

**Environmental Management Commission
Water Allocation Committee
Minutes**

**May 8, 2019
9:00 a.m.**

On May 8, 2019, the Water Allocation Committee or WAC met in the Ground Floor Hearing Room at the Archdale Building in Raleigh, North Carolina.

WAC Members in Attendance:

Dr. Suzanne Lazorick (WAC Chairwoman)
David Anderson (WAC Vice-Chair)
Shannon Arata
Charlie Carter
Mitch Gillespie

Others Present:

Gerard Carroll
Marion Deerhake
Dr. Stan Meiburg (EMC Chairman)
Dr. Albert Rubin
JD Solomon
Julie Wilsey
Philip Reynolds (Attorney General's office)

I. Preliminary Matters:

In accordance with North Carolina General Statute §138A-15, Chairwoman Lazorick asked if any WAC member knew of a known conflict of interest or appearance of conflict with respect to items on the May 8, 2019 WAC agenda; none of the committee members identified a conflict. Chairwoman Lazorick asked if there were any comments or corrections regarding the minutes from the March 13, 2019 meeting. There were no comments or corrections. Mr. Anderson made a motion to approve the March 13, 2019 meeting minutes. The motion was seconded by Ms. Arata and the March 13, 2019 minutes were unanimously approved.

Tom Fransen, DWR Water Planning Section Chief, was recognized for his many years of service and contributions to water resources planning efforts across the state as well as his contributions to the diverse programs administered by the Division of Water Resources and his involvement with the Water Allocation Committee. Mr. Fransen is due to retire from the state effective June 30, 2019.

II. Information Items:

A. Managing Reservoirs for Water Supply

Kim Nimmer (NC Division of Water Resources)

Ms. Nimmer provided a brief and broad overview of lakes and reservoirs in North Carolina utilized for public water supply. She stated that there are 103 reservoirs identified by 83 public water systems as providing a regular or emergency water source. The water supply reservoirs are divided into two main categories: hydropower with 17 reservoirs and municipal with 86 reservoirs. More details were provided regarding the ownership of the hydropower reservoirs as well as the number of water systems and the population served by each type of reservoir.

Steve Drew (City of Greensboro, Water Resources Department)

The Greensboro Water Resources Department has 355 employees and provides water, wastewater, and stormwater services to 310,000 people. There are two water treatment plants that have a combined capacity of 54 million gallons per day (mgd). The current average daily demand is 33.5 mgd. Mr. Drew stated that Greensboro has three “robust” creeks, but no rivers, and relies on three man-made impoundments with a 185 square mile drainage basin to supply the city with water.

The Lake Townsend Reservoir has a labyrinth spillway build in 2010; its design allows for failure of the two upstream dams. Lake Townsend has a three-tiered minimum release schedule to adjust for different stages of water use restrictions. The Lake Brandt Reservoir was constructed in 1960 and has a gated concrete spillway and sluiceway. The Lake Higgins Reservoir is the oldest, constructed in 1956 to raise the dam over the existing earthen embankment. When full, the three reservoirs collectively hold approximately nine billion gallons of water.

Greensboro’s interconnections with neighboring water systems have greatly increased the system’s resiliency, redundancy, and operational flexibility. Mr. Drew emphasized the importance of good relationships with neighboring water systems, and that since established in the 1990s, the interconnections have served beneficial purposes beyond just alleviating shortages during drought conditions. The interconnections have also provided water during periods of construction, repairs, and upgrades thereby making regular maintenance easier.

Questions and Discussion:

Dr. Meiburg commended the emphasis that Greensboro has placed on collaborative relationships and being proactive on addressing emerging contaminants. He also asked how the system has responded to recent hurricanes and extreme weather events. Mr. Drew responded that overall the system has responded well, largely due to the effective training the staff have received. He said the Greensboro Water Resources Department applied storm data to computer models to anticipate the affects on Greensboro’s water system. The operators were then trained based on the outcome of the modeling results. The modeling process has provided useful predictive analyses and enabled management

to make release decisions in advance. However, recent storms have overwhelmed the city's sewer collection system.

Greg Flory (Piedmont Triad Regional Water Authority)

Mr. Flory stated that the PTRWA is a regional partner with the City of Greensboro and that Randleman Lake represents a regional partnership for water supply. Randleman Lake was originally planned in 1937 by the U.S. Army Corps of Engineers (USACE) to be a 12,000-acre project for flood control and recreation. By 1987, the USACE abandoned the project due to cost concerns. The PTRWA was formed in 1986; the six-member governments (Cities of Archdale, Greensboro, High Point, Randleman, Town of Jamestown, and Randolph County) entered an Interlocal Agreement to pursue the project for water supply. The project was reduced to a total of 6,000 acres, with a 3,000-acre reservoir and 3,000 acres as conservation buffer for water quality. The lake was assessed to have a 48-million-gallon storage capacity; water allocation to the six members is based on percent ownership. An interbasin transfer was granted in 1991 allowing the transfer of 28.5 mgd from the Deep River Basin to the Haw River Basin and 2.0 mgd from the Deep River Basin to the Yadkin River Basin.

Construction on the dam began in 2001. The dam stands 102 feet above the streambed and is 2,090 feet in length. There is no ability to store and release water for flood control. Dam construction was completed in 2003 and the reservoir was filled by summer 2007. The project also included 25 roads and bridges that needed to be realigned or constructed, reservoir clearing, wetland mitigation, construction of transmission lines, and relocation of a wastewater treatment plant discharge point. The associated water treatment plant was initially sized for 12 mgd and can be expanded to 48 mgd; current production is 14.7 mgd. PTRWA is a water wholesaler and works directly with their six partners; there are no retail customers.

Randleman Lake is also a location for regional recreation. There is a marina and park on the lake, with recreational fishing from boats and piers. Only electric and self-propelled boats are allowed. In 2006, PTRWA received law enforcement authority. Activities that are regulated include fishing, protection of the no impact buffer zone, management of aquatic weeds, security for PTRWA property and facilities, buffer reforestation, stormwater education, and emergency response to pollution incidents.

The PTRWA's long-range planning seeks to meet the needs of its members individually as well as collectively. A Capital Improvement Plan has been developed to help ensure funding for long-term renewal and replacement needs of the system and help plan for future expansions. The Plan also helps manage the health and viability of the reservoir, meet downstream flow requirements, and plan for increased withdrawals. The PTRWA's Drought Contingency Plan balances the needs of partners with the system's interdependencies while maintaining permit and contractual requirements. Mr. Flory attributed the keys to PTRWA's success to strong partnerships, flexibility, and planning from a regional perspective.

Questions and Discussion:

Dr. Meiburg asked whether granulated activated carbon had been helpful in addressing emerging contaminants in the water supply. Mr. Flory responded that it had been helpful, but they weren't out of the woods yet. Dr. Meiburg also asked whether the wetland mitigation was working. Mr. Flory responded that they had been pleased with the survivability results of vegetation after a 5-year monitoring phase, but it is hard to determine the effectiveness and noted that nutrient levels tend to increase during the summer.

Tony Young (U.S. Army Corps of Engineers, Wilmington District)

Mr. Young noted that he manages five hydropower projects, four of which are in North Carolina (W. Kerr Scott, B. Everett Jordan, Falls Lake, and John H. Kerr). Each project has Congressionally authorized purposes, which include hydropower, flood control, water quality and flow augmentation, recreation, water supply, and fish and wildlife enhancement. The rules that govern the management of the projects help provide predictable responses to varying conditions and include drought deviation plans. One of the USACE's management goals is to actively inform stakeholders; Mr. Young's office conducts weekly calls to provide status reports and solicit feedback.

USACE reservoir management includes tracking each storage pool separately (flood storage, sediment storage, and conservation storage, which can be further sub-divided between water supply, water quality, and power). The storage availability in one storage pool does not necessarily affect the availability of storage in the other pools. Flood operations involve the temporary storage of floodwaters and the later release at a controlled and less-damaging rate. Releases from reservoirs start once downstream conditions improve and are based on water-on-the-ground conditions. The USACE does not pre-release water based on rain forecasts in case actual events turn out differently than predicted. Downstream flow targets also help govern the release schedule, both for releases following flood conditions as well as during periods of low flows.

Approximately one-third of Jordan Lake's conservation pool is allocated to water supply (this does not include Jordan's flood storage and sediment storage pools, which are tracked separately). The estimated yield for the water supply pool is approximately 100 mgd. All of the water supply pool has been allocated to the State of NC, which in turn is reallocated to local water systems, as approved by the EMC. The water supply pool is close to being fully allocated, however currently between 25-30 mgd is being withdrawn, so the water supply pool is not fully utilized. Recently, the Falls Lake conservation pool was reallocated to provide a greater percentage of the water supply pool to the City of Raleigh, reducing the percentage allocated to the water quality pool. The estimated yield now available to Raleigh is approximately 84 mgd. This reallocation was possible because Raleigh's wastewater return flow enters the Neuse River downstream of Falls Lake, approximately 10 miles above the target flow point in Clayton. As more water is withdrawn from Falls to meet Raleigh's growing demand, the flow returned to the Neuse River will also increase, enabling the target flows in Clayton to still be achieved.

Questions and Discussion:

Ms. Deerhake asked whether sediment accumulation has been a problem in the USACE reservoirs. Mr. Young replied it hasn't yet. There has been sediment accumulation noted in recent surveys, but it has largely been on track with what was expected and hasn't exceeded the volume allocated in the reservoirs' sediment storage pools.

III. Concluding Remarks:

Chairwoman Lazorick asked if there was anything else that needed to be discussed or if there were other comments. There were no additional comments by the committee members or staff. The meeting was adjourned.

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