

STILL BRANCH REGIONAL RESERVOIR PERMITTING, OPERATION, MANAGEMENT AND STORAGE

Brant D. Keller PhD

AUTHOR: Director of Public Works and Utilities, City of Griffin, P.O. Box T, Griffin, Georgia 30224

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Abstract. The City of Griffin in 2006 completed the construction of Still Branch Regional Reservoir. This regional water source supplies finished drinking water to the City of Griffin and seven wholesale customers in the region currently with an anticipated four more to sign at a later date and time. This presentation will focus on thirteen years of permitting, conflict resolution, construction and management of the facility. The paper will outline the permitting process beginning with the U. S. Army Corp of Engineers, United States Fish and Wildlife Service, and host of other agencies involved in the permit process. The author will present an overview of property acquisition as well as negotiation and condemnation issues. In addition this paper will demonstrate exhibit newest technologies and process times and how they reduce money and manpower while still operating a high volume water treatment facility.

BACKGROUND

Still Branch Regional Reservoir is located 22 miles south of Griffin, Georgia. It is over 875 acres with 476 acres of water holding 3.5 billion gallons of water in supply. The transmission lines consist of 27.5 miles of high pressure water lines to transmit finished water to the regional system. The dam is 81 feet in height and 69 feet a pool elevation. This lake is a GADNR fish and wildlife project stocked with F1 Florida bass, catfish, shellcrackers and blue gills. The plant today is capable of producing 12mgd and will be expanded to 48mgd. The reservoir operates under seasonal stream flow conditions to ensure downstream conditions will not be impacted. The maximum 24 hours withdrawal is 48mgd and not to exceed a monthly average of 42mgd. The reservoir is capable of supplying the regions needs for the next 50 years.

INTRODUCTION

In 1993 the City of Griffin conducted a needs analysis projection model for its supply needs for the next 25 years to supply the customers. The current water supply Heads Creek Reservoir constructed in 1964 was not going to be able to meet future demands in the high growth

in the service area. When it constructed the Heads Creek Reservoir had a capacity of 1.0 billion gallons of storage. It was found that over the years one third of the volume was lost to sedimentation. This was mainly due to the sediment in the Flint River as raw water was pumped to the reservoir. There was no development up stream in the watershed other than the natural occurrence of sediment runoff. Several avenues were explored for restoring the original volume but none were feasible either financially or structurally.

After discussion with Georgia Environmental Protection Division, it was determined that a new supply reservoir was the appropriate solution to supply drinking water in this region of the state. It was determined that if it were to happen, Griffin would have to take the lead because of their existing distribution system and the financial whereabouts to finance the system from an operational standpoint.

Griffin proceeded to meet with GAEPD and define what the regional system would entail. Meriwether County, Spalding County, Pike County, City of Zebulon, City of Molena, City of Meansville and Coweta County were included in GAEPD's regional plan. Immediately Griffin began dialog with those governments and looked to them for long term contracts to satisfy the pay back of revenues bonds needed for the construction and building of the system. At the same time Griffin was exploring 21 potential sites for the location of the reservoir in conjunction with the Flint River and set a goal to be in operation in late 2000.

By 1997 the most suitable site was determined and presented to the appropriated State and Federal agencies for review and approval. Now the rest of the story.

Permitting Process 1998

After the site selection was finalized 22 miles from Griffin on Still Branch Creek, 4000 feet east of the Flint River in Pike County. The first draft submittal was submitted for comments in the summer of 1998 to USCOE, USEPA, USFWS, GASHPO, Alabama Department of Economic and Community Affairs, Northwest Florida Water Management District, GAEPD, for permit #980001900.

During this same time period the states of Georgia, Alabama and Florida were engaged in the Tri-State Water Compact negotiation. There was much discussion from Alabama and Florida in regards to this permit.

The USEPA had concern about the adverse affects on the biological community downstream in low flow conditions. Griffin was to proceed while working under an "Adaptive Management Plan". The plan was to address short and intermediated needs while monitoring data was made available and adjustments could be made. It consisted of data to be collected weekly but later reduced to monthly. Continuous flow monitoring devices were to be installed and maintained with parameters for DO, Temp, pH, TSS and turbidity. Biological stations were to be erected at 300 feet, 3,000 feet and 6,000 feet downstream monitoring for periphyton, benthic macroinvertebrates, fish and habitat. Originally wanted quarterly sampling for 3 years and bi-annual sampling for 2 additional years. Evaluate withdrawals downstream of the intake with $\leq 25\%$ of average annual daily flow (AAD).

The USFWS was concerned about the Oval Pigtail Mussel, Shiny-Rayed Pocketbook and Gulf Moccasin-shell and an added comment from the Savannah-Ogeechee Canal Museum and Nature Center concern for the Barbour's Map Turtle. The GAHPD division commented at site 90K48 listed potential for listing on the National Register of Historic Places. USEPA Wetlands Division wanted mitigation of 50.7 acres of wetlands for the 46 acres impacted on the reservoir site. Then both Alabama and Florida wanted the projected held in check till the Tri-State Water Compact was settled, which in 2006 it still has not been settled. Griffin sent notices to The Georgia Conservancy, Upper Chattahoochee River Keeper, Sierra Club Water Issues Group, Atlanta Audubon Society, Georgia Wildlife Federation and the National Wildlife Association.

Permitting Process 2001

After starting the process in 1998, it appeared in early 2001 that Griffin was not any closer to a permit than when it first applied. Georgia had gone through it's a drought in 2000 and Griffin was 21 days from running out of water for which received national attention in the media over this issue. Local officials began to question the process of getting the permit to eliminate such a water shortage.

City officials frustrated with the current status solicited assistance from U.S. Congressman Mac Collins to assist in getting the permit on the agenda and move forward with the miles of paper work. With Congressman Collin's help Griffin was able to work through some of the obstacles put before them. GAEPD aided in working out the details with the USEPA in addressing the USCOE's issues.

About the time the final draft was to be submitted for acceptance the Atlanta Journal/Constitution printed an unfounded article in the Horizon Section stating that "The Pigtoe Mussel was about to kill the reservoir project". Nothing further from the truth could have been written. The USFWS wrote a letter for thier retraction and commented to the paper that conditions had been worked out six weeks prior. This article was run at the same time public notice was due on the final draft.

In July of 2001 USEPA agreed to drop objections to the Still Branch Reservoir if Griffin would agree to Water Quality Conditions set forth by GAEPD, which Griffin agreed to six months previously. With that in hand, Griffin moved forward only to hit the drought of 2002 and this time was 12 days from running out of water and once again national attention was given to this water project. Before the project could be completed Griffin went though the drought of 2004.

Conflict Resolution

Griffin spent seven years in permit resolution which put the scheduled completion date of 2000 back to 2006. All the wholesale contracts entered into were crafted around the completion of the facility, except one, Coweta County. This was the largest contract of all and could have been a deal breaker. Griffin negotiated December 31, 2005 as the drop dead date to supply Coweta or they could back out of the contract.

After the permit approval Griffin had to go to the bond market to sell revenue bonds in November of 2002. Once funding was secured the project was turned wide open and then a new set of hurdles presented itself.

GAEPD could not issue the dam permit till the USCOE presented the final document which was lost somewhere. The dam permit came to Griffin in August of 2003. Do to the extensive delay in the original date of starting, Pike County where the reservoir resides had changed several of its broad members over and the current water authority and county commission were opposed to the placement of the reservoir in Pike County. It took four months just to get all the paper work through the system to get started. There were numerous meetings and many press articles blowing the project out of perspective. Some issues still have not been resolve at the time of this article.

All the property had been purchased but twenty acres and it took four months to resolve the acquisition. Next during the construction under contract one the 2.5 mile entrance road to the site was not designed to the profile and the road design and construction was in dispute for almost a year. Under the same contract there was a dispute on quantities in the earthen dam and selected fill material, which took 2 years to resolve.

Several easements were filed for condemnation basically to the amount of bad press coverage and the final 2 were not resolved until the summer of 2006 , six months after the plant was in production. During the construction of the pipeline which was contract number five, Pike County had several issues along the way impeding progress. The Griffin Regional Supply Reservoir Project was a test of negotiation skills.

Facility Design and Operation

Still Branch Regional Supply Reservoir treatment plant and pumping stations were designed with the most recent technological systems available. In today's world the cost of operation is just as important as the cost of construction. The final design of the plant for the year 2030 was laid out in the facility design. Currently the plant is designed to operate and produce 12mgd. As supply demand increases 3 additional 12mgd pods will be installed as needed. All pumps and filters currently are engineered and to be adapted for further construction and install minimizing the cost of future construction. New state of the art MagnaDrive variable speed pumps are installed at the river pump station, reservoir pump station

and the high service transmission pumps to the distribution system. This configuration allows the City of Griffin to reduce its manning requirements by 4 full time employees.

The entire system is operated in a computer control center where one operator can run the entire system and never leave the room. Further the operator can take a tough notebook computer anywhere in the plant site and operated the plant on a wireless system. The entire facility is monitored 22 miles away by the use of camera surveillance. This plant in the future will be fully manned with only 9 staff operating 24 hours a day capable of production 48mgd.

CONCLUSION

GAEPD has a great test case by example of how regional supply reservoirs can and will work. The question to be answered is a 13 year process feasible or is there a better way of getting permitting completed in a shorter span.