

# WATER NOW & INTO THE FUTURE

## Microfiltration Plant Delivers Safe, Affordable Water to Central Wisconsin Communities

### The Challenge ... And Solution

**F**or 30 years, six central Wisconsin communities relied on the St. Peter Sandstone Aquifer as their water source.

As the communities grew, demand far exceeded the aquifer's supply, and there was talk about potential contamination. The Central Brown County

Water Authority (CBCWA) was created to identify and procure an alternative water source quickly. Manitowoc Public Utilities (MPU) offered a cost-effective, safe, sustainable water supply system.

The result was a fast-track-designed \$24-million, 25-mgd microfiltration plant, intake, pumping, and storage systems that deliver safe, affordable water to 77,000 new customers.



### Project Key Features

- Creative options for intake design, including alternative lengths and diameters to match construction costs to project funding
- A 25-mgd, five-cell submerged membrane system using state-of-the-art hollow fiber technology that provides continuous microfiltration and a physical barrier to micro-organisms
- A 50-percent reduction in chemical usage, including chlorine for disinfection
- A modular design of membranes that provides flexibility for plant expansion
- Reuse of existing structures, including installing membranes within modified existing filter basins
- Innovative use of a membrane "swing cell" that can operate as a secondary treatment system of backwash water during winter, when water has a high solids content



The project was divided into four construction contracts, enabling construction to occur simultaneously on the fast-track schedule. Above, the intake is installed into Lake Michigan.



Above, Members of CBCWA, MPU, AWWA, and the engineering design team attended the plant's ribbon-cutting in July 2008. Below, an overview of the five-cell membrane system.



**Manitowoc Public Utilities**  
Design of 25-mgd Microfiltration Water Treatment Plant



Milwaukee, WI



**AMERICAN COUNCIL OF ENGINEERING COMPANIES**  
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