NEW Water, the brand of the Green Bay Metropolitan Sewerage District

By Tricia Garrison, APR, Public Affairs & Education Manager for NEW Water

All photos courtesy of NEW Water, the brand of the Green Bay Metropolitan Sewerage District

An aerial view of NEW Water's Green Bay Facility.

"Do you cool your food with impure ice and jeopardize your health?" asked a 1900s newspaper ad for "modern refrigerators" in Green Bay, Wisconsin. Ice harvesting for "ice boxes" was big business until the advance of river pollution, with its bad odors and threat of cholera.

Crews would even spray perfume onto the East River to mask the stench. It didn't help. With ever increasing fish kills and the public health threats caused by polluted waterways, "something" had to be done.

In 1931, a group of visionaries created the Green Bay Metropolitan Sewerage District,* which now serves an ever-growing community of more than 239,000. The regional clean water utility is a wholesale provider to 15 municipalities, as well as businesses, industries, and visitors. NEW Water cleans on average 41 million gallons each day between its two wastewater facilities in Green Bay and De Pere.

These days, NEW Water faces similar challenges to those across the clean water sector: aging infrastructure, workforce retirements, rising costs, regulatory pressures, impaired waterways, and ever-growing community needs.

NEW Water strives to provide cost-effective services, embrace innovation, and champion its workforce, whilst keeping an eye to the future. Here are some highlights of happenings from this clean water utility.

Planning for Continued Service: From Solids to Liquids

NEW Water has surveyed its municipal partners to find out: what is most important to them about NEW Water services? Consistently ranked #1 is "reliability."

"Our community wants to know they don't have to worry about our services being there, 24-7-365, to support their needs," said Nathan Qualls, P.E., NEW Water's Executive

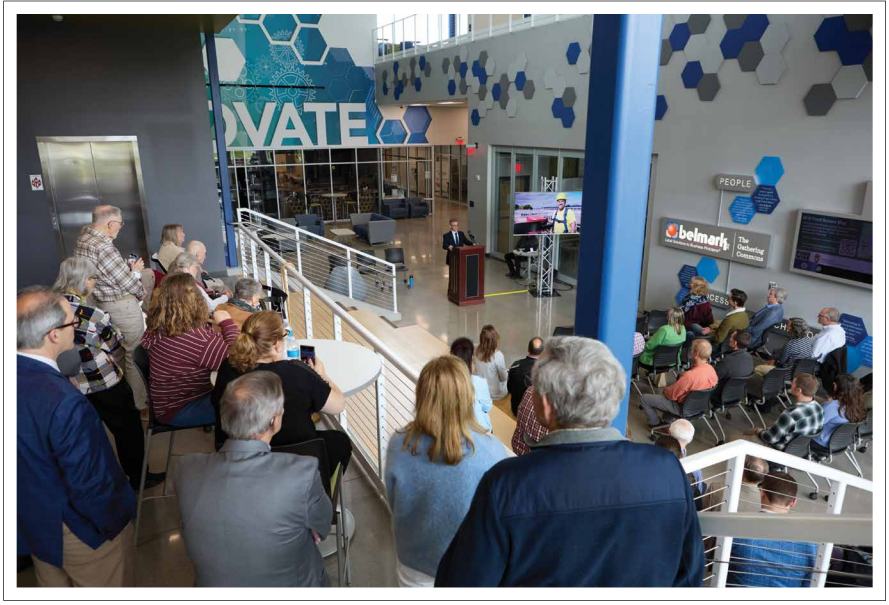
Director. "NEW Water continually plans for the future by evaluating infrastructure condition and capacity needs. This critical infrastructure requires investment, in order to provide the reliable service our community expects."

Less than a decade ago, NEW Water completed significant upgrades with implementation of its Solids Facility Plan, which embraced sustainability in its approach: R2E2, or Resource Recovery and Electrical Energy facility. R2E2 saves about $1.25 million a year in avoided energy costs, recovers heat for beneficial reuse, and uses anaerobic digestion and co-generation to produce nearly 40% of its electrical needs for its Green Bay Facility.

In 2022, the utility completed a Liquids Facility Plan, which is now being implemented through various capital projects. The Plan is a comprehensive look at process needs over the next 20+ years. The Plan addresses condition, performance and capacity gaps, develops infrastructure improvement packages, and evaluates project prioritization and cost impacts.

To manage cost impacts, NEW Water developed a Strategic Financial Plan in conjunction with the Facility Plan. The Strategic Financial Plan is a process to help mitigate large rate increases in any given year by forecasting future revenue requirements, evaluating the need for building and using capital reserves, as well as evaluating alternative project funding approaches.

NEW Water's employees together in 2025



In 2024, Wisconsin Governor Tony Evers proclaimed May 22 as Wisconsin Wastewater Professionals Appreciation Day. NEW Water recognized this day by celebrating staff and welcoming the incoming Executive Director.

Innovating for Energy & Cost Savings: Pilot Project

As part of the Liquids Facility Plan, it was determined that the secondary treatment process at both facilities would be upgraded, due to aging infrastructure, potential for energy savings, and improved performance to meet effluent permit limits now and in the future.

"Prior to making these investments, it is important to identify and test the impact of improvements on their ability to improve capacity, improve effluent quality, and lower energy usage," said Tyler Biese, NEW Water's Staff Engineer.

The team launched a South Plant Mixing Enhancement Study (targeted research pilot project), at its Green Bay Facility, which is currently underway. They wanted to test using less oxygen in the treatment process to save energy and get more robust biological nutrient removal.

Process modelling, coupled with historic operational data indicated that the facility would be a good candidate for a low dissolved oxygen operation. The pilot is testing how well the microorganisms, aka bugs, perform under varying anaerobic, anoxic, and aerobic conditions, to maximize performance and reduce energy demands of the biological treatment process (see enclosed photograph).

Process air compressors at NEW Water are used to provide compressed air to the secondary treatment process and have been in nonstop operation since the 1970s. They are significant energy users and also are oversized for the need – which means there is substantial opportunity for energy savings with the next iteration of process design and equipment purchased in a future capital project.

"The pilot project is being done to inform the optimization of that design," said Jake Becken, NEW Water's Treatment Manager. "This could mean a big operational cost savings for us and more resilient process performance."

Workforce Development

Emily Tietyen, NEW Water's Human Resources (HR) Manager, says investment in workforce development is critical to a healthy workforce. The biggest challenge she sees is general awareness of careers in the clean water sector.

"People know and appreciate water – but they don't know that there's work available to protect that resource," she said. "These roles offer

so much, such as connection to the community and the environment. It runs really deep."

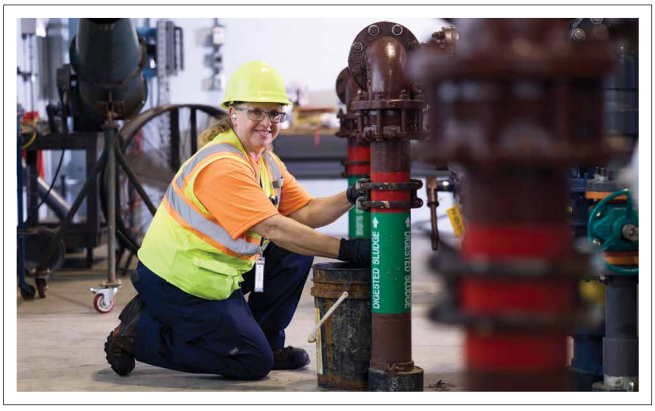
She supports focused efforts with educational institutions, career fairs, and additional outreach to increase awareness, which in turn boosts recruitment. Examples of this include an active educational outreach program, which features talks and tours with area schools, career and educational booths, and a STEAM Superheroes camp with the Boys & Girls Club.

For retention, she credits staff engagement, development opportunities, as well as membership in professional clean water organizations, such as Wisconsin Wastewater Operators Association, Central States Water Environment Association, and National Association for Clean Water Agencies (NACWA).

"It's great to see our team not only participating in meetings and bringing ideas, but also taking leadership roles in these organizations," she said. "It creates a deeper connection to the daily work and builds strong leaders for the future."

To address the so-called "greying workforce," she said that working internally with managers is critical, for the transfer of institutional knowledge. This is accomplished in part by robust training and programs, including internships and apprenticeships, including a Youth Apprenticeship for high schoolers, as well as Apprenticeships for Electrical & Instrumentation, Mechanical and Operations. To achieve success, Tietyen advises utilities to prepare for a time commitment and to dedicate staff for support and training.

HR teamed up with Treatment and the Public Affairs & Education teams on a campaign to promote a new Apprenticeship position. The team



NEW Water's Treatment Operator collecting a sample from the solids handling facility centrifuge.

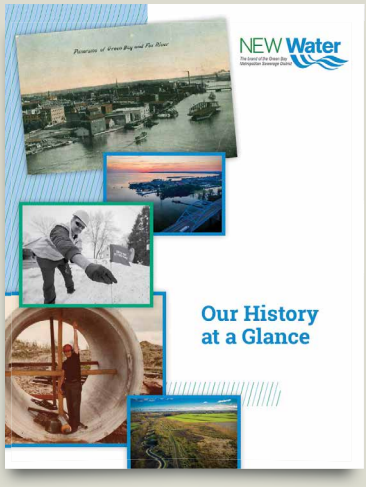
Teamwork in action as NEW Water's Utility Workers collaborate and review equipment.

planned and implemented targeted outreach with technical colleges, career fairs, social media, and new videos with Tietyen and Becken. The campaign prompted a 148% increase in website traffic coming from social media.

"We had excellent response to the apprenticeship posting, gaining more interest than we had seen in previous offerings," said Becken. "I am a big fan of outreach, to get folks interested in the work we do, and perhaps to come work with us."

NEW Water's Maintenance Mechanic ensuring critical equipment operates efficiently to minimize downtime and maintain reliable service.

Learn more about NEW Water's history here: *https://www.newwater.us/about/history



Water Reuse Project

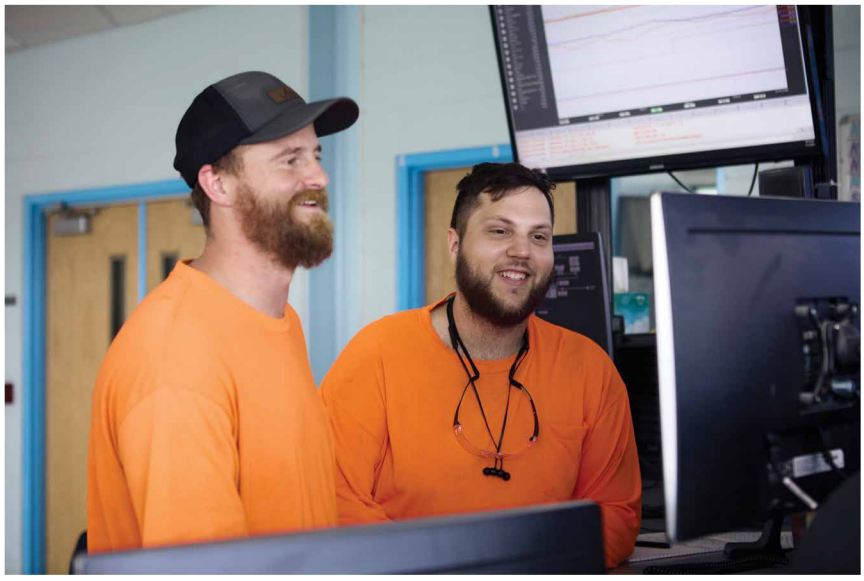
Another innovation at NEW Water came from an area industry, which was looking to build a new paper mill, and implement a closed-loop water system in those operations. They approached NEW Water to see if it could be possible.

This unique reclaimed water system is the first in the state of Wisconsin. It allows the mill to operate with the water it needs without discharging a single drop of wastewater into the Fox River.

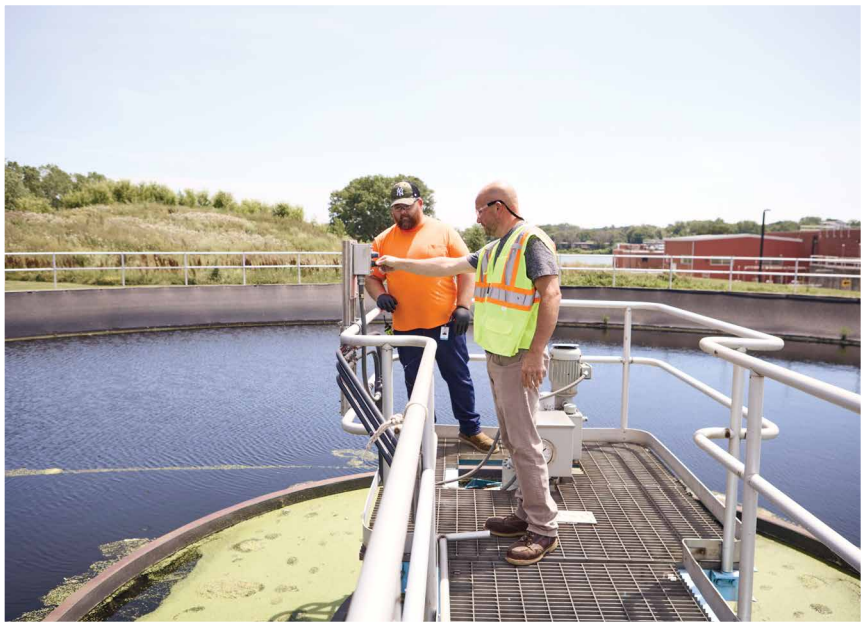
The mill's wastewater is discharged to NEW Water, where it is treated and returned back to the company through an underground piping system.

The initiative was possible thanks to a partnership established with the industry, as well as the county and NEW Water. The partnership reflects a community commitment to sustainability, and provides an economic boost to the area.

About one million gallons of water are cleaned and returned back to the mill, each day. This is the first time in NEW Water's history that the purple pipes, which signify water reuse, have been used, marking another exciting chapter in sustainability for the utility.



NEW Water's Treatment Operators are collaborating in the control room.



NEW Water's Treatment Manager, Jake Becken, quoted in the article, mentoring the Operator Apprentice.

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Advocating & Partnering for Clean Water

In December 2024, Nathan Qualls became Executive Director at NEW Water. With this, the team set out to expand outreach and engagement with community partners and audiences, including elected officials. In addition to engaging with key federal, county, and municipal leaders, NEW Water hosted all state elected officials in its service area for individual meetings and tours of its Green Bay Facility.

"This has been well worth the investment of time," said Qualls. "Developing relationships with our elected officials is an opportunity to enhance understanding of the critical services we provide for their constituents. I am grateful for their shared commitment to protecting our water resources."

In 2025, these relationships proved to be foundational to a state-wide effort for the protection of clean water.

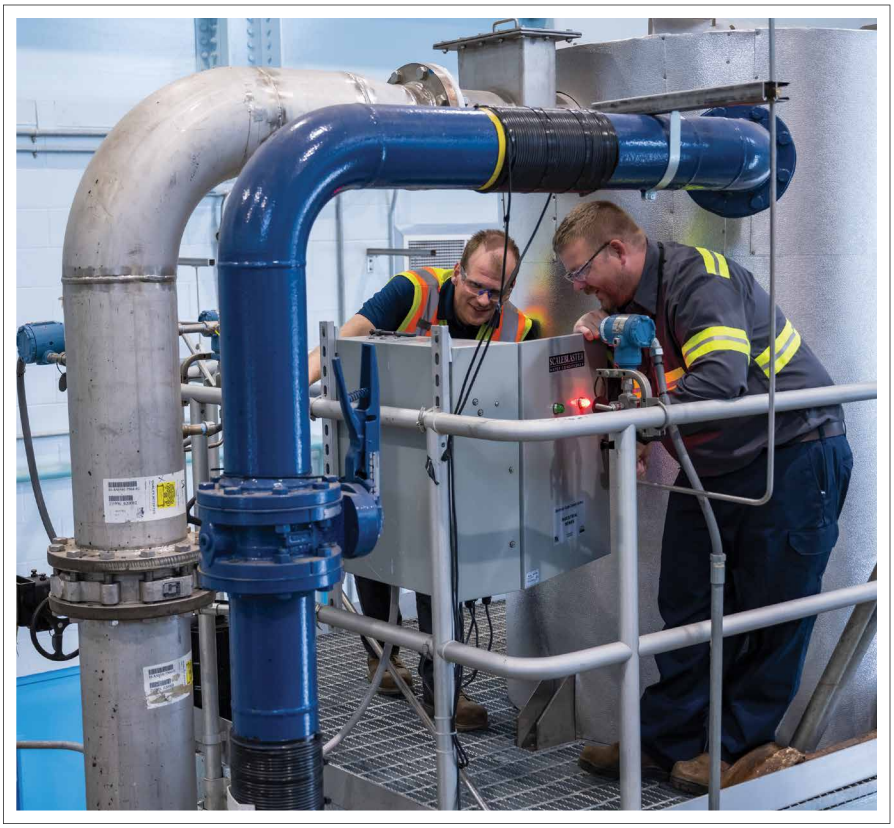
With wastewater utilities across the U.S. facing challenges with potential financing shortfalls at both the federal, and state levels, NEW Water dove in to advocate for these funds in 2025. NEW Water joined national efforts led by the National Association of Clean Water Agencies, by speaking with and sending letters to federal officials requesting support to address proposed budget cuts to the Clean Water and Drinking Water State Revolving Funds for critical sewer projects.

In Wisconsin, NEW Water joined a Clean Water Coalition of wastewater and water utilities, the Municipal Environmental Group, and the Wisconsin League of Municipalities, to advocate for increased bonding authority for the Wisconsin Department of Natural Resources to be able to adequately fund the Wisconsin Environmental Improvement Fund – which administers the Clean Water Fund.

Families, businesses, and industries in NEW Water's service area benefit greatly from these funding sources. NEW Water applies for and receives low-interest loans for infrastructure projects, without which costlier financing alternatives would be needed.

NEW Water engaged municipal partners on this effort as well, and greatly appreciates their support. In June 2025, the Wisconsin Joint Finance Committee voted unanimously (16-0) in support of this infrastructure funding.

"This victory truly shows the benefits of teamwork," said Toni Herkert, Government Affairs Director with the League of Wisconsin Municipalities. "Our coalition's education and advocacy efforts helped legislators understand the statewide need and beneficial impact



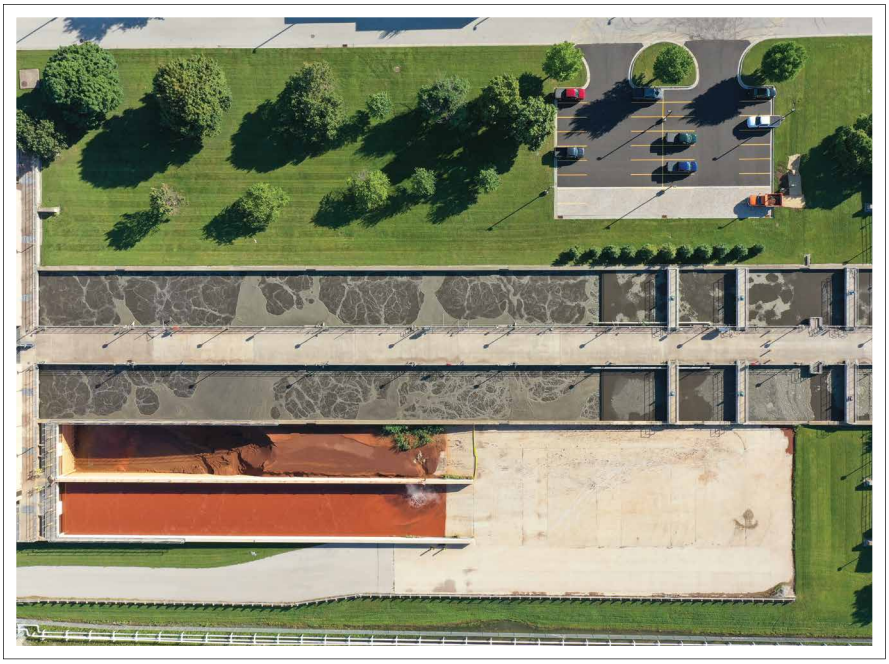
Cross-department collaboration with NEW Water's Staff Engineer, Tyler Biese, who is quoted in the article, about the dryer equipment operations.

NEW Water Facilities & Processes

NEW Water owns and operates two wastewater facilities: the Green Bay Facility (GBF, average 33 mgd); the De Pere Facility (DPF, average 8 mgd). Processes include:

- GBF liquids: influent pumping, screening, primary clarification, primary sludge grit removal, activated sludge biological treatment, secondary clarification, and disinfection.
- GBF solids: sludge thickening, anaerobic digestion, dewatering, solids drying and incineration. A byproduct of anaerobic digestion is biogas used to generate electricity (approximately 40% of needs for the GBF).
- DPF liquids: screening, influent pumping, grit removal, activated sludge biological treatment, intermediate clarification, final clarification, disc filters, and disinfection.
- DPF solids: are piped to and treated at the GBF.

"From the perfume-masked rivers of the 1900s to today's cutting-edge resource recovery, NEW Water continues to define its legacy through innovation and advocacy."



NEW Water's Green Bay Facility South Plant secondary treatment process currently undergoing a pilot project.

of our request. While the sticker shock of our ask was a significant hurdle, our coordinated messaging strategy made this request a reality."

NEW Water is committed to building partnerships, and harnessing innovative watershed efforts, both of which help to protect receiving waters.

"We are temporary stewards of Wisconsin's precious water resources, and our team is proud to serve," said Qualls. "Our goal at NEW Water is to care for our infrastructure and our environment, and leave it in a better condition for generations to come. I am incredibly proud of the NEW Water team and the partnerships we have built to make this all possible."

From the perfume-masked rivers of the 1900s to today's cutting-edge resource recovery, NEW Water continues to define its legacy through innovation and advocacy. The utility remains a steadfast guardian of public health, by investing in its infrastructure and people, to ensure that its receiving waters are as clear as its vision. CS