

**Environmental Management Commission
Water Allocation Committee
Minutes**

**July 10, 2019
9:30 a.m.**

On July 10, 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
Dr. Stan Meiburg (EMC Chairman)

Others Present:

Donna Davis
Marion Deerhake
Pat Harris
John McAdams
Margaret Monast
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 July 10, 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 May 8, 2019 meeting. There were no comments or corrections. Mr. Carter made a motion to approve the May 8, 2019 meeting minutes. The motion was seconded by Ms. Arata and the May 8, 2019 minutes were unanimously approved.

II. Information Items:

A. Update on Rule Re-adoption Timeline for 15A NCAC 02E: Water Use Registration and Allocation (Nat Wilson, DWR)

The 02E rule has five sections with a total of 27 rules; all rules have been placed in the category, "necessary with substantive public interest." The Division of

Water Resources intends to recommend that the RRC establish a deadline of January 31, 2021 for the EMC to readopt all 02E sections.

Questions and Discussion:

Dr. Meiburg observed that 02E is a significant set of rules and asked which will likely attract the most public attention. Mr. Wilson offered that the IBT rule (Section .0400) may be the most contentious. Dr. Meiburg went on to ask about the gap of time that has occurred in the process for the re-adoption of the 02E rules. Mr. Wilson replied that staff were instructed to wait for litigation related to the challenge to an IBT certificate to be resolved, and the Division wanted the final reduction phase for the CCPCUA (central coastal plan capacity use area) to be complete. Since there was interest in keeping all the 02E rules together for the re-adoption process, all were held back due to the delays related to the two sections mentioned.

B. Water System Efficiency: Perspective from the City of Raleigh (Ed Buchan, City of Raleigh)

Raleigh is the second largest utility in North Carolina serving over 600,000 residents across seven different municipalities. The current average daily water demand is over 51 million gallons per day (mgd), which is carried through over 2,500 miles of water lines (the approximate distance from Raleigh to Las Vegas). Most of the water demand goes to the residential sector. Approximately 80% of Raleigh's water comes from Falls Lake and 20% from Lake Benson.

In 2007, Falls Lake was the city's sole water source and drought reduced its water supply pool to only 20% remaining on December 25, 2007. Records showed that the average irrigation demand in the summer of 2007 was about 20 mgd greater than the demand during cooler months. This severe shortage and threat to the city's water supply led Raleigh to evaluate approaches to improving efficiency, which were grouped into two broad categories: people (customers) and processes (the utility).

Raleigh took steps to change water use behavior, addressing both indoor and outdoor water use. One tactic targeted the cost of water, using tiered residential water rates and applying the highest tier to irrigation accounts. The city also installed separate irrigation water meters and incentivized water efficient fixtures indoors. Raleigh switched to monthly billing with the hope of making customers more aware of how much water they used each month and the corresponding cost. The city also adopted rates that reflect the true cost of service, to encourage customers to conserve and to make the utility more sustainable. The efforts that the city has taken over the past decade have stabilized demand. Raleigh is using less water today than in 2007 despite an increase in population of 130,000 over that time.

There have also been efforts to reduce the loss of non-revenue water, formerly known as "unaccounted for water." The city has worked to identify and rectify

losses associated with leaks, theft/tampering, fire pump exercising, billing and data errors, meter inefficiencies, process/flush water, and water lost during line breaks. All residential meters were replaced by 2010 and the city is currently replacing large meters. Raleigh has worked to improve its accounting of unavoidable water use, such as metering plant process water, recording water used for line flushing, and estimating water lost during line breaks. The city has tried to reduce and eliminate leaks in its system, using data loggers to locate leaks and using water main break data to guide and prioritize line replacements. The city's efforts have led to a reduction in the percentage difference between billed water and metered water; the percentage gap has been reduced from 15% to 6% between FY2014 and FY2019. Improving the utility's efficiency has led to benefits that include the more efficient use of a limited resource, reduced revenue loss, deferment of substantial new capital improvement projects, and more stable demands and revenue projections.

Questions and Discussion:

Dr. Meiburg asked about the importance of interconnections and what the city has done regarding full cost pricing. Mr. Buchan commented that the City of Greensboro is a leader in the state when it comes to interconnections. Raleigh did not pursue interconnections with neighboring utilities historically. However, Raleigh is now working more closely with its neighbors to establish interconnections, improve communications, and test the capacities of interconnected lines. Regarding the pricing, there are lower rates for less water use with the tiered rate structure, which can be adjusted if needed.

Mr. Carter asked whether Raleigh is connected to lakes in the Roanoke River basin. Mr. Buchan replied that sourcing water from the Roanoke River basin would trigger the need for an IBT. Raleigh was recently successful in its request to the U.S. Army Corps of Engineers to re-allocate Falls Lake in order to increase the water supply pool. The construction of a new reservoir (Little River) to the east of the city is still an option but will likely not be pursued until around 2045 when Raleigh's water supply will again need to be expanded.

Ms. Monast asked how Raleigh estimates future availability and does it share best practices with other utilities? Mr. Buchan stated that Raleigh works with the Triangle Partnership to forecast regional growth and needs, including water demand and long-term water availability. The OASIS hydrologic model has been used to model and evaluate flow data from the past 80 years to help inform future projections and drought triggers. Raleigh is also trying to factor in climate variability when considering future needs. The AWWA annual conferences provide a platform for utilities around the state to come together, share, and learn from one another.

Ms. Deerhake asked whether Raleigh has been approached by smaller communities to serve as a mentor? Mr. Buchan mentioned there had been an

event highlighting regional interconnections sponsored by the UNC School of Government, but not many small towns/utilities attended.

C. Trends in Water Use Across North Carolina (Austin Thompson, UNC School of Government, Environmental Finance Center)

To evaluate trends in water use across the state, different types of data are available: local water supply plans, data from the USGS, the Annual Finance Information Report, and customer level usage reported by utilities. Water demand can be measured as the number of gallons per connection per month, as MGD (million gallons per day) total, or as gallons per capita per day.

The main takeaways from this presentation are: water usage patterns differ in different regions of the state, overall water usage is falling across the state, and water usage per connection is falling statewide.

For this evaluation, there was a sample group of 119 utilities; data from these utilities were analyzed and found to be representative of the entire group of utilities across the state. From the sample of 119 utilities, most of the water use (from years 2002, 2007, 2012, 2016, and 2017) was residential. The data show that there was a decline in water use over time between 2002-2017. The median usage per connection dropped from 169.7 gallons/day in 2002 to 120.5 gallons/day in 2017.

One utility-level analysis was provided for the Town of Fair Bluff, NC. Fair Bluff is located along the Lumber River and suffered flooding associated with Hurricanes Matthew and Florence. Fair Bluff is one of five towns in southeastern North Carolina that was part of a thorough viability analysis by the Division of Water Infrastructure. The analysis found that both the number of water customers and the water use per customer for Fair Bluff had declined over the period from 2002-2017. There was a dramatic reduction (31%) in the number of customers in 2016-2017 following the hurricanes. The cause for the reduction in water use per customer, both in Fair Bluff and statewide, can be attributed to a number of causes including: increased water rates, increased efficiency (water saving appliances, awareness of water use and waste), and impacts of weather. Weather can impact water demand, but it is difficult to predict especially as more extreme events are becoming more common.

Questions and Discussion:

Dr. Meiburg asked whether household trends that have led to a reduction in the number of persons per household have affected the decrease in demand per household connection. Ms. Thompson responded that there has been some tracking of the size of households and other factors that affect efficiency.

Ms. Deerhake asked about the cause for an increase in per customer consumption in the graph shown for Fair Bluff between 2012-2016. Ms. Thompson responded that she is weary of year-to-year changes, that it is better to focus on the greater

trends that appear over longer periods of time. That increase was during a period of economic rebound, which may have influenced water demand.

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.