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Waukesha answers questions on potential water bid

Questions on possible application for Lake Michigan water answered by utility

Water conservation reduces anticipated request for water

A document of detailed answers to many questions about a potential application for Great Lakes water was released today by the Waukesha Water Utility.

"Our potential application for Great Lakes water is still in the developmental stage," said Waukesha Mayor Larry Nelson, "but we want to share our current thinking with the environmental organizations that responded to our offer to ask questions, as well as the public, about what the application would include. Our answers will help ensure that the public has the time and opportunity to provide feedback. I want our process, as well as our application, to be a role model for any other community that might seek Great Lakes water."

The water utility released a 50-plus page document answering a seven page list of questions that environmental groups had submitted. "The list of questions was comprehensive and thoughtful. We want to thank those groups for their questions, which we believe will be helpful during the public discussion of the issues. Our replies have led to a lengthy document, but we feel we are providing the kind of detail the environmental groups and the public has asked for." The document and attachments will be available at http://www.ci.waukesha.wi.us/web/guest/futurewatersupplyinfo. A summary of the document will also be available at the site.

The mayor said the questions and answers document includes a new, lower estimate of the amount of water the city would need. "Our recent success with our water conservation program

has allowed us to lower our estimates of the amounts of water the city may need in the future," Nelson said.

Water use by customers of the Waukesha Water Utility dropped 25% from 1988 to 2004, despite a 17% increase in population. However, the utility adopted a comprehensive water conservation plan in 2006 to achieve further reductions, with a goal of 20% less water use per capita by 2020. The City of Waukesha's new plan has made it the Midwest's leader in water conservation efforts and has already reduced water use by 11%. Residential water use declined 3% in 2008 compared to 2007.

"Our current use is about 7 million gallons per day on an average day and about 10 million gallons per day on peak days," Nelson said. "We now estimate that when the city is completely built out, which could take 50 years or more, our average demand would be 11 MGD, with possible peaks of 18.5 MGD on a few days of the year. That is substantially less than the peak demand of 20 to 24 MGD that we had predicted."

The mayor said the estimates are based on a service area that was defined by the Southeastern Wisconsin Regional Planning Commission under a new water supply plan required under the Great Lakes Compact implementing legislation. The population of that area at build-out is projected to be 97,400 people, compared to a current city population of 68,030.

The mayor said the new, lower estimate does not indicate that Waukesha's current water supply might be adequate. "We must end our use of the deep aquifer. It is an unreliable and unsustainable water supply. The continuing drawdown of the aquifer has negative impacts on surface waters throughout the region," he said.

The city's responses also revise its proposed plan for returning water, after use, to Lake Michigan. "We still would recycle water back to the lake via a tributary. That creates a positive new precedent of using treated wastewater as a beneficial resource that improves stream flow," Nelson said.

"We also still want to limit the amount of water going back when the stream reaches a certain level, about the level that would be seen during a two year storm event," he said. "But we are now proposing to send back the estimated amount of lake water we would take that day, minus the Compact's allowance for consumptive use."

On other days, the city would send even greater amounts of water. "All wastewater utilities treat and discharge more water than they originally take from groundwater or surface water," according to Waukesha Water Utility General Manager Dan Duchniak. "That's because additional water infiltrates into the wastewater system, before treatment, from manholes, pipes and other sources. So on most days, we may return more water to Lake Michigan than what we would withdraw. Even on rare storm days, we would return the amounts outlined in the Compact."

Duchniak said the utility is still examining the impacts of such return flow on possible tributaries to use, such as Underwood Creek, but is confident that return flow can be accomplished without causing increased risks of flooding.

The utility's answers address questions on a variety of issues, including the need for a new water supply; the reasons that two studies chose Lake Michigan as the best environmental option; the benefits to southeastern Wisconsin surface waters of ending Waukesha's use of the deep aquifer; the impacts on tributary water quantities and quality from return flow; the efforts to control radium in Waukesha's water supply; the role of the public in the application process; and the city's extensive and successful water conservation efforts.

The Mayor said the utility hopes to develop an outline of its application by this summer. The city will then seek additional public input on the draft, which must be recommended by the water utility's commission and then approved by the Waukesha Common Council before being submitted to the Department of Natural Resources for review. The proposal would then need the approval of the governors of the eight Great Lakes states with input from the Canadian Providences under the recently enacted Great Lakes Compact.

"We will continue to be happy to hear from or meet with environmental groups, the public and other government officials throughout the process so that we can develop the best application we can," Nelson said.

Nelson was a strong supporter of the Great Lakes Compact and advocated for its passage by the Wisconsin Legislature and Congress last year. The Compact generally prohibits diversions of water beyond the surface divide that defines the Great Lakes basin, but makes exceptions for communities, such as Waukesha, in counties that straddle the divide. The city must meet certain strict conditions, including water conservation, return of the water it uses to the lake, and obtaining the permission of the eight Great Lakes governors.

Waukesha will likely be the first community outside the surface divide to apply to the Great Lakes governors for lake water.

Continued use of Waukesha's current deep aquifer water supply is unsustainable and inadequate due to water quantity and quality. Its deep aquifer supply has been overburdened by pumping from multiple communities over the decades in southeastern Wisconsin (including nearby Milwaukee until the 1950's), leading to significant decreases in water quality and aquifer levels. The drawdown in the aquifer is also due to a geological feature that limits the recharge of the aquifer from rain and snow in much of the region, including Milwaukee and eastern Waukesha counties.

As water is withdrawn from the deeper parts of the aquifer, the water quality diminishes. Radium is just one of the growing quality and quantity problems associated with the deep aquifer that Waukesha uses. Some wells are drawing water that is essentially salt water due to increasing levels of contaminants. It has also pumped water with temperatures as high as 98 degrees. In addition, pumping water from these depths consumes large amounts of energy and increases costs.

The drawdown in the deep aquifer also harms southeastern Wisconsin surface water by reducing needed groundwater flow and discharge to area streams and lakes. On the other hand, ending the use of the aquifer will help the aquifer recover and improve surface waters throughout southeastern Wisconsin.

As part of its comprehensive water conservation plan, the city adopted a new ordinance that bans daytime sprinkling and limits sprinkling at other times to two days per week. Waukesha also became the first water utility in the state to apply for and receive permission to adopt a water conservation rate structure for residential class customers that increases rates as water use goes up, the opposite of most utilities. The Public Service Commission has called the idea a model for other utilities. The utility is currently revising the program to strengthen it as a part of a rate case that is currently before the PSC.

According to a 2002 study done for the utility, as well as the draft recommendation of the regional water supply report by the Southeastern Wisconsin Regional Planning Commission, the best environmental option for a City of Waukesha water supply is Lake Michigan water. Lake Michigan water, unlike groundwater, can be returned, or recycled, back to its source. Groundwater is discharged to rivers that lead to the oceans, instead of being recycled back to the source.