Well Subcommittee Meeting **December 9th, 2020**

Attendees: Caroline Siverson, Clyde Frazier, Emily Moose, Jason Sullivan, Hunter Glenn, Craig Caldwell, Sharon Day

- Caroline Siverson asked Jason to go over remote meeting guidelines and said that we would be starting out where Craig Caldwell left off at the last meeting. After that we have more general discussion.
- There were a few typos in the notes from the 25th meeting, but the notes were approved.
- Craig Caldwell said that he would continue his presentation from the last meeting. He mentioned that Rick Bolich wanted him to be involved with this group, and to think about how DEQ and USGS can help the county. He is working with Phil Bradley for the Geological Society of America to look at Chatham County lineation's and their association with ground water quality. Particularly drinking water quality. They want to quantify how much those lineation's and broken rocks effect the quantity and quality of groundwater. How much of that study will address the concerns of the subcommittee, certainly availability of water is important. He mentioned that in the last meeting there was a lot of interest in recharge areas and water bearing zones in the county, and he explained it is a difficult subject to begin with because Chatham County is in an unpredictable aquafer regime, very different than the coastal plain. Also, recharge is traditionally hard to find in a fractured-flow regime, and the balance between recharge and withdraws is another calculation to consider, along with water that is used and does not find its way back into a recharge area, such as evaporation. He wanted to stress that water use estimates are a big way to go in terms of how much is being withdrawn and how much will continue to be withdrawn with growth.
- Ms. Siverson asked if anyone had questions for Craig
- Clyde Frazier asked if It's important for us to get a handle on how much water is being used?
- Craig Caldwell said yes that is important to know the groundwater supply for future growth. Water use and water availability is basic water planning. Obviously, there may not be adequate water supply for future growth. Water use and water availability is basic water planning. You would also want to know you was on a municipal system or a personal system/well.
- Clyde Frazier asked if you could point him to resources of information for Agricultural and Industrial water use?
- Mr. Caldwell said that the NC Dept of Agriculture has some records but might not be incredibly detailed.
- Sharon Day spoke up and said that those reports are not verified and it's difficult to come up with a suitable number. She said she would not be confident at all in the NC Dept of Ag numbers.
- Ms. Siverson asked could we get better numbers for uses like animal production?
- Mr. Caldwell explained that in NC there is a registered water use for the ag sector and that for entities that use more than a million gallons per day. Again, all this data is dependent on the users reporting. Continued discussion on water and Ag use.
- Ms. Siverson thinks that Jason has arranged for Ag expansion and soil and water representatives to come and talk to the subcommittee at some point, and that would be an appropriate time to discuss ag uses, and maybe get more clarity on this. Right now, it's clear as mud.

- Mr. Frazier had another question. At the last meeting he was intrigued by looking at the static water level in wells -as a bottom-line measure- whatever the withdraw or recharge rates, that amount would tell us if the underground water level is going up or down? If so, what information do we have on that?
- Mr. Caldwell said that in a fractured crystalline rock groundwater regime that Chatham County has its very difficult to get broad scale data on the condition of groundwater in the aquifer. You may not even use the term aquafer in this area of the state because the groundwater is so fracture dependent. For instance, neighboring wells can have very different yields. Besides the status of individual wells, the efficacy of our aquifers in the piedmont is hard to determine, much less to do numerical modeling.
- Mr. Frazier, to verify what he was hearing asked if it was hard to get measures on whether groundwater was increasing or decreasing?
- Mr. Caldwell said that yes, within individual wells, you could measure the water level with water taps and create an historical record, and that could be used for a groundwater record. However, you really couldn't use that measure to know what was going on a mile away.
- Emily Moose had a follow up question. Most well failures are shallow wells. Can we take that to mean the water table is dropping?
- Mr. Caldwell said that short of a drought, that yes you could assume that.
- Ms. Moose said that may be the best data that we have in absence of reference wells.
- Mr. Caldwell said yes, de-watered wells would be pretty good data to plot. Continued discussion on this.
- Ms. Siverson asked if we had that type of data?
- Mr. Caldwell explained that is why you want to start recording water use estimates because at least you would get an estimate of withdraws. That could show the stress on the resources, and you could multiply that by anticipated growth. That could also determine the need for county water expansion.
- Ms. Moose asked if the county had any data on de-watered wells, saying it seemed like that would be something available through the county, and Ms. Siverson said that Anne Lowry might have information on that but didn't know how good the data would be. Mr. Sullivan said he would make a note to ask her about it. Continued Discussion on this topic.
- Mr. Sullivan asked the group to send him questions so he could compile them in advance of the January meetings.
- Ms. Siverson said that we have discussed a lot of information that we need, but it's not clear that we have the information available or how we could get it. Does anyone have thoughts on that?
- Jason Sullivan said MIS does have some mapping functions and hopefully in the next month staff will have mapping ability back. There may be some GIS data available, but we couldn't check it right now.
- Ms. Siverson asked what are our options for obtaining the water usage data?
- Mr. Caldwell mentioned that municipalities, the county, and AguaNC would have their own data. He didn't know how accessible that data from Aqua would be. You could look at rural populations and look at certain measures of gallons per day and estimate usage. There are equations to be used. Continued discussion on usage data.

- Ms. Siverson said that we might want to consider, as part of a recommendation, that Chatham County Fund a groundwater study for Chatham County.
- Jason said that could be something. Define the parameters, and that could be an option.
- Mr. Caldwell asked if the subcommittee had spoken to USGS or the neighboring counties working with USGS on similar projects. At the very least that might be a good presentation for the subcommittee to have. Bruce Campbell at USGS is a modeler who does this kind of work.
- Jason mentioned that Phil Bradley gave the group Dominick Antolino's information as well.
- Ms. Siverson mentioned the Study that Ann Lowry referenced at the last meeting. The South Atlantic Water Science Center Study on Groundwater Availability. Hopefully she will be able to give an update on that soon.
- Ms. Siverson asked if Jason or Staff would be willing to email/reach out to the various contracts mentioned by Mr. Caldwell. Perhaps we could get a presentation.
- Ms. Siverson mentioned the amount of uncertainty regarding the groundwater availability in the County might be a sufficient reason for some type of regulatory intervention. We need more data, but in the meantime, we need to protect out groundwater resources.
- Ms. Day agreed with Ms. Siverson stating that we will not have the data we need before a lot more development happens.
- Mr. Caldwell also told the group to Contact Shashi Bhatta at DWR public water supply section, who he described as the expert on groundwater utilities such as AuqaNC.
- Ms. Moose concurred with what everyone was saying, and based on the tenets of the comp plan, it made sense to take a conservative and precautionary approach when it comes to water resources.