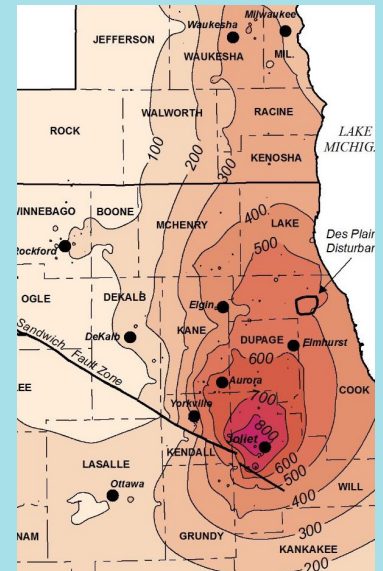


From Waste to Water: A Framework for Sustainable Freshwater Supply in Northeastern Illinois

Project Overview

There is a looming water crisis in Northeastern Illinois:

- The Cambrian-Ordovician aquifer, which provides water to communities in Will, Kendall, Kane, and DuPage counties is collapsing.
- The largest aquifer drawdown from a single community has been in the city of Joliet (the third most populous city in Illinois), where the aquifer's water level has fallen by over 800 feet (Right).
- In order to avoid catastrophe, Joliet turned to the City of Chicago, which agreed to supply Joliet with treated Lake Michigan drinking water no later than January 1, 2030.
- Other communities on the collapsing aquifer will seek similar agreements for water supply from the city of Chicago.
- In the long run, providing Lake Michigan water to communities on the collapsing aquifer for all uses is not feasible or responsible because of diversionary limits.



Source: Illinois State Water Survey, 2015

If Chicago is going to provide water to communities reliant on the collapsing Cambrian-Ordovician aquifer, then it must do so sustainably.

A feasible water recycling solution exists to responsibly provide Lake Michigan water to communities relying on the collapsing aquifer:

- Chicago produces substantial treated wastewater that is currently not being used. This presents a missed opportunity for revenue.
- The Metropolitan Water Reclamation District of Greater Chicago (MWRD) and City of Chicago can make money in an environmentally responsible way through supplying industrial water users in Joliet and beyond with recycled water.
- This immediate water re-use strategy supplies recycled water for industrial uses – not for drinking.

This solution enables a more resilient future for Northeastern Illinois where:

- The quality and quantity of Lake Michigan water is preserved for human health and sanitation.
- Suburban and exurban Illinois communities are protected from the destabilization of water source loss.
- The costs of waste management are transformed into a revenue generating endeavor.

The University of Illinois Chicago Freshwater Lab and Great Cities Institute prepared a report for Metropolitan Water Reclamation District (MWRD) in April of 2023 that assesses the environmental, infrastructure, public health, and economic feasibility of implementing water recycling for industrial users in Northeastern Illinois. The report advances recommendations for a dual-pipeline system to provide drinking and recycled water to Joliet, which can serve as a model for communities throughout northeastern Illinois.