levels of Buford Dam's discharges. This would improve recreational safety and reduce ecological impacts, without affecting the daily average river flow rates or generated power required to satisfy the interests of other river stakeholders.

Background - Recreation on the Upper Chattahoochee

The 36 mile section of the Chattahoochee between Buford Dam and Morgan Falls Dam is part of the Chattahoochee River National Recreation Area (CRNRA). The CRNRA corridor provides 70% of the public green space in the metropolitan Atlanta area. More than 3 million people visit the CRNRA annually, with approximately 1 million of these visitors taking part in river-based recreational activities (KellerLynn, 2012). The 6.5 mile stretch of river from the GA400 Bridge to Bull Sluice Lake has adequate water depth for rowing, kayaking, canoeing and small motorized boat use.

The Chattahoochee River Water Trail was the first river to be designated as a National Water Trail by the US Department of Interior (USDI, 2012). The Georgia Department of Natural Resources Environmental Protection Division classifies the designated uses of the Chattahoochee River from Buford Dam to Peachtree Creek as Drinking Water and Recreation (GADNR 1997). The river and its highly utilized riverbank parklands also provide habitat for wildlife. The cold water output from Lake Lanier creates one of the southernmost trout streams in the United States (Chattahoochee Riverkeeper web, 2012).

Background - Buford Dam Discharge Patterns

The daily discharges from Buford Dam typically follow a pattern of approximately 20 hours of low flow (600 cfs) followed by 3 or 4 hours of extremely high discharge rates between 5,500 cfs and 10,700 cfs. Discharge peaks can build to a maximum quickly at unpredictable times. The mean discharge rate at Buford Dam is 1,140 cfs (USGS Site 2334430). This type of discharge pattern is analogous to driving a car 15 miles in one hour using only 2 speeds - either 6 or 100 mph. In recent months the average flow rate has increased to 2,200 cfs with more frequent periods of high peak flows. (USGS Site 2334430) (See Figure 1).

High flow rates and irregular discharge cycles from Buford Dam result in the loss of valuable shore line, negative impacts on general recreation along the 36 river miles and unnecessary sediment deposits above Morgan Falls Dam. For rowers, low water levels and high currents result in increased safety risks, and the inability to plan consistent workouts for regional/national competitions. A rowing shell for 8 rowers is 60 feet long, weighs 200 pounds, has a 12" draft and costs $35,000. Damages to boat hulls and equipment due to striking

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sandbars and underwater hazards that are normally under several feet of water costs tens of thousands of dollars annually.

1. Public Safety

Suggested Scope - Include development of a historical data base of incidents including rescues and fatalities on the Chattahoochee between Buford Dam and Morgan Falls Dam to measure progress in this critical area.

Discussion - Since approximately one million visitors to the CRNRA take part in river-based recreational activities, public safety should be a high priority for scope considerations. The Buford Dam discharges vary wildly on a daily basis (Southern Company 2006). Rescue operations and fatalities related to high peak discharges at Buford Dam have been documented. For example, Gwinnett's water rescue team responded to the river 7 times in 2008, 9 in 2009 and 11 times in 2010. They also responded to 2 fatalities in those years (Green, 2011). USACE has commented on how the Upper Chattahoochee can turn dangerous quickly, with gauge height increases up to 11 feet within minutes (Coghlin, 2011).

High variability in flow rate and gauge height also occurs throughout the 36 river miles above Morgan Falls Dam. The USGS Sites at Norcross and Above Roswell, which are over 20 miles downstream of Buford Dam, register current peaks in excess of 3,000 cfs. Rapid changes in flow rate (up to 5:1 increases) can pose risks to wading fishermen and other recreational users (See Figure 2).

2. Erosion / Sedimentation

Suggested Scope - Include a study of the relationships of Buford Dam operations on turbidity, erosion and sedimentation in the area above Morgan Falls Dam.

Discussion - High discharge rates can result in significant increases in erosion, sediment transport, turbidity and pronounced daily and hourly river level fluctuations (Faye, 1980). The Dept of Interior Geological Survey paper observed that relatively severe bank erosion had occurred along the Chattahoochee River downstream of Buford Dam (Faye, 1980).

Several studies have demonstrated an exponential relationship between flow rates and suspended sediment or turbidity in river water (e.g. Cherry 1976: Colby 1956: Ryan & Emmett 2002). A 1980 USGS report (Faye, 1980) presented data from a study of the Upper Chattahoochee and its tributaries (Table 1). Faye found that the relationship between instantaneous stream flow rates and suspended sediment was explained by the exponential function: $C=aQ_i^b$

Where:

C = suspended sediment concentration, mg/L

Q_i = instantaneous stream flow, cfs

a & b = regression constants.

Faye included 3 data sets from days when runoff could have affected the relationship between instantaneous flow rate and suspended sediment (Table 1). When these three data sets with runoff effects are excluded, the resulting function should focus on the effects of instantaneous flow rate on transported sediment. The a & b regression constants for the remaining 14 data sets (Faye1980) were averaged to be conservative and to balance differences in channel characteristics along the 36 river miles between Buford Dam and Morgan Falls Dam. The resulting function is $C=2.61Q_i^{1.16}$.

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Calculations indicate that a 770% increase in flow rate (from the 1,140 cfs average to 10,000 cfs peaks) could result in a 1,120% increase in suspended sediment. This function was used to develop an indexed model for calculation of the effects of different flow rates on the suspended sediment concentrations. Four different discharge rates were used to achieve the historical average of 1,140 cfs for two examples of peak discharge patterns. These cases assume the peaks to be rectangular in shape while they actually are approximately trapezoidal.

Case 1: (present pattern) 94% discharge at 600 cfs and 6% at 10,000 cfs

Case 2: (reduced peaks pattern) 77% discharge at 600 cfs and 23% at 3,000 cfs

These two cases of discharge patterns were combined with the respective suspended sediment concentrations indicated by the exponential function. The resulting suspended sediment values for Cases 1 and 2 were indexed using the values for the 1,140 cfs average as the base (% Suspended Sediment at % Flow X % Time at the Case discharge rates). A comparison of these two indexed cases indicated that reducing the discharge pattern peaks from 10,000 cfs to 3,000 cfs could reduce the net suspended sediment concentration by 10% (See Table 2).

This conclusion is supported by the USGS data at Norcross (USGS 2335000), the only site in this 36 mile section of the river that records turbidity levels. That USGS data confirm that the number and magnitude of peaking turbidity levels in that area increase significantly with increasing discharge rates (See Figures 3 and 4, and Table 3). The low turbidity levels are approximately equal at 5 FNU, indicating that the level and duration of the peak values affect the average turbidity by about 10%.

3. Effects of Erosion and Sediment Transport on Bull Sluice Lake

Suggested Scope - For this topic we have two suggestions for inclusion in the scope phase:

1. Development of a model using available USGS data to monitor changes in the Morgan Falls storage capacity. Such a model could include a combination of net flows in the Morgan Falls impoundment and the rate of change in elevation of Bull Sluice Lake to provide a storage volume relationship. Such a model could be used as often as necessary.
2. Implement a study of transported sediment above and below the Morgan Falls impoundment to provide an additional indicator of sediment deposited within the impoundment.

Discussion - Previous studies addressed potential active erosion within the Morgan Falls Dam impoundment (GA Power-1, 2006). The transported sediment that is being deposited appears to be the result of erosion well upstream of the impoundment as noted by the turbidity patterns observed at the Norcross USGS site (see Fig 3 & 4, and Table 3.)

The rowing community is active on the Morgan Falls impoundment daily, year-round. Our frequent observations of the river conditions indicate that the transported sediment has been causing increasing sandbar growth (in numbers and size) over 6 miles above Morgan Falls Dam. Several sandbars upstream of Morgan Falls Dam now span half the river width (See Figure 5). These growing sandbars force the river traffic into narrowing channels creating potential safety issues. When the Morgan Falls elevation is below 864, the water above these sandbars is too shallow for safe rowing and small power boats.

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Furthermore, the deposits above Morgan Falls Dam have formed a large area of very shallow water within 50 yards upstream of the Dam. The growth of these deposits and upstream sandbars continue to reduce the available storage behind the dam.

The 2004 study of the storage capacity at Morgan Falls Dam referenced 2001 aerial photography during a drawdown to 859 feet to establish a bottom profile that was used to estimate the usable storage capacity at that time. The resulting conclusion was that sediment deposition appeared to be approaching equilibrium within the Morgan Falls impoundment (GA Power-2, 2004). The observations of sandbar growth since 2001 would indicate that the storage capacity continues to decline significantly.

4. Impact of Turbidity on Fishing

Suggested Scope - Include a study of the impact of varying the Buford Dam peak discharge levels on turbidity measurements at Norcross.

Discussion - Excess turbidity in the river can clog fish gills impacting disease resistance, fish growth and development of eggs and larva. As the particles settle, they can cover the stream bottom and smother fish eggs and invertebrates in the food chain (US EPA, 2012).

A Georgia DNR study investigated fishing at 17 sites on approximately 25 miles of the Chattahoochee from Buford Dam to Roswell Road. This study developed a metric for measuring fishing harvest with their calculation of "catch per unit effort (CPUE)". The investigation found that average rainbow trout fishing results declined precipitously by over 75% (from an average CPUE of 0.64 to 0.13) when the turbidity level exceeded 12 NTU. This study also concluded that 16.5°C was the highest comfortable water temperature for trout (Klein, 2003).

The USGS graphs (Figures 3 and 4) and the summarized observations in Table 3 show that turbidity at Norcross regularly exceeds the 12 NTU level with higher peaks at a higher stream flow (discharge) rates.

The impact of average daily discharge temperature was considered for Cases 1 and 2 above. The typical 11.5°C discharge temperature at 600 cfs and the highest 15.3°C (typically in October) for the peak discharges were used for this calculation. For these two cases, the daily average discharge temperature is estimated to increase from 11.5°C for Case 1 to 12.2°C for Case 2. Therefore, reducing the peak discharge rates does not appear to have a detrimental on river temperatures which should be below 16.5°C for trout health.

5. Effects of Transported Sediment on Water Treatment Costs

Suggested Scope - Include a study of the effect of reducing Buford Dam discharge peaks on turbidity and the related water treatment plant costs.

Discussion - Increases in suspended sediment / turbidity in the river water can cause increased maintenance & process costs (e.g. coagulants, filters) for the treatment of the Atlanta/Fulton and DeKalb water intakes located in Alpharetta between Buford Dam and Morgan Falls Dam. A study on the Willamette River concluded that a 1% decrease in turbidity from the source water would result in a 0.25% to 0.35% decrease in the amount of sediment-related treatment costs (State of Oregon, 2010). This cost savings could be significant for an average 10% turbidity reduction.

Additionally, a Georgia Environmental Protection Division Guidance Manual for Preparing Public Water Supply System O & M Plans, May, 2000 has multiple recommendations related to turbidity and maintenance (Georgia EPA 2000).

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6. Challenges for Morgan Falls Dam Operation

Suggested Scope - Include a study of the effect of reducing Buford Dam's discharge peaks on the stability of Chattahoochee water elevation at Morgan Falls Dam.

Discussion – Reducing the discharge peaks would partially re-regulate the Buford Dam output. Buford Dam controls 76% of the Chattahoochee flow leading to Morgan Falls Dam (GA Power-3, 2004). The Georgia Power operators at Morgan Falls monitor 3 USGS gauges upstream of the Morgan Falls reservoir to meet the Atlanta Regional Commission's request for a minimum flow of 750 cfs below Morgan Falls at Peachtree Creek. The Buford discharge schedules are not useful to operators because they can change at any time and it takes 12 hours for Buford releases to arrive at Morgan Falls (GA Power-3, 2004).

Morgan Falls Dam operators achieve good results in re-regulating the downstream flow. However, the widely varying discharges from Buford Dam, often results in Chattahoochee gauge height cycles above Morgan Falls Dam of 6 feet or more (e.g. down from 865 to 862 then rising to 866) over 36 hours (USGS 2335810). When the Morgan Falls elevation is below 864, the sandbars and other submerged hazards create unsafe conditions for rowing and small power boats (See Figures 5 and 6).

7. Buford Dam's Role in Regional Power, On-Peak Power and Related Economics

Suggested Scope - Include a sensitivity study based on reducing Buford Dam's discharge peaks while maintaining the historical daily average power generated. The study would include effects on the power system, public safety, recreation and transported sediment.

Discussion, Generation Capacity - Power generated at Buford Dam appears to be a minor contribution to the public energy needs. The Southeastern Power Administration (SEPA) lists four "Systems" in the Southeast. Buford Dam is one of the ten dams in SEPA's GA-AL-SC System (SEPA web). The generation capacity of the Buford Dam hydro units is about 115 MW. Comparing Buford Dam's capacity to other electrical power sources in the SEPA GA-AL-SC System shows that Buford Dam's generating capacity is a relatively minor factor in the GA-AL-CS System and far less influence in that 3 state geographical area. Buford's capacity is:

- Less than 5% of SEPA's GA-AL-SC System hydro power capacity
- Less than 3% of the total Hydro generation capacity in GA, AL and SC
- Less than ½% of the total generating capacity in GA, AL and SC

Discussion, On-Peak Power - The timing of the 14 Buford Dam peak discharges that occurred during the hottest two weeks in 2012 (6/23 - 7/6/2102) is summarized below (see Table 4):

- The average daily elapsed time for all discharges was 3 hours. The weekday daily average was 3.4 hours.
- 18% of the weekday peak discharges were during the full 16:00 - 20:00 late afternoon times of on-peak demand
- 55% of the weekday peak discharges lasted for less than the full on-peak demand times
- 27% of weekday discharges occurred at off-peak demand times
- 36% of all discharges occurred at off-peak demand times such as midnight, or early afternoon

This pattern for the hottest time period in the year is similar to most other times, indicating that supporting peak power needs is not necessarily a priority for Buford Dam operations. Discharge from Buford Dam is often reduced on weekends causing severe lowering

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of the river levels affecting recreation on weekends and/or into the following week (See Figures 5 and 6). In these two weeks there was no discharge on Saturday 6/23.

Discussion, Power Generation Economics - The data in the USACE Hydropower Analysis indicates that the energy generated by Buford Dam has a baseline average annual energy value of $9.3 million or 6% of the total value of the nine dams in the ACF Hydropower System. Only Morgan Falls Dam with 3% of the system's capacity has a lower annual energy value. Buford Dam's energy value per MWH is $84/MW, the lowest of all 9 stations. The second lowest is West Point at $153/MW, nearly twice that of Buford Dam (USACE 2012). This indicates that the variable cost of an alternative thermal generation resource to replace lost hydropower generation is significantly lower for Buford Dam than other hydropower stations on the AFC system. Therefore reducing the Buford Dam peak discharge levels, while maintaining the average daily power generation, should have a minimal effect on the power system.

The following is a consideration of the average daily price for the generated power at Buford Dam. The USACE Hydropower Analysis projected future average generation prices of one MWH of on-peak and off-peak electricity energy (USACE, 2012). These prices were used in combination with the average weekday daily peak discharge duration (3.4 hours) from Table 4 to examine the weighted daily generation price for two cases (present and reduced peak discharge patterns). The on-peak and off-peak prices per MWH used in these cases are the average prices from USACE 2012 for June, July & August. Discharges for Case 4 were set to produce the same total daily discharge, and therefore the same average power generated via the large turbines, as Case 3.

Case 3: (present pattern) 3.4 hours discharge of 10,000 cfs at on-peak price of $96 and 20.6 hours of 600 cfs at off-peak price of $59.

Case 4: (reduced peaks pattern) 3.4 hours discharge of 3,000 cfs at on-peak price of $96, 9.9 hours discharge of 3,000 cfs at off-peak price of $59 and 10.7 hours of 600 cfs at off-peak price of $59.

For both cases the 24 hour average energy price was $64 per MWH, confirming that reducing the discharge peaks to 3,000 cfs would result in the same average energy price. Since hydropower is a relatively constant low cost, the higher the price during generation results in more cost effective power to the consumer. Given the conservative approach used for these cases, it appears that generating for a longer period of time at 3,000 cfs could have better financial results than using 10,000 cfs peaks for short times because:

A. Case 3 assumed that all of the peak generation was at 10,000 cfs, averaged 3.4 hours daily and occurred at times of on-peak power prices. The data shows that the only 2 days had 10,000 cfs peaks, while peaks for the other 12 days averaged less than 6,000 cfs. The 14 day average peak generation lasted only 3.0 hours daily and only 64% of the discharges were during on-peak price time (see Table 4).
B. Case 4 assumed that all power generated beyond 3.4 hours was at the off-peak price. The 3,000 cfs discharges actually would span more hours of on-peak price time, thus producing more low cost hydropower when prices would be higher.

The above figures indicate that Buford Dam's generation is not a major factor in the supplying the system average power requirements and discharging at 10,000 cfs is not required to meet on-peak demands. This is supported by USACE comments that releases are determined to meet water supply and minimum flow of Peachtree Creek with hydropower not being a direct factor (Robbins 2012).

If necessary, much of the other 95% of the available hydro power in this geographic region could be used to meet peak demand without detrimental effects on the 36 mile section of the river above Morgan Falls Dam. Additionally, there are several alternatives for fast response

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peaking power sources in combustion turbine facilities. For example, in nearby Jackson County, GA, Southern Company operates Plant Dahlberg. This plant consists of 10 combustion turbine units, with a combined capacity of 810 megawatts, about 7 times Buford's generating capacity (Southern Company web).

Summary of reasons to include the above items in the scope tasks for the Upper Chattahoochee

The 600 members of the rowing clubs that use the Chattahoochee feel that we are witnessing the slow disappearance of a unique environment of the river above Morgan Falls Dam due to excessive sedimentary deposition. The present pattern of the Buford Dam discharges has serious impacts on rowing safety (people and equipment) and the ability to enjoy this venue, as well as long term impacts on the river's ecology. International rowers have commented that this is one of the best rowing venues anywhere due to the 6.5 mile length of relatively flat water, it's year round availability, the protection from most strong winds provided by the river valley and the beautiful scenery.

It is critical to take actions that will improve conditions for general recreation and mitigate the growth of sandbars and deposits that result from the Buford Dam discharge patterns. We therefore recommend the following changes in Buford Dam operations to preserve this unique resource.

Recommendation

The Atlanta Rowing Club's recommendation is to change the water release pattern at Buford Dam from the present process, which uses extreme peaking discharges, to a more controlled process with far less hourly variation. This reduced peak release plan can be accomplished through a combination of controlling the number of active turbines and the volume through each turbine, similar to the present operation at Morgan Falls Dam. Average daily discharge rates could be maintained the while implementing a pattern of significantly lower peaks. These changes could be implemented quickly and at low cost. The specific objectives of the change to a reduced peak discharge plan should be:

1. Reduce the peak discharge rates and subsequent gauge height peaks so as to significantly reduce the risks to the general public. We propose a 6 month test in 2013. Given the benefit to public safety, reducing the peak discharges levels should be a high priority in 2013, before the seasonal increase in recreation within the Chattahoochee River National Recreation Area.
2. Reduce the transported sediment to lower the weekly average turbidity attributed to power generation discharges by at least 10% as measured at Norcross.
3. Coordinate with GA Power to maintain a minimum water level (elevation) at Morgan Falls Dam of 864 feet.

Benefits

The reduction in discharge peaks to meet the above objectives would result in the following benefits:

1. **Improved Public Safety** - This reduced peak release plan would pose less danger from rapidly rising water levels and current flow rates between Buford Dam and Morgan Falls Dam.
2. **Reduced Sedimentary Disposition** - Lower peak flows could reduce the total transported sediment by over 10%, mitigating the increasing silt deposits that restrict

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recreation upstream of Morgan Falls Dam. This would also slow the growth of sediment deposits that reduce the Morgan Falls storage capacity required to re-regulate downstream flow.

3. **Improved Conditions for Recreation** - The recommended plan would eliminate the dramatic changes in water levels and stream flow rates that affect rowing, general recreation and ecology above Morgan Falls Dam.
4. **Improved Fishing** - The reduction in transported sediment and turbidity would produce healthier conditions for trout.
5. **Reduced Water Treatment Costs** - The resulting reduced sediment/turbidity would decrease the related maintenance costs for DeKalb and Fulton Counties' water treatment plants that have intakes on the Upper Chattahoochee near Alpharetta.
6. **Economic Benefits** - Local economies and park revenues would benefit from the increased recreation activity throughout the CRNRA. There is also a potential for lower energy cost to consumers.
7. **Consistent With ACF Stakeholders Objectives** - This proposed controlled discharge plan should not affect the daily average river flow rates, the average daily power generated at Buford Dam, or conflict with the interests of other ACF Stakeholders.

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Figure 1. Peaking discharge patterns from Buford Dam (USGS 2334430)

Figure 1a. Buford Dam discharge at 1,165 cfs average discharge rate = 10 Discharges > 5,500 cfs (including 5 at 10,000 cfs) from 10/19 - 10/28/2012 (USGS 2334430)

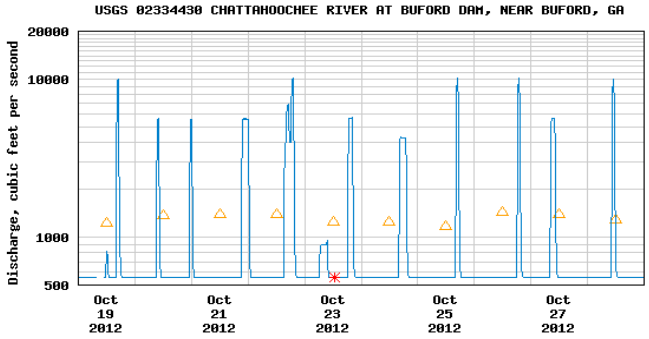
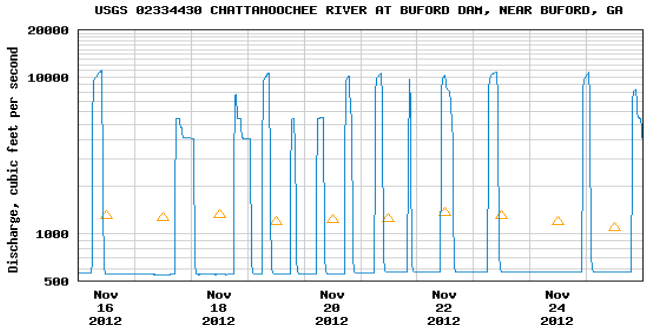


Figure 1b. Buford Dam discharge at 2,230 cfs average discharge rate = 13 Discharges > 5,500 cfs (including 8 at over 10,000 cfs) from 11/16 - 11/25/2012 (USGS 2334430)



- **The Buford Dam discharge pattern remains in "on-off" control mode, varying from 600 cfs to 5,500 - 10,000 cfs at both 1,165 and 2,230 cfs average discharge rates.**

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Figure 2. Discharge patterns over 20 miles downstream from Buford Dam

Figure 2a. Norcross discharge at 1,170 cfs average = 10 cycles from 700 cfs to over 2,000 cfs 10/19 - 10/28/2012 (USGS 2335000)

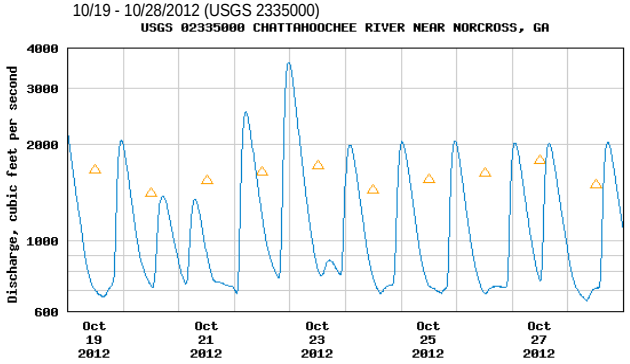
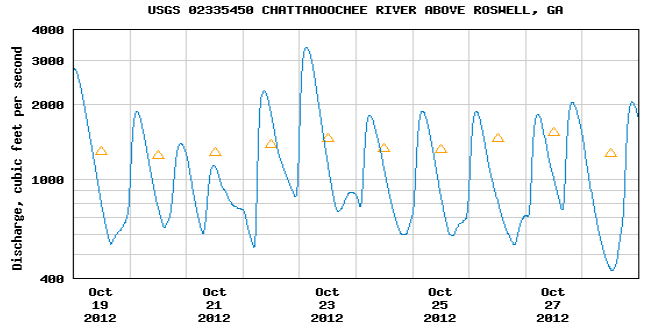


Figure 2b. At Roswell discharge at 1,115 cfs average = 10 cycles from 600 cfs to over 1,500 cfs 10/19 - 10/28/2012 (USGS 2335450)



- **The Chattahoochee experiences hourly increases of up to 5:1 in current flow (discharge) over 20 miles downstream of Buford Dam, increasing risks to wading fishermen, rowers and other recreational users.**

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Figure 3. Turbidity at Norcross for average flow of 1,170 cfs 10/19 - 10/28/2012

Figure 3a. Norcross discharge at 1,170 cfs average discharge 10/19 -10/28/2012 (USGS 2335000)

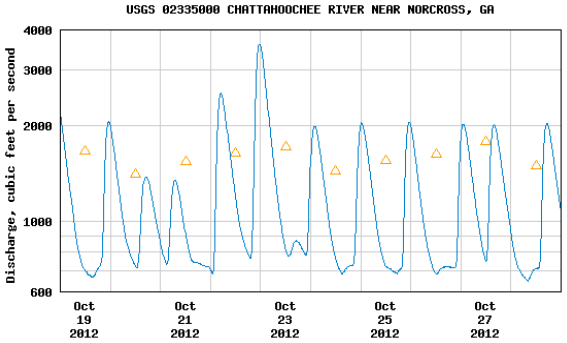
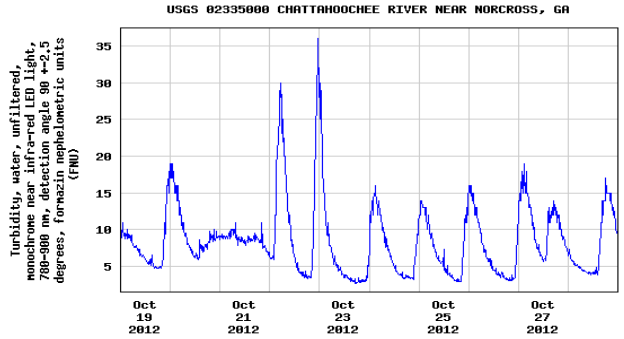


Figure 3b. Norcross turbidity at 1,170 cfs average discharge 10/19 - 10/28/2012 (USGS 2335000)



- **Turbidity peaks at Norcross increase as expected when discharge rate peaks above the 1,170 cfs average rate.**
- **Observations are summarized in Table 3.**
- **Measured rainfall was zero for the 10 day sample period.**

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Figure 4. Turbidity at Norcross for average flow of 2,320 cfs 11/16 - 11/25/2012

Figure 4a. Norcross discharge at 2,320 cfs average discharge 11/16 - 11/25/2012 (USGS 2335000)

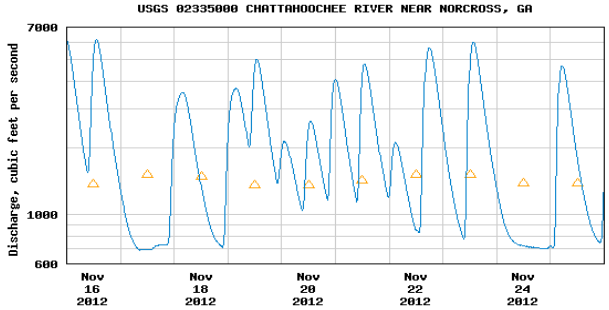
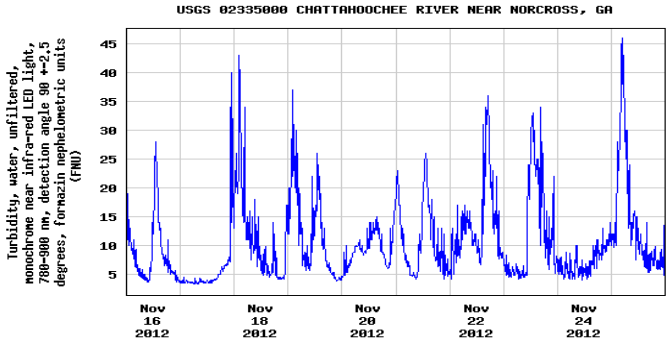


Figure 4b. Norcross turbidity at 2,320 cfs average discharge 11/16 - 11/25/2012 (USGS 2335000)



- **The peaking turbidity levels at Norcross increase dramatically as the average discharge rate increases from 1,170 cfs (Figure 3) to 2,320 cfs.**
- **The turbidity peaks are much higher and more frequent than at 1,170 average cfs.**
- **Observations are summarized in Table 3.**
- **Measured rainfall was zero for the 10 day sample period.**

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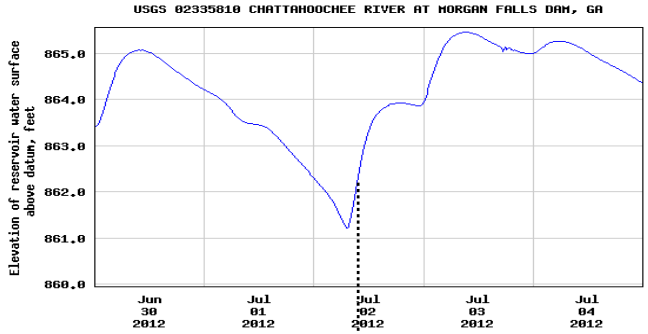
Figure 5. Chattahoochee River Exposed Sandbar and Morgan Falls Dam Water Level (elevation) 6/30 - 7/4/2012 (USGS 2335810).

Elevation of reservoir water surface above datum, feet (USGS 2335810)



Exposed sandbar 500 yards down steam from Azalea Drive River Park, 9 AM July 2, 2012.

- **Morgan Falls levels (elevation) often cycle 6 feet around the average of 865 feet.**
- **Bull Sluice Lake levels affect conditions over 6 miles upstream.**
- **This exposed sandbar is one of several that span 50% of the river width between GA400 and Bull Sluice Lake.**

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Figure 6. Effect of Buford Dam discharges on Bull Sluice Lake water levels 10/19 - 10/28/2012

Figure 6a. Discharge - Buford Dam 10/19 - 10/28/2012 (USGS 2334430)

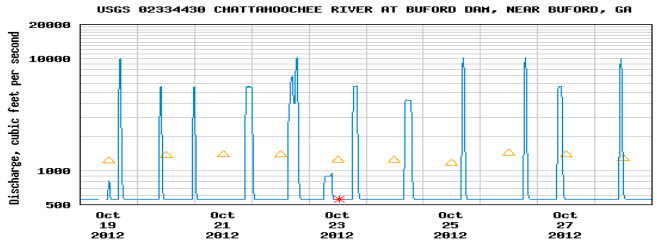


Figure 6b. Discharge - Morgan Falls Dam 10/19 - 10/28/2012 (USGS 2335815)

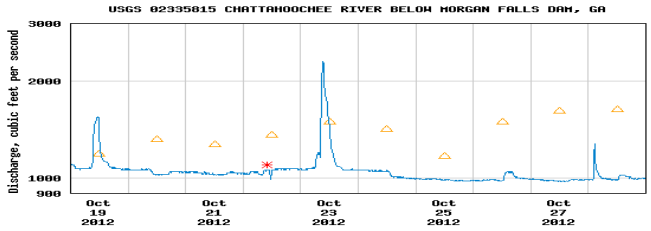
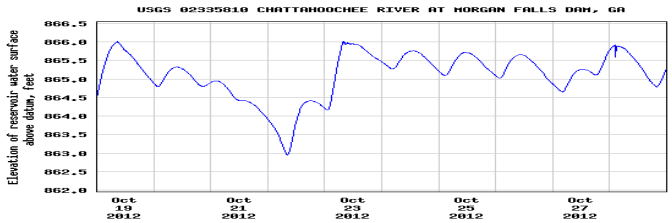


Figure 6c. Elevation - Chattahoochee at Morgan Falls Dam 10/19 - 10/28/2012 (USGS 2335810)



- **Morgan Falls operations manage a controlled discharge pattern to re-regulate the Buford Dam discharges.**
- **The peak levels of Buford Dam discharges cause dramatic level changes in the Chattahoochee River at Morgan Falls Dam and over 6 miles upstream.**
- **Measured rainfall was zero for the 10 day sample period.**

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Table 1. Upper Chattahoochee turbidity study – List of turbidity study data sets (Faye 1980)

Chattahoochee River near Leaf	Soque River near Clarkesville
Chestatee River near Dahlonega	Big Creek near Alpharetta (1)
Big Creek near Alpharetta (2)	Chattahoochee River at Atlanta (3)
Chattahoochee River at Atlanta (4)	N. Fork Peachtree Creek near Atlanta
S. Fork Peachtree Creek at Atlanta	Peachtree Creek at Atlanta
Woodal Creek at Atlanta	Nancy Creek tributary near Chamblee
Nancy Creek at Atlanta	Proctor Creek at Atlanta
Chattahoochee River near Fairburn (4)	Snake Creek near Whitesburg
Chattahoochee River near Whitesburg (4)	

(1) rise (2) peak and recession (3) regulated flow (4) intervening runoff

Table 2. Indexed calculations of suspended sediment for a base discharge of 1,140 cfs using the average regression constants of the 14 data sets (Faye 1980)

Buford Dam Discharge Rate	Discharge Indexed %	Suspended Sediment, Indexed %	**Case 1**: Indexed suspended sediment using weighted 600 and 10,000 cfs cycles, % mg/L	**Case 2**: Indexed suspended sediment using weighted 600 and 3,000 cfs cycles, % mg/L
600 cfs	52%	47%		
1,140 cfs	100%	100%		
3,000 cfs	160%	200%		106%
10,000 cfs	770%	1,120%	116%	

Indexed suspended sediment = % Suspended Sediment at % Flow X % Time at the Case discharge rates.

Table 3. Summary of turbidity changes at Norcross for 10 day intervals (USGS 2335000). Timeframes were selected for zero rainfall (See Figures 3 and 4)

Timeframe 2012	Average discharge at Norcross	Discharge Peaks > 3,000 cfs	Turbidity Peaks > 15 FNU	Turbidity Peaks > 25 FNU	Number of Buford Dam discharge peaks ≥ 10,000 cfs
Oct 19 - 28	1,170 cfs	1	7	2	5
Nov 16 - 25	2,230 cfs	7	14	10	8

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Table 4. Buford Dam Peak Discharge Timing 6/23 – 7/6/2012 (USGS 2334430)

Date	Day	Peak Discharge Timing	Discharge Peak, cfs	Discharge for Full On-Peak Load Time	Discharge for Partial On-Peak Load Time	Discharge at Off-Peak Load Time	Weekday Discharge at Off-Peak Load Time
6/23	Sat	No Discharge	--			**	
6/24	Sun	14:00 - 17:00	6,000		X		
6/25	Mon	15:00 - 18:00	10,700		X		
6/26	Tues	16:00 - 18:00	6,000		X		
6/27	Wed	13:00 - 15:00	4,000			X	X
		16:00 - 18:00	5,000		X		
6/28	Thurs	15:00 - 18:00	4,500		X		
6/29	Fri	14:00 - 18:00	6,000		X		
6/30	Sat	20:00 - 22:00	6,000			X	
7/1	Sun	20:00 - 23:00	6,000			X	
7/2	Mon	14:00 - 17:00	10,000		X		
7/3	Tues	13:00 - 15:00	6,000			X	X
7/4	Wed	21:00 – 23:59	6,000			X	X
7/5	Thurs	14:00 - 19:00	7,000	X			
7/6	Fri	14:00 - 19:00	5,500	X			
Total Weekday Discharge Hours				10	17	7	7

- **6/23-7/6 were the hottest consecutive 14 days in 2012**
- **The average daily elapsed time for all discharges was 3 hours. Weekday daily average was 3.4 hours.**
- **% Discharges that were during the typical 16:00 - 20:00 On-Peak demand times**
  - **18% of weekday discharges were during full 4 hours of On-Peak demand time**
  - **55% of weekday discharges were less than 4 hours of On-Peak demand time**
  - **27% of weekday discharges were during Off-Peak demand times**
  - **There was no discharge on 6/23**
  - **36% of all discharges were during Off-Peak demand times**