

**Environmental Management Commission
Water Allocation Committee
Minutes**

**September 11, 2019
9:30 a.m.**

On September 11, 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:

John McAdams (WAC Chairman)
David Anderson (WAC Vice-Chair)
Mitch Gillespie
Pat Harris
Steve Keen
JD Solomon
Donald van der Vaart
Dr. Stan Meiburg (EMC Chairman)

Others Present:

Shannon Arata
Yvonne Bailey
Charlie Carter
Donna Davis
Marion Deerhake
Margaret Monast
Dr. Suzanne Lazorick
Philip Reynolds (Attorney General's office)

I. Preliminary Matters:

In accordance with North Carolina General Statute §138A-15, Chairman McAdams asked if any WAC member knew of a conflict of interest or the appearance of conflict with respect to items on the September 11, 2019 WAC agenda; none of the committee members identified a conflict. Chairman McAdams asked if there were any comments or corrections regarding the minutes from the July 10, 2019 meeting. There were no comments or corrections. Mr. Gillespie made a motion to approve the July 10, 2019 meeting minutes. The motion was seconded by Ms. Harris and the July 10, 2019 minutes were unanimously approved.

II. Information Items:

A. Update for Central Coastal Plain Capacity Use Area (CCPCUA) Status Report (Nat Wilson, DWR)

The Central Coastal Plain Capacity Use Area (CCPCUA) is composed of 15 counties in the coastal plain where restrictions are in place to limit the amount of ground water that is withdrawn from the deeper Cretaceous aquifers. There are currently 310 permits and 57 registrations issued to restrict ground water use in that area. Ground water withdrawals exceeding 100,000 gallons per day require a permit; ground water withdrawals between 10,000 and 100,000 gallons per day require annual registration. Between 2002 and 2018 water users have been required to reduce their ground water withdrawals by 30-75%, in three phases, from their approved base levels. The need to reduce ground water withdrawn from Cretaceous aquifers (primarily the Black Creek and Upper Cape Fear aquifers) was identified due to declining ground water levels, dewatering, and salt water encroachment. The goal of the phased reductions has been to achieve a sustainable rate of withdrawals. To comply with the CCPCUA requirements to reduce ground water withdrawals from Cretaceous aquifers, affected water systems had to invest in alternative water sources which includes shallower aquifers and regional surface water sources at a cost of hundreds of millions of dollars.

CCPCUA status reports are available online from 2004, 2009, 2014, and 2019. The CCPCUA program also has substantial data online that is reported by the permitted water systems, including data from production wells regarding the quantity pumped, from which aquifer the well is withdrawing ground water, water levels, and water level trends over time. The status reports provide the status of alternative water supplies that have been developed to achieve the CCPCUA reduction requirements.

There are also temporary permits, of which 11 have been issued. Temporary permits allow DWR to customize ground water withdrawals to a location and achieve the highest sustainable use of ground water. More rigorous criteria must be met for temporary permits, such as static water level trends must be level or upward trending and chloride concentrations must be fresh with no upward trend.

Questions and Discussion:

Mr. Keen asked whether any water districts are now buying surface water instead of relying on deep ground water, and whether water systems are planning for future water demands. Mr. Wilson replied that the Local Water Supply Plans (LWSPs) that water systems prepare and submit to DWR look out 50 years for meeting future water demand. Mr. Wilson went on to say now that systems are utilizing surface water sources instead of relying solely on deep groundwater, they are more resilient.

Mr. Solomon asked whether the CCPCUA program is tracking costs and if energy costs related to moving water greater distances (from new surface water sources) is being tracked. Mr. Wilson responded that the program is tracking the costs related to systems purchasing surface water, but costs related to additional energy requirements are not being tracked by the CCPCUA program.

Mr. van der Vaart asked about the metrics related to shifting systems to other water sources. Mr. Wilson stated that he believed there are good metrics in place with well stations positioned across the coastal plain to document how aquifers are responding to reductions in pumping. Data show that aquifers are rebounding to levels seen in 1982, which means a significant recovery and an indication that the aquifers are being used in a more sustainable way. Mr. van der Vaart followed up to ask how the program defines success. Mr. Wilson said that success will mean an equilibration of aquifer levels so that groundwater recharge/infiltration will equal the amount of groundwater withdrawn/pumped.

Mr. Gillespie stated that the CCPCUA regulation has cost a lot of money to the affected water systems. He asked now that aquifer levels in some areas are showing a point of sustainability, if there is a plan to end the CCPCUA program? Mr. Wilson responded that the groundwater withdrawal reduction schedule ended in July 2019, but the rules need to continue to be in place to protect the investments that have been made by the water systems. New pumping permits are not being issued to protect groundwater levels and the investments made by water systems to develop new/alternative water sources.

Mr. McAdams asked whether the reduction goals have been achieved and if a steady state has been reached. Mr. Wilson replied that ground water monitoring continues to assess conditions, and that more data is still needed about the status of salt water intrusion.

Mr. Keen asked how thorough the monitoring is for salt water intrusion, especially in Carteret County? Mr. Wilson responded the monitoring includes chloride every two years to analyze changes. There isn't the same level of data density for chloride concentrations as there is for water levels. However, data indicate that some aquifers are getting fresher as less groundwater is withdrawn.

Mr. Solomon asked if a steady state is being observed in some areas, what are the options for new users in the region? Mr. Wilson stated shallow aquifers and surface water are both water supply options, and the program doesn't want to make the deep aquifers available to new users since the existing community/water systems have invested heavily in order to protect them.

Dr. Meiburg observed that years ago there were problems observed with salt water intrusion. In response, the state encouraged using other sources and reducing pumping from the deep aquifers; it appears that the CCPCUA program has achieved much of what was intended. Mr. Wilson agreed, and added that in addition to salt water intrusion, the state was concerned about de-watering of the aquifers. Mr. Wilson also added that he hasn't seen any evidence that the affected communities are using less water because the reductions have hurt the region economically, in fact water use has increased during the time the pumping reductions have been in place.

Mr. McAdams concluded the session by stating there is a need to put policies in place that preserve our resources, and there is a need to look 100 years into the future.

B. Overview of DWR Planning Programs (Linwood Peele, Nat Wilson, Pamela Behm, & Nora Deamer, DWR)

Linwood Peele – Water Supply Planning Branch

Water supply planning, the basis of many programs in DWR, was started in 1989 primarily in response to drought. The objective of the program is to ensure there are adequate water supplies to protect public health and support economic growth. North Carolina and Alabama are the only two states east of the Mississippi River to not have a statewide water permitting program.

The Local Water Supply Planning (LWSP) program was enacted by law in 1989 and requires water systems to prepare and submit to DWR a LWSP for systems with more than 1,000 connections or more than 3,000 people. A LWSP is an assessment of a water system's current water needs and a plan for meeting future water demand associated with projected growth. A LWSP also includes a water efficiency plan and water shortage response plan.

The Water Withdrawal and Transfer Registration Program was started in 1991 and requires registration by agricultural users that use more than one million gallons of water per day and non-agricultural users that use more than 100,000 gallons of water per day. Registered users report to the program their water usage for the previous year by April 1st of each year.

The interbasin transfer (IBT) program was enacted by law in 1993 and regulates the movement of more than two million gallons of surface water per day between defined river basins. The statute defines 18 river basins that are divided into 38 subbasins. The program has identified 133 water systems across the state that transfer surface water between river basins and subbasins. Of those transfers, there are 27 systems that transfer more than one million gallons per day (MGD). Eleven of those systems are regulated by an IBT certificate issued by the EMC, 10 systems have a grandfathered allowance for their transfers, and six systems transfer between one to two MGD, so no regulation is needed yet.

The Drought Management Advisory Council was established as an adhoc council in 1992 and enacted by law in 2003. The Council coordinates drought monitoring for the state and provides assessment and response activities between state and federal agencies and water systems. The Council is required to meet in person once a year and keeps in touch with weekly conference calls to discuss current conditions.

There are two primary rules packages that guide programs within DWR's Water Planning Section. The rules are found in NCAC Title 15A, Subchapter 02E (Water Use Registration and Allocation) and Subchapter 02G (Water Resources Programs). Staff are currently reviewing these rules for needed updates, additions, and revisions. Dates to re-adopt these rules have not yet been established. The WAC's role in rulemaking includes working with staff to draft rules, providing hearing officers to facilitate public hearings,

and assisting with the preparation of Hearing Officer's Reports to provide a record to the full Commission.

In 1967 the NC General Assembly enacted a law permitting the allocation of water supply storage out of Jordan Lake, a multipurpose reservoir. The Commission is authorized to allocate storage out of the water supply pool to local governments. The water supply pool is currently 91% allocated following the Commission's allocation decisions at its March 2017 meeting, marking the fourth round of Jordan Lake water supply allocations.

The law that established the Aquatic Weed Control program was enacted in 1991. The program regulates the control and eradication of noxious aquatic weeds. The budget for the program was expanded from \$500,000 to \$1,000,000 in FY2018-2019. Funds are dispersed through a cost share program to assist local governments in addressing aquatic weed infestations.

Questions and Discussion:

Mr. Solomon asked about the standards for LWSPs, specifically the planning projection figures. Mr. Peele replied that with 560 water systems submitting LWSPs, it is difficult to require the same per capita usage, especially given the many variables that affect water usage by systems' customers. DWR does have guidelines, but local water systems prepare their own LWSPs. Mr. Solomon followed up to ask how "reasonableness" can be incorporated. Mr. Peele stated that looking at development patterns, per capita water use is higher for houses with large yards when compared to apartments or other denser development. Local water systems know the type of growth to anticipate in their area. DWR advises systems not to overinflate what they think they'll need to meet projected future demands.

Dr. Meiburg observed that it is worth looking at the Division's guidelines to see if they can be standardized and make systems defend their demand projections if they are outside the standard.

Mr. Solomon asked if there is a model that links ground water, surface water, and drought management. Mr. Peele replied that there currently is not, but it is a topic that is being discussed within the Division.

Nat Wilson – Ground Water Management Branch

The Water Use Act of 1967 empowers the Commission to declare capacity use areas of the state where the use of ground water, surface water, or both need to be regulated through a water use permitting program. The Central Coastal Plain Capacity Use Area (CCPCUA) came about in 2002 after a 4-year rule-making process. The CCPCUA was established over a 15-county area of the coastal plain to protect the Castle Hayne aquifer. The area was defined because of overuse, aquifer de-watering, and sharp declines in ground water levels. Permits are issued for ground water withdrawals over 100,000 gallons per day. Certain users have faced severe reductions of 30-75% over a 16-year period. Requirements to reduce water withdrawals from the deep Castle Hayne aquifer

have forced investment in alternate water sources such as surface water and shallower ground water. Water levels are recovering in the targeted aquifers.

A capacity use investigation documented DWR's concern about over-use of the Upper Cape Fear aquifer in Bladen County due to evidence of declining water levels and dewatering. Because of the investigation, Smithfield Foods built the Bladen Bluffs Water Treatment Plant to treat surface water from the Cape Fear River, which now supplies a large portion of Smithfield's needs.

Mr. Solomon asked if surface water quality is a concern (Gen X and possibly other emerging contaminants in the Cape Fear River), why not go back to ground water as the water source? Mr. Wilson replied that ground water wells are still used as part of the water supply.

In the 1980s there was concern about the security of water supplies and adequate flow for aquatic habitat in the Eno River Basin. The Commission directed the Department to conduct an investigation, which found that during low flow periods the water demand exceeded available supply. The Eno River Voluntary Capacity Use Area was established in 1988.

Pam Behm – Modeling and Assessment Branch

There is a statutory requirement to develop river basin hydrologic models for the state's 17 major river basins. A hydrologic model is essentially a water balance model to account for the water that flows through a river basin. Model development is contracted to outside consultants with Division staff support. Most of the hydrologic model platforms use OASIS (Operational and Simulations of Integrated Systems), a patented mass balance model. Development of models relies on information from LWSPs and models are calibrated with flow data provided by U.S. Geological Survey gages.

Models are used to help answer questions such as what is the chance of drought, how often, to evaluate the ability to meet water demand in basins, evaluate IBT requests, and evaluate water allocation scenarios. Hydrologic models have limitations, and don't include water quality or ground water systems. Hydrologic models have been completed for six of the state's river basins, models are under development for five river basins, and models still need to be developed for six river basins. Model development is a stakeholder intensive process which includes three stakeholder meetings at different points in the process. Once completed, the model is posted on a publicly-accessible Division server and staff provide training to run the model.

There is a statutory requirement for the Commission to approve models; however, the approval process is currently on hold due to concerns related to ecological flow. A statutory change is needed to remove ecological flow as a model input requirement. Until the statutory issue is resolved, the Commission has authorized the Division to continue model development to use for planning purposes.

Mr. van der Vaart asked why only one model platform (OASIS) is used? Ms. Behm answered that OASIS has a broad application and draws on a long period of record, and by using only one platform, staff and the public don't need to be re-trained to use different model platforms.

Ms. Harris asked how robust OASIS is for addressing changes? Ms. Behm replied there are two different parts of the model, which include planning and forecasting for events such as drought.

Mr. Solomon asked whether OASIS can be used in long-time averaging, not just temporal peaks and Ms. Behm confirmed that it can.

Nora Deamer – Basin Planning Branch

Basin plans consolidate data collected across the Division to provide a single location for water quality and water quantity information for the state's 17 river basins. They also provide plans to protect and preserve the state's water resources. Basin planners work with stakeholders during the development of the basin plans and draft plans are made available for a public comment period. Basin plans highlight impaired waters and the development of TMDLs (total maximum daily load) to address impairments, as well as featuring high quality waters that should be protected.

Basin plans are meant to be used as planning tools, they are not regulatory. Hydrologic models help answer water resource planning issues and contribute useful information for basin plans. A goal of the basin planning program is to provide scientifically-based water quality and quantity analysis for use in planning efforts. Over the past year, the Commission started an adopt-a-basin program for commissioners to become more familiar with a basin. Chairman Meiburg will likely be assigning basins to commissioners soon.

III. Concluding Remarks:

Chairman McAdams 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.