

**Environmental Management Commission
Water Allocation Committee
Minutes**

**July 12, 2017
9:00 a.m.**

On July 12, 2017, 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:

Clyde Smith, Chair
David W. Anderson, Vice-Chair
Charles Carter
Charles Elam
Bill Puette
JD Solomon, EMC Chair
Julie A. Wilsey

Others Present:

Marion Deerhake
Mitch Gillespie
Steve Keen
Dr. Suzanne Lazorick
Dr. Albert Rubin
Richard Whisnant
Jennie Hauser, Attorney General's office

I. Preliminary Matters:

In accordance with North Carolina General Statute §138A-15, Chairman Smith asked if any WAC member knew of a known conflict of interest or appearance of conflict with respect to items on the July 12, 2017 WAC agenda; none of the committee members identified a conflict. At Chairman Smith's request, Ms. Wilsey made a motion to approve the May 10, 2017 meeting minutes. The motion was seconded and the May 10, 2017 minutes were unanimously approved.

II. Informational Items:

A. Water – Energy Nexus (Jeff Lineberger, Duke Energy)

Mr. Lineberger's presentation focused on the interaction between and demands on water supply and energy generation in the Catawba-Wateree River Basin. There are 11 reservoirs licensed by the Federal Energy Regulatory Commission (FERC) in the basin. The Catawba River Basin was the first river basin in the country planned for power generation. While there are 252 billion gallons of usable water storage in the system, this only represents approximately 7% of the annual rainfall

in the basin. Two million people demand on drinking water from the Catawba River system. The FERC license renewed in 2015 also balances other needs, including those for power generation, recreation, fish, wildlife, and water quality.

The relative withdrawal and consumption rates for different power generating types (i.e., coal, nuclear, natural gas, and renewables) were presented. The greatest water demand is from nuclear power generation.

Mr. Lineberger discussed the importance of forming partnerships for water resources planning. The Catawba Wateree Water Management Group and the Catawba Wateree Drought Management Group are two examples of active partnerships working together for long-term planning and water management in the basin. The Water Management Group has been around since 2007, has completed 25 technical projects, and has developed a Water Supply Master Plan that looks out to the year 2100. The Drought Management Group oversees implementation of the Low Inflow Protocol (LIP), the most important drought management tool in the basin. Long-range water management planning includes forecasting water supply needs in the future for electricity, public water supply, agricultural and industrial uses; the Water Supply Master Plan considers these different sectors and demands.

Several of the key recommendations of the Water Supply Master Plan were presented, which included the need to increase water use efficiency, lower critical water intakes, raise target lake levels during summer months, and enhance the drought responsiveness through Low Inflow Protocol. Mr. Lineberger noted that water customers in the basin have become more efficient, since residential water use today is close to what it was in 2005, even though the population has grown substantially during that time.

Mr. Carter asked Mr. Lineberger to explain the release schedule under the new FERC license. Mr. Lineberger briefly explained how the LIP regulates releases from reservoirs during periods of drought to keep more water in the lake until rain returns, while still meeting the minimum flow releases required under the FERC license. Under the new license, Duke has agreed to implement changes in the release scheduled within one day, where previously the transition time had been five days. Chairman Smith asked whether Duke Energy has an interest in the Gafney area. Mr. Lineberger responded that Duke has a license but has not committed to building yet. The main reason Duke hasn't committed to building is due to lower natural gas prices, as well as increased customer energy efficiency. Chairman Solomon asked, based on the experience with the Catawba Wateree Water Management Group, Mr. Lineberger recommended getting different stakeholders from different sectors to the table. Mr. Lineberger said that it takes a catalyst. In the case of the Catawba system, it was regulation and the FERC relicensing process. The most requested study as part of that process was looking at consumptive water use and the resulting impact on lake levels. Additionally,

the FERC relicensing process had unforgiving deadlines, which included the stakeholder process.

B. Hydrologic Model Water Demands for Electricity Generation
(Don Rayno, N.C. DWR)

Hydrologic modeling focuses on surface water quantity and provides a broad perspective based on the available data. DWR uses approximately 80 years of water flow data in the hydrologic models that have been developed. The model compares current and projected future demands to historic water availability. The focus of the models is on low flow periods, since the concern is regarding water shortages in long-range water supply planning. Withdrawal for electricity generation is included in the modeling, along with water demand from other sectors and users, and ecological impacts are addressed. Hydrologic models look at withdrawals from the river basin as well as return flows.

DWR has completed hydrologic models for the following river basins with hydroelectric power plants: Catawba-Wateree River Basin, Yadkin-Pee Dee River Basin, Broad River Basin, Roanoke River Basin, and the Cape Fear-Neuse River Basins. Model revisions are based on new data provided by Duke Energy for future projected demands. DWR works closely with power companies when developing and revising the state's hydrologic models to include their water use projections.

Chairman Solomon asked how DWR knows the accuracy of the per capita use data included in the models, i.e., that the demand numbers aren't inflated. Mr. Rayno responded that DWR can do a basin comparison in terms of population growth. He also stated that DWR gets its information directly from the water utilities. He also emphasized that it is a projection, based on what the utility expects to need in the future in order to make needed investments and be able to meet the demand of their customers. Mr. Rayno expects the utilities have done the analyses to know what they will need to supply and based on what they will be able to invest in for system expansion, approved development plans, etc. Chairman Solomon followed up and asked what if the utility wants to keep high per capita consumption numbers. Mr. Rayno said that water utilities are required to conduct extra planning when their projected future demand reaches 80% of the estimated future supply, as reported in their Local Water Supply Plan submitted to DWR. Water systems are also required to have a Water Shortage Response Plan, which forces them to look at what they will actually need. He further stated that most per capita use reported in LWSPs over the past 10 years has been decreasing, as utilities are able to supply more customers with the same amount of water.

Mr. Elam asked whether the new plants that Mr. Rayno mentioned during the presentation were water treatment plants. Mr. Rayno explained that the plants mentioned during the presentation were referring to new power plants. This

information is included in the development of hydrologic models in order to account for the water demand from those power plants. Mr. Elam then asked whether there is any way to estimate the impact of groundwater use? Mr. Rayno answered that the impacts from groundwater withdrawal on surface water shows up in stream gage data, which is entered into the hydrologic model. Another group within DWR monitors and studies groundwater trends; there is a lot of interest in the connection between groundwater and surface water. Additionally, the U.S. Geological Survey is conducting a study that is looking at the impacts of coastal groundwater use. Mr. Whisnant stated there was a recent story in the press about a USGS report about declining or lower stream flows than had previously been projected based on historic flows. Should we be worried that the historical record won't be a very accurate extrapolation into the future? Mr. Rayno responded that he was not familiar with the recent report, but after the 2008 drought, the USGS had looked at low flow conditions across the state. What is known as the "7Q10" is a common metric, which refers to the lowest flow conditions over a 7-day period, expected to occur every 10 years. The 7Q10 figures were dropping for low flow conditions. As models are updated, new flow information will be included. Existing models do capture some significant low flow periods.

C. IBT Program Update (Kim Nimmer, N.C. DWR)

Due to time limitations since the meeting was already over its scheduled time, Ms. Nimmer postponed her presentation until the September 13, 2017 WAC meeting.

III. Concluding Remarks:

Chairman Smith 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.