

Minutes
Saltwater Intrusion Steering Committee Meeting
November 18, 2010

Attending: David Baize, Brian Baker, Richard Cyr, Billy Edwards, Kelly Ferda, Bill Garbett, Rusty Hildebrand, Donna Katula, Jim Kennedy, Kent Langley, Jeff Larson, Steve Liotta, Camille Ransom, John Sawyer, Charles Sexton, Mark Smith, Paul Vogel.

The meeting was opened by Jeff Larson with a review of the agenda for the meeting.

There was a brief discussion of the GA/SC shared website. This website was constructed by both Georgia and South Carolina to provide background and updates on water issues shared by both states. Documents associated with the Saltwater Intrusion Stakeholders Group will be posted on the website. The website will be a primary vehicle for dissemination of information.

We will ultimately need a recommendation(s) for the Governor's Committee. The recommendation(s) could be in the form of a direction instead of an exact roadmap.

Cost will become very real as we move through the process. We need to think about how to write up the recommendations into a report that would include feasibility (costs, technical, etc).

The History of Saltwater Intrusion document should be updated with information provided since the last revision. This will be done and posted on the website.

Dr. Jim Kennedy provided the results of the modeling requested at the last meeting. The modeling was an academic exercise to determine the effects of drastic groundwater withdrawal reductions on the movement of the saltwater plume. Dr. Kennedy modeled total withdrawals of 10 MGD for the Savannah area, 2 MGD for Hilton Head Island, and 15 MGD for the Yellow Zone and compared it to the baseline withdrawals in the model (69 MGD for Savannah are, 8.6 MGD for Hilton Head Island, and 17.5 MGD in the Yellow Zone). Although the simulated withdrawals resulted in an 85% reduction in the hydraulic gradient, saltwater plumes continued to move southward on Hilton Head Island..

A reduction of the cone of depression to reduce the hydraulic gradient on Hilton Head Island would also reduce the vertical hydraulic gradient and vertical migration of saltwater through the confining unit.

The model is currently the best tool we have to evaluate plume movement in the future.

The pumping effects of areas adjacent to Hilton Head Island in South Carolina have not been modeled. The data is probably in the model so modeling the effects of withdrawals off Hilton Head Island can be done.

Groundwater withdrawal on Daufuskie and Tybee has a minor effect on the movement of the saltwater plume.

There is not an obvious source of saltwater that could affect the wells on Tybee Island like there is on Hilton Head Island.

How would dredging effect saltwater intrusion on Tybee Island? Could that be a source of saltwater?

Increased vertical movement of saltwater in the channel due to dredging may not be enough saltwater to affect Tybee. The wells at Tybee also pull groundwater from the west and southwest.

The cost for all privately owned water systems to reduce their groundwater use has not been calculated yet.

The City of Savannah's water system is over 100 years old. The chemistry of surface water is very different from groundwater. If the City switches to surface water, the system will deteriorate quicker.

The City of Hinesville and other municipalities have instituted a variety of measures over the years to reduce withdrawals from the Upper Floridan aquifer. The City of Hinesville has constructed a reuse wastewater treatment plant and provides reclaimed water to the Fort Stewart central energy plant, various residential and commercial developments in Hinesville as well as golf courses in Hinesville and Fort Stewart. Yellow Zone municipalities need help in understanding the impact withdrawals in the Yellow Zone has on Hilton Head Island.

Although it is recognized that there are unregulated private wells, there is little we can do at this time to account for their impact on the aquifer.

If someone wanted a new permit in SC that was not on Hilton Head Island, would they be permitted?

The effects of withdrawals near Hilton Head will need to be evaluated.

Regarding private wells, we need to look at everything. Some counties have ordinances that require private owners to tie onto a public supply.

Some of this committee's recommendations may include new legislation.

Near-term use of ASR in this area would need legislative approval in Georgia.

ASR is a very reliable tool.

Camille Ransom, Senior Scientist with SC DHEC, gave a presentation entitled Vertical Saltwater Migration into the Upper Floridan Aquifer.

Dr. Jim Kennedy, State Geologist for Georgia, gave a presentation entitled Alternative Sustainable Yields of the Upper Floridan Aquifer.

How long would it take for the aquifer to see the result of an injection well?

30-60 days.

Treated water would be injected?

Yes, the water must meet drinking water standards.

What about a barrier on both Hilton Head Island and Savannah?

It can be done but it has not yet been modeled.

We need to consider all options, not just reductions. Engineering controls can be done quicker and with less cost.

At this time, we are not ready to say what the best choice, or combination of choices, is. That is what this committee needs to decide.

We may need a consultant to help with the details of determining the best options. A consultant could take the costs associated with reductions, extraction wells, and injection wells on both Hilton Head Island and Savannah and provide the committee with big picture scenarios and comparisons so the committee can compare them.

There are current legal restrictions on ASR in Savannah until June 30, 2014.

Are there any other alternatives?

There are some applications where treating water with RO may be an option to consider.

We can't keep pumping at current rates.

The committee has probably reached the extent of our technical ability. We need a consultant to help us move forward and additional technical work would need to be funded. There are many users that should share the costs.

The Governor's Committee will need recommendations on the most likely options and the costs associated with each.

It is also important to identify a funding source.

How much would it cost to hire a consultant?

It will take approximately \$150,000 for a feasibility study to better explore the options. It would cost much more to design a chosen option.

We currently have 3 alternatives that could be combined in a number of ways:

1. Reductions of withdrawals from the Upper Floridan aquifer
2. Extraction wells to form a barrier to capture the salt water plume
3. Injection wells to prevent additional salt water from entering the aquifer

Dr. Richard Spruill has done this type of evaluation for the PSD and may be able to provide design information and costs for a barrier.

The next meeting will be at the Hilton Head PSD from 10-12 on January 6. Dr. Richard Spruill will be asked to present at the meeting. Richard Cyr will send directions to everyone.

Action steps:

- Jim Kennedy to draft a report summarizing the possible options in preparation for a recommendation to the Governor's Committee.
- The History of Saltwater Intrusion to be updated with entries provided at this meeting.
- PSD will contact Dr. Spruill to present at the meeting.