

Santee-Lynches GWMP Meeting #2

- Welcome to the second GWMP Stakeholder Workgroup meeting
- Introductions
 - Kristy Ellenberg – DHEC Environmental Affairs Director of Collaborative Partnership
 - Billy Timmons – County Engineer for Clarendon County
 - Brandon DuRant – Farm services and environmental manager
 - Gregory Fox – Senior Natural Resource Manager, Blue Triton
 - Brandon Kienenberger – Blue Triton, Sustainability Analyst
 - Matt Smith – Director of Clemson’s Pee Dee Research and Education Center
 - Tommy Lee – Farmer, Clarendon County
 - Dennis Townsend – Environmental Manager, Georgia Pacific
 - Walt Beard – Director of Utilities, City of Sumter
 - Andy Wachob – Hydrogeologist, DNR
 - Jason McArthur – Atlas Farms
- Rob Devlin – Introductions, Director of Division
 - Leigh Anne Monroe – Section Manager for Water Quantity Permitting
 - Ashley Carothers – Hydrogeologist, Coordinator for Santee-Lynches
 - Andrea Hughes, Courtney Kemmer, Courtney Milledge – Hydrogeologists
- Ashley Carothers
 - Components of each plan
 - Orange: This is what we’ll be focusing on today
 - Last meeting we covered some of the topics you see here in purple
 - For our next meeting we’ll go over the topics you see in blue
 - Executive Summary
 - Legislature requires the water resources of the state be put to beneficial use to the maximum capacity which they are capable
 - Protect the resources for current and future use
 - Introduction
 - Designation: July 15th, 2021 – DHEC Board approved Santee-Lynches as CUA
 - *Read Slide 4*
 - Definitions
 - Chose a handful of the most relevant definitions to go over
 - *Read Slide 5*
 - Geopolitical Structure
 - *Read Slide 6*
 - Regional Description
 - Purple counties on map are the Santee-Lynches CUA counties
 - *Read Slide 7*
 - *Read Slide 8*
 - Santee-Lynches Area spans 3 of the 4 physiographic regions of the state: Piedmont, Upper Coastal Plain, Lower Coastal Plain
 - Climate
 - *Read Slide 9*
 - Land Use

- Diverse portion of the state, Richland, Sumter, and Kershaw counties have the largest portion of urban areas
 - Slide 11 –
 - Top graph: Irrigated acreage has increased 328% from 2002 to 2017. Although there has been growth in the counties, there was a large jump in irrigated acreage between 2012 and 2017
 - Bottom graph: Overall there has been growth in farmland, but most of the irrigated acreage is on pre-existing irrigated acreage
- Question: What do we need to know regionally with regards to groundwater management?
 - Is there an increase in acreage or an increase in reporting as has been the case in other CUAs?
 - Ashley – I believe so, yeah
 - Is there anything you would like to see defined better or reworded for the plan so far?
 - Kristi – Not seeing any questions yet, but the definitions are pretty consistent across the other CUAs, right?
 - Ashley – Right. There are some definitions that can't be changed because of the regulation but some can be reworded.
- Hydrogeologic Setting
 - B-B': Line on the map represents the cross section you see above. Think of a layer cake with layers of cake and frosting. Blue layers are the permeable cake layers, or aquifers, and tan layers are the less permeable frosting layers, or confining units. The aquifers displayed were deposited so the oldest layers are on the bottom and the youngest layers are on top.
 - C-C': This cross-section passes through Chesterfield County and runs to Horry County
- Recharge – Slide 16
 - Three Main Contributors: Atmosphere system, withdrawal/injection wells, surface water systems
 - Want to have more inflow than outflow, or a steady system. We do not want more outflow than inflow.
 - Santee-Lynches CUA is a large recharge area. Recharge areas are where water infiltrates the aquifers near the fall line and flows slowly to the deeper aquifers near the coast
- Question: What questions or additional information on the Santee-Lynches region would be helpful?
 - Matt Smith – Do we have a generalized water balance on this region?
 - Ashley – I don't know off the top of my head the amount that flows into and out of the system, Andrea may be able to answer better.
 - Andrea – USGS is in process of developing a model that contains a water budget for each of the aquifers and should be coming out any time now. But I do not know the numbers off the top of my head.
 - Matt – Looks like the aquifer names have changed over time, are these the current names?
 - Andrea and Ashley – Yes this is the current nomenclature
 - Tommy Lee – Do we know where we are with the levels in these aquifers?

- Ashley – Andrea will be able to answer this a little better, but DHEC and DNR have a network of monitoring wells and maps and that is something we will be going over next meeting
 - Andrea – Andy would you like to expand?
 - Andy – DNR has a network of 180 wells across the state screened in different aquifers. The wells are either continuously monitored or manually measured every 3 months or so. Every year we'll pick an aquifer and in addition to our monitoring wells we will take measurements from other wells to develop maps. We have a pretty good idea of what the water level conditions are.
 - Kristy – I added a link to DNR's water level monitoring page
 - Andrea – Yes that is where I get a lot of the data for the report. Andy would you like to add a link to the chat to the pot map page?
 - Andy – There is a link to the network and also a link to the pot maps we have done
 - Kristy – Initial groundwater assessment report is on the page from Summer of 2020 and next meeting we'll get more into the water level data. Resources have been added to the chat. Any significant trends from that report?
 - Andrea – As I recall, with the proximity to the fall line, in this area the aquifers are in pretty good shape. At the moment, as I recall, there are no major cones of depression in the area. A cone of depression or pumping cone occurs when there is heavy pumping from a cluster of wells that changes the flow of the groundwater and lowers the pressure surface.
 - Kristy – Any other questions? What strategies are we using to guide recommendations?
- Leigh Anne Monroe – I'll go over the strategies we've developed to guide how we manage the resources. We are really looking for feedback or input on these strategies.
 - *Read Slide 18* – Permit cycles are every 5 years but on the 4th year we do an evaluation to see how water levels have reacted
 - *Read Slide 19* - This is a bulleted list of some of the things we look at when assessing permit applications. The Best Management Strategy is important, and we have a template for each use type outlining the information required in this plan. We do give buffers in case of drought or other unknown circumstances to ensure you have the resources you need
 - *Read Slide 20* - This strategy helps inform our decisions for the first two strategies.
 - *Read Slide 21* - This is where a lot of the stakeholders come in. Conservation has become a big issue and we want to make sure that the public in your region know that you, the users, are trying to be stewards of the resource. Who do we need to be partnering with and who do we need to provide educational resources to?
 - *Read Slide 22* - The more data we have, the more informed decisions we can make. This is a catch all strategy to ensure we have the resources we need to manage and regulate the groundwater resources.
- Kristy – Just to clarify, there are other CUAs in the state and there are a lot of similarities between the strategies in the Groundwater Management Plans. There are a few differences to

address regional differences. We started off today discussing the laws and regulations, and today we are focusing on the GWMP.

- What strategies are most appropriate for the Santee-Lynches region?
 - Greg Fox – Regarding the monitoring program, we monitor all of our sites and frankly we find that having a monitoring program has been very helpful in managing changes. For us, we find the monitoring program very helpful. As a hydrogeologist I think the monitoring network is appropriate for the region as a whole so we can compare pumping levels to the norm. In addition to our private wells, we also funded 2 USGS monitoring wells near our McBee plant.
 - Ashley – We have a network of wells that we are trying to monitor. We would like to see if we should partner with other facilities across the state to better monitor the trends in groundwater.
 - Tommy Lee – If this goes into effect are all wells regulated or is it just some wells? Will any be exempt?
 - Ashley - We require permits for anyone pulling above 3 million gallons in any month from a well or well system. There are some exemptions, like emergency withdrawal or wildlife habitat. When we permit, we don't issue a permit per month, it'll be a yearly total but that 3 million gallons per month is the threshold to get a permit.
 - Greg – We do a lot of educational outreach in local schools and they are good students for conservation and sustainability. We use “Awesome Aquifer” kits to demonstrate how use impacts the groundwater levels. I am a big advocate for educational outreach in the local communities. I'm happy to partner with DHEC and Clemson.
 - Matt Smith – I find one of the most confusing things for people, at least on the educational front, is the potentiometric surface. Anything we can do to convey that concept a little better would be good. Also, recharge and very basic groundwater hydrology.
 - Greg – As someone who manages water resources for a company like Blue Triton, one of the most important things for us is getting as much clarity as possible on the criteria required in terms of regulation and permit requirements. We can follow requirements that we can understand.
 - Leigh Anne – Yes, and the next meeting we'll be going through the requirements and expectations for the permit applications and water use reporting.
 - Kristy – I've heard good support for Strategies 3 and 4. Are there any thoughts on Strategies 1 and 2? Leigh Anne, do you have any examples of identifying areas where reductions in pumping have occurred?
 - Leigh Anne – Yes, in the Waccamaw region we have recommended no new wells or increased withdrawal from the Crouch Branch aquifer due to a pumping cone that has formed under Georgetown County. Existing users would not be affected, but we are limiting any new withdrawal from this aquifer in this area.
 - Matt – I still need some clarification on the water budget, and I'm concerned about how existing users would not be affected but new users wouldn't have access to the resources.

- Andrea – What we’re trying to do in establishing CUAs is to make sure we don’t get into a situation where we would have to reduce withdrawals from existing and new users, which occurred in NC. What Leigh Anne mentioned happened in one part of one CUA in one aquifer. We provide updates to the Western CUA Stakeholders on permitting cycles, reported use, water level trends, etc. As Rob Devlin has said, we are not in the business of not issuing permits. We are in the business of protecting the resource for current and future users.
 - Greg – It might be useful to have legal counsel on the next call to go over some of this, so we fully understand the differences. Also, by having long term records, we are able to track the long term and short-term climatic variability of the system and helps us keep an eye on when the water table drops below where we typically see a low. Again, having a monitoring program with good climatic data and regional data would help people understand the differences.
 - Leigh Anne – I shared the link to the regulations
 - Ashley – Next meeting we’ll share some of that data that shows the differences between climatic variability and pumping.
 - Andrea – A lot of that information was also included in the initial groundwater assessment
 - Walt Beard – Where do we stand currently with the aquifers? Want to make sure our wells have the resources to provide to our customers.
 - Andrea – At the moment, all of the aquifers in SC’s coastal plain have experienced a lowering of the pressure surface. There are some areas of concern, but the Santee-Lynches doesn’t appear to be in trouble at this time and the reason for making the Santee-Lynches a CUA is to ensure it stays that way.
 - Kristy – Are there any concerns of using these five strategies or anything that needs to be added? I’ve heard some opportunities for partnering with monitoring and educational outreach.
 - How do we continue to share information with others and gather additional input on this groundwater management plan?
 - Walt Beard – We would like to offer our facility in Sumter, and we can provide lunch to gather in person if that is something you would be interested in.
 - Kristy – Wanted to loop back to Tommy’s comment about “if this goes into effect”. These counties were approved to become a CUA by the DHEC Board on July 15th. We can provide the timeline of development in our next meeting.
 - Ashley – Since this has passed as a CUA, what we are looking at currently is any new cap use wells that are being installed post-July 15th we will need an application and will issue a permit. Then next year we will have our mass permitting cycle and will re-issue or initially issue permits for all applicable users in the area. We’ll also talk about implementation more next meeting, but I just wanted to say not only can you call or email the staff, but we are also happy to come out to help with the application process.
- Closing remarks