



## Metropolitan North Georgia Water Planning District

International Tower | 229 Peachtree St., NE | Suite 100 | Atlanta, GA 30303

TO: Executive Committee

FROM: Metro Water District Staff

DATE: November 21, 2017

RE: Plan Amendment Process Documentation and Staff Recommendation  
(Paulding County)

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The Metropolitan North Georgia Water Planning District received a request from Paulding County to modify the Water Resource Management Plan. According to the Plan Amendment Guidelines adopted by the Board on August 28, 2013, District staff is required to provide the Executive Committee a category recommendation concerning the plan amendment request prior to the meeting. The staff recommends the following change outlined below:

**Amendment Request:** Appendix B, Paulding County - Water

**Local Jurisdiction:** Paulding County

**Description:** Paulding County requests that Appendix B, Paulding County – Water, Note 2 be revised to read, “The Richland Creek reservoir and pumping system will be capable of providing 35 mgd to meet the County’s long term water supply needs. The intake in the Etowah River will have the capacity to pump at a peak rate of 47 mgd.” Additional background is provided in the attached letter.

**Staff Recommendation:** District staff recommends this request be categorized as a major amendment because modification of the plan is local in nature but may be objected to by other local parties.



## PAULDING COUNTY WATER SYSTEM

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240 Constitution Boulevard, Dallas, Georgia 30132  
Telephone: 770-222-6850 / Fax: 770-222-8815

November 20, 2017

Daniel E. Johnson, P.E.  
Manager  
Metropolitan North Georgia Water Planning District  
229 Peachtree Street NE, Suite 100, International Tower,  
Atlanta, GA 30303

Dear Mr. Johnson,

This is a request for an amendment to the Metropolitan North Georgia Water Planning District's Water Resource Management Plan. Specifically, our request is to modify note 2 to the Paulding County Water Summary in Appendix B to read:

**The Richland Creek reservoir and pumping system will be capable of providing 35 mgd to meet the County's long term water supply needs. The intake in the Etowah River will have the capacity to pump at a peak rate of 47 mgd.**

The yield analysis for the Richland Creek Reservoir system established that a peak day withdrawal of 47 mgd is needed to produce the required minimum yield of 35 mgd. An excerpt from the Yield Analysis is attached to this letter as Exhibit A. The supply for the Richland Creek Reservoir is substantively based pumped flow to from the Etowah River during high flow periods making these peak flow rates critical to providing water supply

This request is consistent with the U.S. Army Corps of Engineers Section 404 permit (404 permit) for the Richland Creek Reservoir. The 404 permit requires compliance with the Biological Opinion issued by the Fish and Wildlife Service on March 8, 2013. The Biological Opinion states that the reservoir and pumping system will be capable of providing 35 mgd to meet the County's long term water supply needs. The intake in the Etowah River will have the capacity to pump at a peak rate of 47 mgd. An excerpt from the Biological Opinion discussing the Pumped Storage Design is attached to this letter as Exhibit B. The State of Georgia's 401 Water Quality Certification is also based on the 47 mgd peak pumping system capacity. Both the 401 Water Quality Certification and 404 permit were public noticed by the respective agencies.

Please contact me at 678-224-4080 if you need any further information or clarification on this request.

Sincerely,

A handwritten signature in cursive script, appearing to read "Laurie E. Ashmore".

Laurie E. Ashmore, P.E.  
Director

# Exhibit A

## Excerpt from the Richland Creek Reservoir Yield Analysis dated June 2014

### 3.0 Yield Model Results

**3.1 Model Parameters.** As discussed previously it is uncertain at this time whether Allatoona will continue to be operated under the same guidelines that have prevailed since the late 1980's or under the proposed guidelines issued March 1, 2013 and which are currently undergoing public review. Therefore two separate sets of yield calculations were performed to ensure that the Richland Creek project could meet water supply goals under either Allatoona operating policy. The primary difference in the two policies, insofar as water supply for Richland Creek is concerned, has to do with minimum release rates from Allatoona during extended drought periods.

Fixed parameters for the yield analysis include the reservoir geometry and low flow protection requirements.

A number of variable parameters were utilized in the iterative calculation process to find results based on various combinations of inputs. Key inputs to the yield model are discussed below.

- Initially, calculations were performed with a number of different Low Flow Protection (LFP) criteria in order to identify LFP criteria compatible with yielding the required water supply while also being suitable to Georgia EPD which has authority over minimum in-stream minimum flow in Georgia. This process resulted in adoption of the criteria outlined in article 2.2. After concurrence from state and federal agencies, yield calculations were computed for the adopted LFP criteria.
- Pump capacity at the Etowah intake. A low end pump range of 10 mgd was used based on anticipated variable speed pump turn-down range. An upper pump capacity range of 47 mgd was found to be needed to produce the required minimum yield of 35 mgd in conjunction with adopted LFP restrictions. Although the water withdrawal permit request is for 47 mgd, a scenario was run with a pump capacity of 60 mgd to evaluate sensitivity of yield to higher pumping limits.
- Wastewater returned to the Etowah River in the reach downstream of Allatoona has a significant influence on yield results as explained in article 2.3.4. Values ranging from 20 to 50 mgd were input to the yield model.
- As described in articles 2.3.1 and 2.3.2, two sets of input flow for the Etowah River are identified and each of these was input to the yield model.

**3.2 Yield Results.** Table 4 below shows results of yield calculations for a range of operating variables for each of the two stream flow sets discussed in articles 2.3.1 and 2.3.2. With the historic river flow set, the minimum required yield of 35 mgd can be achieved with a corresponding return wastewater value of 20 mgd. With river flow based on the proposed Allatoona operations, the 35 mgd yield requires a return wastewater value of at least 28 mgd. Since the expected wastewater return at year 2050 is expected to be in the range of 30 to 50 mgd, the design yield would be satisfied by both the historic or the proposed stream flow input scenario.

**Exhibit B**  
**Exerpt from the Biological Opinion dated March 8, 2013**  
**for the Richland Creek Reservoir**

**Pumped Storage Design**

The reservoir will be a “pumped storage” type, with water pumped from the Etowah River approximately 3.5 miles upstream of the Richland Creek confluence (Figures 2 and 3). The reservoir will be located on Richland Creek, which is a small tributary of the Etowah River. The reservoir itself will have a drainage area of only 2.5 square miles and will receive only a small portion of inflow from the natural watershed. The reservoir and pumping system will be capable of providing 35 mgd to meet the County’s long term water supply needs. The intake in the Etowah River will have the capacity to pump at a peak rate of 47 mgd.

