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AERIAL VIEW OF NEW WATER'S GREEN BAY FACILITY, GREEN BAY, WISCONSIN

The Clarifier

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NEW Water, the brand of the Green Bay Metropolitan Sewerage District Providing Continuous Service — No Matter the Weather

By Tricia Garrison, APR, Public Affairs & Education Manager

On Tuesday, April 14, Treatment Operator Tyler Hoops walked into the Control Room to begin his shift – and saw an unusual sight for 3 o'clock in the morning: His manager. "Right away, that screams – something is happening!" Hoops said.

That night, a perfect nightmare unfolded as relentless flows overwhelmed NEW Water's Green Bay and De Pere Facilities. In late March, storms of some 25" of snow pummeled the region, followed by rising temperatures and rapid snow melts.

In early April, a series of volatile thunderstorms hit the area.

The once-frozen tundra became suddenly saturated – unable to absorb another drop – as intense storms continued to hammer the region for three straight days.

By 3 o'clock on April 14, the wastewater system was struggling to handle the massive flow. That night's flow

reached a peak hourly flow of 228 million gallons per day, well above the system's design capacity of about 166 million gallons per day (between both Green Bay and De Pere Facilities). The team huddled to figure out how they would keep the system moving

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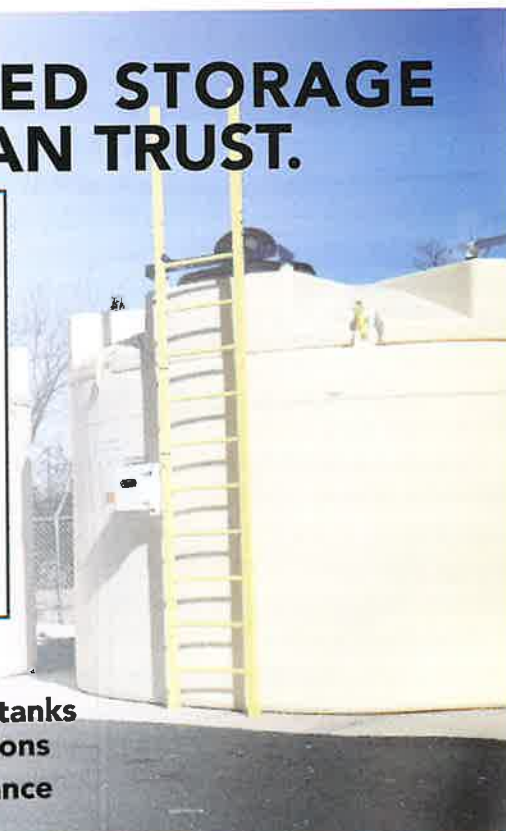
*NEW Water
Treatment Operator,
Tyler Hoops,
quoted in the article,
putting on his personal
protection equipment.*



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water throughout the night – to protect public health, and the treatment plants.

“Our huge problems were at the head of the plant – the choke point,” said Hoops.



NEW Water's grit classifiers overwhelmed as the surge of grit and chunks of asphalt poured into the plant.

SCADA (Supervisory Control and Data Acquisition) showed the grit classifier was not moving. “We went to check it – you could hear the gravel in the pumps, it was like wind chimes, or Christmas bells,” Hoops recalled.

The fast influx of water seeping into pipes throughout NEW Water's service area created a giant “flush,” including pushing through grit that had likely settled at the bottom of pipes for years. All that accumulated grit surged towards the facility at once, overwhelming the equipment. Every available pump was running at full capacity. Grit and chunks of asphalt poured into the plant so quickly that they spilled over the grit classifier.

The crew improvised. They shoved a broom handle into the grit classifier to pry chunks of asphalt from the equipment and keep it operating. They shoveled more than five wheelbarrows full of grit from the floor – and yet it kept on coming. “We spent a good portion of that 12-hour shift dealing with asphalt,” Hoops recalled.

“You go where you're needed,” Hoops said. “We can't have the plant flood out!”

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Against all odds, the plant did not have to divert flow – this was owing to the sheer dedication of the staff, who worked tirelessly day and night during that fateful week.

Meanwhile, Out in the Collections System...

While the teams at the Green Bay and De Pere Facilities battled the influx of flows, the team out in the Collections System also rallied to protect equipment and keep flow moving.

"The key was to manage the flow in order to keep the system operational," said Sharon Thieszen, Field Services Manager. "Our team did an incredible job working day and night, with additional help from area haulers, to make this happen."

"It takes experienced, knowledgeable, and highly trained staff to make emergency decisions to ensure continuous wastewater treatment service to our community."

As storms continued, NEW Water's East River Lift Station (ERLS), which serves a growing residential and business community, was under threat of flooding. NEW Water worked with community partners to build a berm to prevent flooding of the transformers serving that lift station.

An ERLS project is currently being scheduled to protect

this important infrastructure. This project will move transformers to higher ground, secure the wet well, increase capacity at the lift station, and provide reliable emergency backup power. Severe flooding in 2019 helped inform design of both the lift station improvements and the proposed force main. This project addresses the need for future service,

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The berm around the ERLS, protecting the transformer, which is the green colored structure in the back. The level monitoring is in the foreground, which indicates if the water level would exceed the berm.



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to continue to support residential growth and economic development.

Preventative Maintenance & Team Readiness

Thieszen praised NEW Water's preventative maintenance program – and highlighted how it helped the team better mitigate the storm.

"That the equipment is ready to go is significant. Pumps were working, alarm systems and notification systems were reliable, and alerted staff to high flows and pump issues," she said.

Because of these alerts, staff were informed – in a timely fashion – that pumps needed to be reset. The team was out there doing this, around the clock.

The destructive storms of 2026 tested the NEW Water team, but they did not stop the team's commitment or service.

During the calm of day, the team plans for emergencies, participates in professional development, and pulls together

when it matters the most. Additionally, staff closely monitor the weather throughout the day and night to prepare for storm events. With increasingly frequent storm events, this preparation is proving to be worthwhile.

In April, the Green Bay Facility hit all-time flow records for the amount of water pumped in an hour, in a day, and for an entire month. And then in June, yet another significant flooding event drenched Northeast Wisconsin. Within the span of just three months, extreme storms hit the region, and it is predicted that extreme weather events will continue with greater frequency and intensity.

These intense wet weather events underscore the importance of ensuring that systems are reliable now, and into the future.

Inflow & Infiltration Impacts

As clean water industry professionals are well aware, added flow to a wastewater system during storms is not happening because people have decided to flush their toilets more frequently.

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It's due to Inflow & Infiltration (I&I), a wicked phenomenon which sends rainwater and groundwater into the sanitary sewer system through cracks in laterals from people's homes, leaky pipes in the sanitary sewer system, improper routing of rainwater into the sanitary sewer system, and many other sources. Industry estimates indicate that more than 50% of I&I comes from the private homeowner side of things.

Additional problems caused by I&I are demonstrated during wet weather events when infrastructure is stressed beyond its capacity. Across the wastewater industry, excessive I&I in sanitary sewer systems increases risks for sanitary sewer overflows and basement backups.

This poses a significantly tricky challenge, leaving wastewater professionals to scramble and hustle to ensure the community can use this critical service, despite the onslaught of storms.

What's NEW Water Doing About This?

Through its Regional I&I Reduction Program, NEW Water has convened a Technical Advisory Committee (TAC) comprised of municipal partners to address this challenge.

The solution to I&I is not to simply upsize NEW Water's facilities. This is not a cost-effective approach.

NEW Water commissioned a report which determined that a combination of I&I reduction and infrastructure upgrades throughout the service area could result in avoiding 20% of future cost as compared to infrastructure upgrades only. When talking about hundreds of millions of dollars, the cost adds up quickly, and the savings can be significant to the families, businesses, and customers who rely on this critical service.

Partnering on a community-wide approach to solve this problem is more cost-effective and sustainable.

Planning for the Future: Nonstop Community Service

As a forward-facing utility, NEW Water is continually planning for the future. This means keeping in close contact with our community – including municipal and industrial partners, planners, those involved in economic development, elected officials, and community leaders. While NEW Water does not offer economic development incentives, we also do not wish to prohibit growth in our

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region. As such, NEW Water is continually planning to ensure that residents, businesses, and visitors can rely on our services around the clock.



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

Looking backward, a Solids Facility Plan was completed in 2008, and resulted in the completion of the Resource Recovery and Electrical Energy, or R2E2, Facility, in 2018. R2E2 reflects a new attitude of viewing what's sent to the



An aerial view of NEW Water's De Pere Facility.

utility as a resource to be recovered, rather than simply a waste in need of disposal. With R2E2, nearly 40% of NEW Water's Green Bay Facility's electricity is produced and additional heat is recovered. As added benefit to R2E2, high-strength waste is accepted, which offers an environmentally friendly outlet for dischargers (such as dairy whey), while providing an added boost to the electrical generation process.

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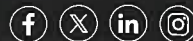
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R2E2 has required a significant amount of training for staff – who have essentially become “energy managers” in addition to their many other skillsets. They ensure continuous operation of the solids facility, while striving for best utilization of the biogas for the lowest cost.

“This system is unique – with its fluidized bed incineration, biogas generation, and so much more. This speaks to the dedication of our team that they’ve stepped up to ensure this complex system is continually running,” said Patrick Wescott, Director of Operations.

With a growing community which relies upon NEW Water’s critical services, NEW Water’s continuous planning never stops. Efforts began in 2019 to develop a Liquids Facility Plan (Facility Plan), which included a critical look at facility needs for the next 20 years on the liquids side of the operations. This plan identified numerous project recommendations.

Not only is facility planning considered a best practice in the clean water sector – it’s also a requirement from the Wisconsin Department of Natural Resources. It is also an important step toward being eligible for Clean Water Fund

financing – which is a critical financial component to offset costs for customers. In Wisconsin, this is administered through the State Revolving Fund, and NEW Water is actively advocating for continued funding of this important program to help offset sanitary sewer service costs for families, businesses, and industries.

Facility Plan for Green Bay and De Pere Facilities

The Facility Plan was completed in July 2022, and is currently being implemented throughout the Green Bay and De Pere Facilities. Numerous projects address drivers including:

- Capacity
- Operation and maintenance requirements
- Energy usage
- Asset renewal
- Regulatory.

Projects currently underway include:

- **North Plant Primary and Final Clarifiers at the Green Bay Facility*.** NEW Water has 12 clarifiers in the North Liquid Treatment Complex (4 primaries, 8 finals). This project includes rehabilitation of the concrete clarifier structures; replacement of all

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mechanical components; and replacement of pumps that serve the clarifiers.

*Note: The project for the two final clarifiers in the South Liquid Treatment Complex will be scheduled for the future.

- **Thickening at the Green Bay Facility.** This project includes replacement of existing mechanical thickening and gravity thickening equipment and enhances NEW Water's thickening capacity and performance.
- **Pump Station and Headworks at the Green Bay Facility.** This effort is currently under design. It will address aging infrastructure and capacity, with replacement of existing influent pumps and screening equipment.
- **Pumping and Headworks at the De Pere Facility.** This project includes replacement of influent pumps, screens, and conversion of existing Preliminary Treatment Units (PTUs) with traditional influent degritting.
- **Downtown Interceptor Renewal Project.** Currently underway, this project includes

rehabilitation of approximately 13,000 feet of sanitary sewer and 25 manholes located in and around downtown Green Bay. The renewal will enhance reliability, reduce maintenance on the system, and reduce I&I as well. In addition, the project will properly abandon approximately 7,000 feet of old East River Interceptor, taken out of service in the 1970s.

Respecting Our Past, Looking to the Future

Hoops recalled that fateful evening in April – which has been repeated, with additional record storm events hammering Northeast Wisconsin since then. The NEW Water mission and shared commitment to protecting water, and to the job, are what keep him motivated.

"Everyone here likes to be challenged. We are stewards for the community," he said. "We are super proud – people love their job, they get to learn every day. We're providing a service that is often forgotten. But we're here and happy to do it!"

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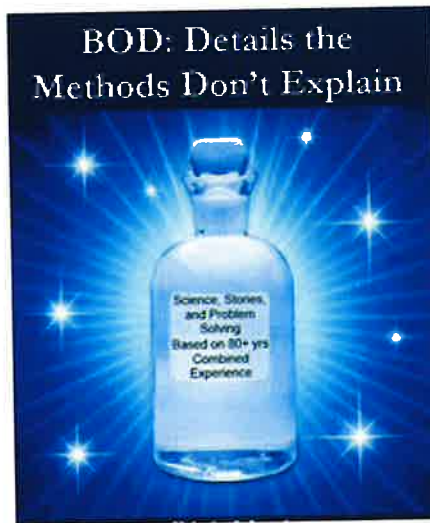
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"We help each other out. It brings you comfort that you can ask for help. Once you ask, it opens the door – they want to share their knowledge," Hoops said.

This is the kind of staff commitment that Nathan Qualls, PE., Executive Director, said is notable in the wastewater industry.

"As a publicly owned utility, we're proud to be part of Wisconsin's Wastewater community. Our staff are foundational for this community's public health, economic development, and enjoyment Wisconsin's waterways," Qualls said. "That's something we can all be proud of." 

NEW Water's employees together in 2026.



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