

Kishwaukee Water Reclamation District



SHARED ENVIRONMENTAL BENEFITS AND COMMUNITY DEVELOPMENT THROUGH WASTEWATER REGIONALIZATION

THE CHALLENGE

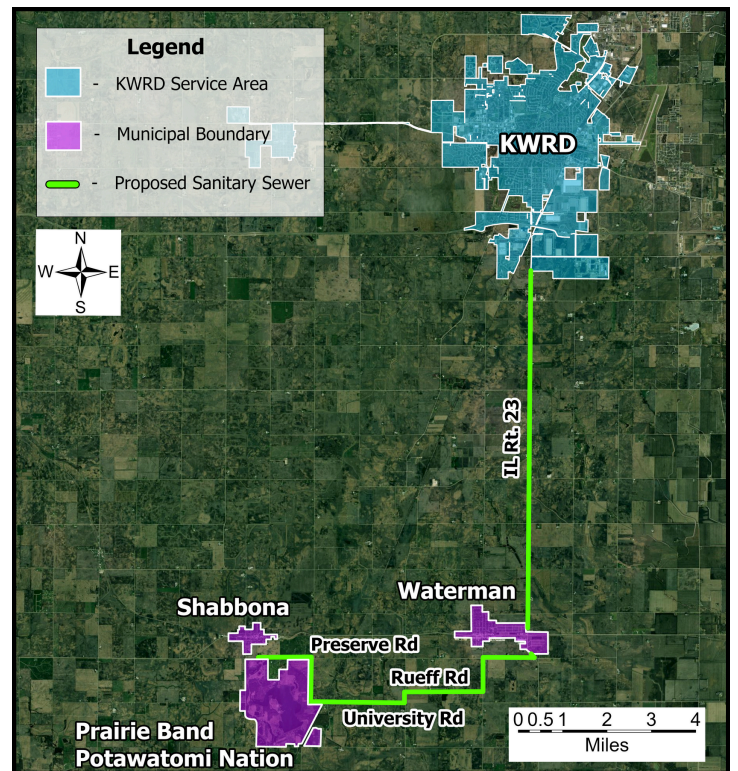
As environmental regulations grow ever tighter, many small communities in Illinois find themselves in a challenging position. The wastewater treatment plants serving the Village of Waterman and the Village of Shabbona are beyond capacity, freezing both villages' ability to grow. Residential subdivisions and the Prairie Band Potawatomi Nation's (PBPN) proposed development are unable to proceed with construction, and economic development in this entire region is stalled until wastewater treatment capacity is created. The 50-year-old lagoon-style systems operated by both Villages can no longer meet regulatory requirements, meaning expansion of each facility is out of the question – to add capacity, the Villages need entirely new facilities.

This predicament – unable to grow and challenged to replace aging wastewater infrastructure that cannot meet current or future environmental regulations is not easy to resolve. Recent planning studies estimate the cost of modernizing the Village of Waterman's and Village of Shabbona's treatment facilities would be \$18 million and \$12 million, respectively. In addition to the capital expense, these facilities would require full-time staff for operations. Constructing a new facility and funding annual operations could increase existing sewer rates by more than 3X.

A REGIONAL SOLUTION

The Villages and the PBPN have partnered with the Kishwaukee Water Reclamation District (KWRD) to consider a regional service concept. KWRD maintains a vast network of sewers and a state-of-the-art net zero energy treatment facility with over 4 million gallons per day unutilized capacity. This partnership has the potential to save millions in capital and operational expenses while making a positive impact on the environment.

The four partners recently completed a sewer feasibility study to evaluate the constructability and cost of a sewer extension project. The study identified that waste from the entire region could be transmitted to KWRD's existing sewers located on the south side of the City of DeKalb. This regional sewer extension would include the construction of 18 miles of sewers and a pumping station that would allow the partner communities to grow over 10x their current sizes. The cost of this project is estimated to be \$24 million and partnering with KWRD enables State of Illinois revolving loan funding incentives, like debt forgiveness for consolidation of NPDES discharges (3 discharges are reduced to 1). This project would allow KWRD to leverage its economies of scale to reduce up-front capital and long-term operational costs.



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REGIONAL OPPORTUNITIES AND BENEFITS

This project would deliver Waterman, Shabbona, and PBPN all the advantages of a new, efficient, fully staffed water reclamation facility without assuming the full capital and operational costs. KWRD would assume wastewater services currently provided by each Village. The residents of these communities would pay the same sewer rates as current KWRD customers.

Because the costs of ongoing maintenance and operations at the reclamation facility are spread over more users, rates for current KWRD and new customers stay affordable through economies of scale. The Villages and the PBPN will have ample sewer capacity to grow through new construction. This capacity will encourage the pursuit of economic, industrial, as well as affordable residential development to flourish.

KWRD can add value to the project by providing in-house engineering and technical staff for construction management and inspection services as well as loan and grant funding experience.

PROGRESS THROUGH PARTNERSHIP

- **Total Project Cost - \$24 Million**
 - 10x Capacity for Growth
 - 3x Reduced Cost vs Alternative
 - 3 Consolidated NPDES Discharges
 - Improved Water Quality

ENVIRONMENTAL BENEFITS

Consolidating the two Villages' wastewater treatment facilities will eliminate two NPDES discharges to our local waterways. The elimination of the two aged, less efficient facilities will greatly improve local water quality by significantly improving the reduction of harmful contaminants.

- Biochemical Oxygen Demand (BOD) will be reduced by more than 20,000 pounds/year
- Total Suspended Solids (TSS) will be reduced by more than 25,000 pounds/year
- Ammonia Nitrogen (NH₃) will be reduced by 7,000 pounds/year
- Phosphorus (P) will be reduced by 3,000 pounds/year
- Fecal Coliform/E. coli will be reduced by 90%

In addition, KWRD has made a commitment to maintaining its status as a net-zero utility by creating over 100% of its energy usage from renewable resources. KWRD's facility utilizes biogas produced through reclamation process to generate its own electrical power, even pushing back electricity to the public grid. KWRD plans to continue its "green" initiatives to continue is environmental stewardship.

CONCLUSION

The partnership of the Villages of Waterman and Shabbona, and the Prairie Band Potawatomi Nation with the Kishwaukee Water Reclamation District represents a common-sense local government initiative. Few projects can fuel transformational residential and economic development while reducing duplicate government service, improving the environment, and providing economic relief to over 50,000 rate payers (nearly half the total residents of DeKalb County, IL).

