

## **Waukesha checks Root River health before Lake Michigan water diversion**

By Don Behm

The Milwaukee Journal Sentinel, February 19, 2017

University of Wisconsin-Parkside environmental science students and faculty last week dipped water out of an ice-free Root River to mark the start of a six-year checkup of the stream's health that will be paid for by the City of Waukesha.

The four-person crew took advantage of the S. 60th St. bridge in Franklin to lower empty containers attached to a rope into the brown, murky water. They collected a quart from five spots on the bridge before moving on to the next sampling location downstream at County Line Road.

Waukesha agreed to pay UW-Parkside up to \$106,199 this year to provide regular testing of river water quality as part of the planning underway for the city's switch to a Lake Michigan water supply in early 2023, Water Utility General Manager Dan Duchniak said. At that time, the city will return water to the Great Lakes by discharging fully treated wastewater to the river, a lake tributary, at S. 60th St.

The pre-discharge monitoring is not required by state regulators or the council of eight Great Lakes states that approved the diversion of lake water to Waukesha last June. Return of most of the water to the lake as fully treated wastewater is mandated by the 2008 Great Lakes protection compact.

Taking the river's temperature and collecting samples to be tested for nutrients and other health indicators will yield a complete picture of current conditions, said John Skalbeck, a geosciences professor at Parkside.

"Monitoring existing water quality prior to a new discharge is responsible science," Skalbeck said. The findings can be compared to monitoring results done after Waukesha begins discharging to the river.

Pre-discharge monitoring also will include; two fish surveys, one in summer and one in November; and two surveys of macroinvertebrates — everything from mussels and crayfish to leeches and beetles — that reside there.

On June 21 of last year, delegates for the governors of the eight Great Lakes states unanimously approved the City of Waukesha's request for a Lake Michigan water supply with conditions.

City officials had started down that path 13 years earlier with studies evaluating alternatives to its deep wells. Waukesha chose the lake in a June 2010 application to the states and that was followed by six years of review.

But it will take another six years for lake water to begin flowing to the city, said Duchniak.

The city is negotiating a final contract to buy lake water from Oak Creek and the Waukesha Common Council has set a mid-year deadline to seal the deal. Waukesha would build one set of pipelines and pumping stations to bring the water from Oak Creek to Waukesha.

One condition of the states' approval requires Waukesha to return 100% of the volume of water purchased from Oak Creek to the lake as fully treated wastewater. Another set of pipelines and pumping stations to be built by Waukesha would discharge that flow to the Root River, a lake tributary, at S. 60th St. in Franklin.

Waukesha has an option to purchase up to 74 acres southeast of the intersection of Oakwood Road and S. 60th St. for the discharge.

Route studies for the two pipelines are underway and public meetings are likely this summer, Duchniak said. A final route will be selected by December of this year.

The project was estimated to cost \$207 million. A financing plan with revised cost figures will be completed in early 2018, he said.

Another condition of the states' approval requires Waukesha to begin monitoring water quality in the Root River as soon as the diversion is up and running. The monitoring would be done for a minimum of 10 years to determine if the city's discharges change conditions in the stream.

"We're going above and beyond" the states' monitoring requirement by starting now, he said. "Our goal is to ensure the protection of the Root River."

At Waukesha's request, the U.S. Geological Survey has installed a permanent gauge in the river at the S. 60th St. crossing to continually measure and record water flow and temperature, according to USGS hydrologist Rob Waschbusch. Last week, the agency installed a separate probe on the river bottom for continually recording other water quality measures, such as levels of dissolved oxygen and turbidity, he said.

Delegates of the eight states in June affirmed the city's plan for diverting lake water — as amended by conditions imposed by the states — would comply with terms of the Great Lakes protection compact.

A legal challenge to the diversion approval is expected from a group of mayors representing Great Lakes cities in the United States and Canada.

Absent the success of such a court action, Waukesha would become the first U.S. community located entirely outside the Great Lakes drainage basin to receive a diversion of lake water since the compact became federal law.

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<http://www.jsonline.com/story/news/local/milwaukee/2017/02/19/waukesha-checks-root-river-health-before-lake-michigan-water-diversion/97939854/>