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Met Council water report plugs in capital costs

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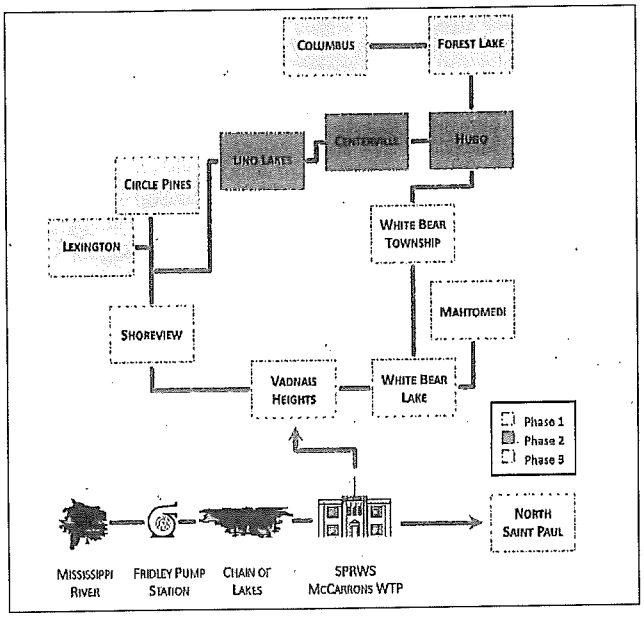

ST. PAUL — The Metropolitan Council's final report on preserving the Northeast Metro's water supply was released Dec. 29. Like the draft report published last July, the final analysis looks at options for replacing groundwater with river water to northeast communities that rely on the Prairie du Chien aquifer.

Council staff and consultants have added more cost information in the final version and added a surprising new option that would not require mothballing municipal wells.

Called "conjunctive use," a new surface water treatment plant would provide water for daily use and existing wells would provide backup.

Five communities, White Bear Lake, White Bear Township, Shoreview, Mahtomedi and Vadnais Heights, would move to surface water from the Mississippi under this option, but still use supplemental groundwater from existing wells to meet peak demand.

According to the Met Council report, conjunctive use has a capital cost of $164 million to build and an annual cost of $7.5 million to operate and maintain. In return, there would be a 49 percent reduction in groundwater pumping. On the upside, significant aquifer recovery is expected with this option. On the downside, cities would have to maintain two water supply systems, meaning higher operational costs accompanied by higher water rates.

The feasibility assessment report, prepared in partnership with the Vadnais Heights engineering firm of Short Elliott Hendrickson Inc., was requested by the Minnesota Legislature due to concern over lake levels, particularly White Bear Lake, and the area's heavy reliance on the aquifer.

Thirteen communities are targeted in the study, surface water bodies and their inclusion in the U.S. Geological Survey study of White Bear Lake published in 2013.

The report includes three approaches that are considered feasible for sustaining water supply in the northeast:

• **Approach No. 1:** Connect northeast metro communities with St. Paul Regional Water Services for drinking water.

There are several alternatives under this approach. One is to serve the six communities closest to St. Paul: White Bear Lake, White Bear Township, Mahtomedi, Shoreview, North St. Paul and Vadnais Heights. Capital cost: $155 million. Annual operating cost: $11 million.

The reduction in groundwater pumping: 57 percent of total water use among these cities.

Aquifer recovery is expected.

A second alternative is to add seven more communities to the six: Hugo, Lino Lakes, Forest Lake, Centerville, Circle Pines, Lexington and Columbus(See diagram). This would require extending a major water cost: $623 million. Annual operating cost: $20 million.

The reduction in groundwater pumping: 100 percent of total water use among these cities.

• **Approach No. 2:** Convey surface water from the Mississippi River to a new local treatment plant for distribution.

The plant would likely be located at Vadnais Lake, since the water authority owns land on the lake. Its 40 million capacity would serve White Bear Lake, White Bear Township, Shoreview, Mahtomedi and Vadnais Heights. Capital cost: $227 million. Annual operating cost: $9 million.

A larger, 60-million gallon capacity treatment plant to serve all 13 communities was also considered. Capital cost: $609 million. Annual operating cost: $16 million.

One disadvantage to this system other than cost is there is no organizational structure to own and operate the plant.

• **Approach No. 3:** Continue to develop groundwater sources.

These might include conservation and stormwater reuse to reduce groundwater continue to be maintained. New wells would be drilled as additional supply is needed. Groundwater treatment plants that are currently planned would be built. Capital cost: $91 million.

This option has the lowest capital costs. Communities in the study area would retain control over operations of water supply and treatment systems but there is potential for continued decline in aquifer and lake levels since there would be zero reduction in groundwater pumping.

• Although not listed as an approach, augmentation was addressed in the report.

The council evaluated the feasibility of augmenting White Bear Lake with water from the Mississippi River but considered it separately since it does not involve drinking water.

This approach would draw and convey 2 billion gallons of water a year to augment the lake from a pumping station near Vadnais Lake. Capital cost: $50 million. Annual operating cost: $300,000.

It is not certain that augmentation will maintain water level at the ordinary be very large, according to the report, in order to overcome the historically documented seepage rates from the lake to the aquifer below.

It is unlikely that augmenting White Bear Lake will benefit other area lakes but it's something the city's manager thinks could "grow legs."

"I thought it was a bad idea at first," Sather said. "Then we sat down with an SEH engineer who explained the filtration process to keep out phosphorus and zebra mussels. I walked into that meeting with a chip on my shoulder and walked out a believer. When the Legislature starts looking at it, this option is less than a third of the cost of the other approaches."

So which option is best? The Met Council isn't saying. The report stops short of identifying the best way forward. Local government units, lawmakers, the DNR and other stakeholders should all be part of the discussion in developing a plan for water supply in the region, the report stated.

Keith Buttleman, assistant general manager in the Environmental Services Division, said the best option may be a combination of the alternatives considered, which should be viewed as "examples."

"Communities could pursue less expensive approaches, for instance, such as stormwater reuse to reduce groundwater pumping, before making large-scale investments in alternative infrastructure solutions," he said. "We have a lot more information for legislators and local officials today on which to base decision-making than when we started this study."

Admittedly, none of the approaches would be easy to implement. All have significant capital and operational costs, and additional discussion is needed to determine who should be responsible for those costs.

"Ultimately a combination of strategies including groundwater, surface water, stormwater, reclaiming wastewater enhanced aquisolution at the least cost," Buttleman said. "The feasibility of utilizing these strategies depends on where you are in the metro area."

Shoreview's public works director, Mark Maloney, said he's been asked why his city is in the process of designing and building an $11 million water treatment plant when the Met Council is studying surface water feasibility.

"My reaction is we've been planning this for years. It's already built into our water rate structure. It's a long process based on our needs and an indication of how out of the blue this Met Council report hit this market. Do you think we would have been strategically aiming for a showdown with the Met Council? No. This study came on the heels of the White Bear Lake lawsuit. To me, that is not good long-term regional planning."

Maloney said the study hasn't even scratched the surface on logistics and finances necessary to create a new regional water utility or expansion of an existing water utility.

White Bear Lake's Sather said he was surprised at statements made in a press release introducing the report. "The Met Council seems to be responding differently now, saying this is just some of the measures, or a combination may be best. They seem to have changed their tune about other sources for surface water besides St. Paul (Regional Water Authority). That's where I started thinking, 'wow, there's a shift here.' I think the Met Council is becoming more responsive to state level politics."

Ongoing studies are also expected to better inform decision-making related to water use in the northeast metro including the USGS study on groundwater and surface water interaction expected for completion in 2016, the DNR's groundwater management area plan and a University of Minnesota 2015 study that will identify ways for industrial