

New meaning to local presence

Innovation and close proximity help bring update to Charlevoix's wastewater treatment

On Fridays, P&N Project Engineer **Jon Cooper, PE**, pays a visit to our Grand Rapids office. Though his permanent address is in Rockford, his current home is in Charlevoix, a three-hour drive north of Prein&Newhof's headquarters.

When Charlevoix hired P&N to redesign its wastewater treatment plant, P&N's goal was to lower the cost of inspection and ensure quality construction. Moving an engineer to the project site made the most sense for Charlevoix," said P&N Project Manager Mark Prein, PE. "Jon's been a part of the community for the last year and a half; he's overseeing the project construction and is available to Charlevoix at a moment's notice,"

The plant was nearing 45 years old and needed a large number of core system upgrades and to meet new ammonia regulations from the Department of Environmental Quality. Charlevoix's climate complicates the treatment. The wastewater entering the treatment plant is often too cold in the winter for biological mechanisms to nitrify the wastewater. Also, the need for wastewater treatment processes drops by half during the winter season.

Innovative design by P&N's Nate Ver Heul, PE and Mark Prein, PE helped solve the cold water treatment, ammonia challenges, and more. In addition to upgrading many core plant components, design included an Integrated Fixed Film



Jon Cooper at the wastewater treatment plant in Charlevoix, October 2015

and Activated Sludge (IFAS) system, which maintains a bacteria density high enough to biodegrade the wastewater even in colder weather. IFAS can be expanded when needed and is responsive to changes in load amounts, important for Charlevoix's summer peak population. Ultraviolet (UV) disinfection, in which light destroys cells' ability to reproduce, was added to eliminate the use of hazardous chlorine gas in the disinfection process. Since biosolids (sludge) cannot be spread on frozen ground and the plant did not have enough storage to make it through winter, a large biosolids storage tank was built to provide flexibility in when the plant disposes of its biosolids.

The overall solution came with a \$10.8 million price tag. While Charlevoix has a big reputation as a summer tourist destination, it's a small community. P&N helped Charlevoix get a low interest loan from the State of Michigan,

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Congratulations to **Barbara Marczak, PE**, who is now chair of the Michigan Section of the American Water Works Association!

Boardwalk completes Reeds Lake walkway despite challenging soil



In October, the City of East Grand Rapids officially opened its new boardwalk on Reeds Lake Boulevard. The boardwalk spans the channel connecting Reeds Lake with Fisk Lake and is directly adjacent to another P&N-designed project, a new bridge carrying Reeds Lake Boulevard over the channel. The old bridge was a 108-inch-diameter corrugated steel structure from the 1930s, which had sunk several feet into underlying soil of "toothpaste" consistency. P&N's challenge was to provide a design that would not settle when placed on the existing soil. Both the new bridge and boardwalk are supported by 80-foot-long steel pilings.

The path around Reeds Lake is the most popular in East Grand Rapids, and this boardwalk is an integral part of East Grand Rapids' trail system. It was closed for much of the summer as there was no safe way to skirt the construction site, but is now open for all to enjoy—walking, strolling, running, biking.



SAW Update: MDEQ awards \$97 million in third-round SAW grants

MDEQ just announced its third round of SAW grant recipients, totaling \$97,000,000. SAW grants help communities develop asset management plans for their stormwater and wastewater systems. To see a list of third-round grantees or get more information on the SAW program, check out MDEQ's website or contact **Brian Vilmont, PE** or **Jim Hegarty, PE** at (616) 364-8491.



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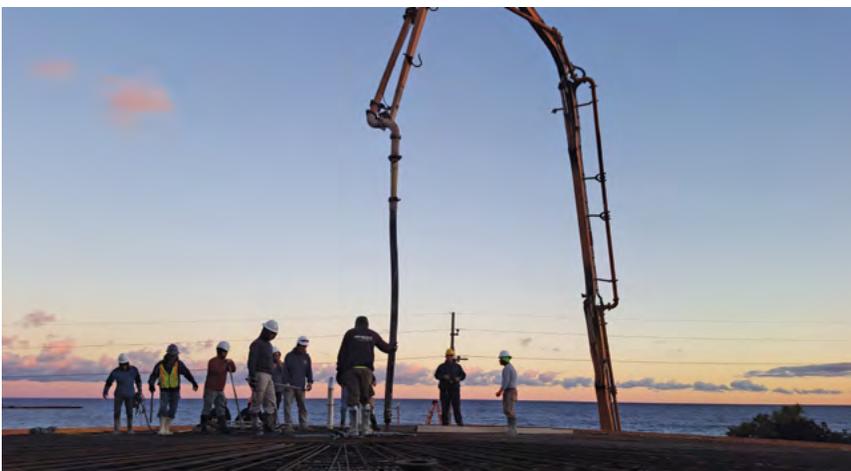


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secure a \$974,000 grant from the MDEQ with a 10% local match, and renegotiate an approach to address NPDES permit modifications specific to the plant. The project entailed a full assessment of the facility, and designing and overseeing the improvements. If you have a wastewater system challenge that you'd like to address, contact **Mark Prein, PE** at (616) 364-8491.

Prein&Newhof welcomes three professionals to its team

Prein&Newhof welcomes back **Nicole Dyer, PE** as an engineer in our Grand Rapids Office. Nicole has a bachelors degree in civil engineering from Calvin College and was a project engineer with P&N from 2000 to 2008.

P&N welcomes **Lana Stevens** as a Laboratory Sampling Technician. Lana has over ten years of experience working as a Lead Field Technical Coordinator, managing construction and inspection activities for landfills.

Prein&Newhof welcomes **Scott Voelker** to our Cadillac office. He provides both CAD and field work. Scott has 15 years of previous work experience in these service areas.

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