



# From Wastewater to Resource Through Reuse

Faced with growing concerns about drought resilience and the economic burden of supplying potable water to the Tharaldson Ethanol Plant, the City of Fargo launched an innovative water reclamation partnership in 2007. Instead of discharging all treated wastewater into the Red River of the North, a portion is now diverted to an advanced treatment facility where it is purified to high standards for industrial reuse. This approach benefits the City, the industry, and the environment, ensuring a reliable, sustainable water source while conserving potable and groundwater supplies. By transforming wastewater into a valuable industrial resource, the City of Fargo is closing the loop by supporting its economy, safeguarding its environment, and serving as an example of sustainable water reuse.

- ✓ **REDUCE**
- ✓ **RECOVER**
- ✓ **REGENERATE**



**FARGO, NORTH DAKOTA, USA**



**WASTEWATER**



**DRINKING WATER**



**INDUSTRIAL**



## CHALLENGES FACED

To meet the requirements of the North Dakota State Water Commission (NDSWC), the City conducted an evaluation comparing river flows with projected water supply needs. Based on this analysis, the NDSWC granted conditional approval for the City's point of diversion permit.

## TECHNOLOGIES & SOLUTIONS USED

Secondary wastewater is treated to a high standard using a Hybrid Integrated Fixed Film Activated Sludge (IFAS) system—an advanced and resource-intensive pretreatment process. The treated water then passes through ultrafiltration (UF) skids and reverse osmosis (RO), producing high-quality reclaimed water suitable for industrial use. City of Fargo staff developed a custom cleaning “recipe” for treatment components through years of hands-on experimentation.

## IMPACT & INSIGHTS



Over eight years, the project has produced and supplied more than 6 billion gallons (~23 million m<sup>3</sup>) of high-quality reclaimed water, reducing pressure on domestic, groundwater, and surface water sources.

### Key Benefits:

- Preserved valuable groundwater reserves that might otherwise have been depleted.
- Diversified City revenue through reclaimed water sales to industry.
- Strengthened water security while supporting local industry and environmental sustainability.

## LESSONS LEARNED



The agreements between the industry and the City of Fargo established that the Effluent Reuse Facilities (ERFs) are owned by the City, while the industry controls operational capacity.

Although the industry funded the construction of the ERFs, now under City ownership, there are limitations that restrict future expansion to serve additional industrial users.

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**Effluent Reuse Facilities are a tool to conserve freshwater resources and help reduce effluent discharge volumes, all while being a funding source for financial stability.**

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