

No answers yet in USGS mid-project update

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WHITE BEAR LAKE — Although he didn't provide results, the U.S. Geological Survey (USGS) scientist immersed in the lake study did say what he's trying to learn and why.

Phase Two of hydrologist Perry Jones' lake study has expanded, thanks to a Met Council grant, to include groundwater and surface water interactions in more Northeast Metro lakes than just White Bear. But the research is still looking to answer questions like why does White Bear Lake's level fluctuate when Bald Eagle Lake doesn't? What are the groundwater/surface water interactions in deeper sections of White Bear Lake and what are surface water contributions to city wells and how does that vary across the Northeast Metro?

As the Met Council's Sam Paske told a standing-room-only crowd at City Hall last month, "the USGS study is meant to tell us why we're seeing what we're seeing."

In a quick review of the 2013 USGS study, Jones noted that wells downgradient from White Bear Lake were receiving surface water. They also found water level measurements across the Northeast Metro showed the Prairie du Chien and Jordan aquifer were

10 feet lower than the lake.

"That indicated the aquifer is not a major source of inflow providing groundwater to the lake, but that glacial aquifers above the Prairie du Chien were providing the groundwater," Jones noted. "We also found a combination of decreased precipitation and increased groundwater pumping could explain a drop in lake level."

What he and co-workers did conclude, was the first study left a lot of unanswered questions, which is why the study was continued.

The USGS scientist told the engineers, stakeholders, city managers and legislators who came for the midproject update that he is hoping for these outcomes from the current study:

- To develop statistical relationships between lake levels and fiscal and environmental factors that control levels. "What variables affect lake level? What watershed characteristics might explain why lakes are different? Again, we are not looking at the effects of pumping," Jones noted. "That is in the groundwater flow model."

- To characterize interactions on local lake levels. This includes age-dating of well water to get insight as to where water is coming from.

- To use information he collects to develop a groundwater flow model for the Northeast

Metro. A model will look at regional effects of groundwater pumping on area lakes. Jones plans to do model scenarios of what current pumping is and how increased and decreased pumping will affect lake levels.

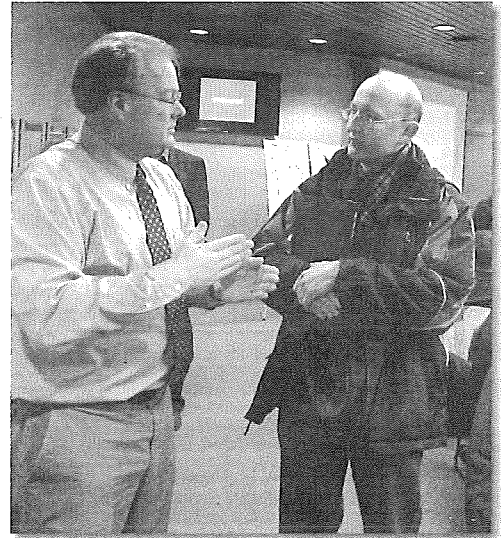
He is not looking at augmentation, Jones noted, but "I realize it is an important issue and we can expound on that in the future."

Jones made it clear USGS is not looking at the effects of groundwater withdrawals of a specific well on a specific lake. "We are looking at regional effects," he emphasized. "We are also not looking at the amount of surface water from a specific lake entering a specific well."

Those issues can be addressed with the flow model they are developing and in a follow-up study, Jones added. He called the flow model a "powerful tool" to aid in pumping simulations and its effect on lake levels.

After an extensive peer review process this summer, the USGS study should be released sometime this fall.

During a question-and-answer session, township resident Mike Downing thanked Jones for his work. "As a former 3M engineer, I know science drives everything," he said. "My concern is we keep going after another study and another study. We need to take risks and we need solutions. I want my grandchildren to



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USGS Hydrologist Perry Jones, left, discusses water issues with Rep. Peter Fischer during a project update at White Bear Lake City Hall last month.

enjoy this lake in the future. It's time for our elected officials to solve our problem."

In response, Jones said: "When there are suggestions as to solutions, I've always found questions. The role of USGS is to provide information and tools to address the issue and

evaluate solutions."

The scientist added that he lives in Vadnais Heights and used to bring his children to Ramsey County beach when they were young. "We can't swim there anymore, so I understand the situation," Jones said.