

Strategies for water conservation: Is the price right?

By Jason Peterson

Northeast Illinois water suppliers are faced with a challenge: water demand in the area is increasing in the midst of growing limits on water supply.



“The 11-county water planning region is served by hundreds of public water supply systems, with no overarching regional water authority,” said Illinois Indiana Sea Grant (IISG) water resource economist Margaret Schneemann. “We are relying on the individual decisions of hundreds of utilities to implement conservation strategies to meet future water demand. Some may choose to implement these strategies, some may not. The question is what are the incentives leading to a decision one way or the other?”

Schneemann is leading a study of current residential rate structures to determine and recommend conservation pricing methods that promote sound regional water management. Her research is based on findings from a review of almost 300 water systems that collectively serve a population of 8.2 million in the region.

The current state of water in northeast Illinois is the result of a popular misconception about the region's resources. The historical perception is that water supply is unlimited, which is simply not the case. In fact, the amount of Lake Michigan water available for use is limited by a U.S. Supreme Court decree.

Meanwhile, according to the Illinois State Water Survey, portions of the deep bedrock aquifer are being drained and cannot be relied on to meet all future demand scenarios. As for the shallow aquifers, these ecosystems are vulnerable to pollution and depletion, which may be further exacerbated by climate change.

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“A primary aim of conservation-oriented pricing,” said Schneemann, “is to incorporate the full cost of water and thereby move the region to water prices that send correct signals to water users.”

For example, if the full cost of deep bedrock aquifer water is incorporated into pricing, it may become more cost-effective for water suppliers to draw from inland rivers or Lake Michigan, thereby allowing the aquifer to recover. In turn, Lake Michigan water users would be further prompted to continue the trend toward more efficient resource use.

Another aspect of conservation pricing is to create incentives for users to curb consumption without affecting prices on water necessary to survive. One strategy, called seasonal pricing, is to increase water rates during the summer, when water use is at its peak, in an effort to discourage excessive use.

“Residential water users often drive system capacity,” Schneemann said. “A decrease in consumption during peak periods will delay or prevent costly water system expansion.” The most important task, however, is to improve water billing and education. “If people do not understand what they are being billed for and do not monitor their use and water rates, the effectiveness of conservation programs will be compromised,” she added.

This study is a part of a larger effort by Chicago Metropolitan Agency for Planning and other Illinois-based agencies to provide regional coordination on water supply. As Illinois is required to comply with Great Lakes water conservation provisions, state funding and regional coordination will be critical.

“Without that coordination, you have hundreds of separate water systems making decisions based on their own interests. Regional water supply planning and conservation-oriented pricing provide incentives for sustainable water management that is both locally preferred and regionally optimal,” said Schneemann.

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Printed on Recycled Paper

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Illinois-Indiana Sea Grant is one of more than 32 programs of the National Sea Grant College Program created by Congress in 1966. Sea Grant is a partnership of universities, government, business, and industry that addresses marine and Great Lakes needs to enhance sustainable coastal economic development. Funding is provided by the U.S. Department of Commerce, National Oceanic and Atmospheric Administration (NOAA Grant # NA060AR4170079), Office of Sea Grant, University of Illinois at Urbana-Champaign, and Purdue University. The University of Illinois and Purdue University offer equal opportunities in programs and employment.

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