WRC
WATER RESOURCES COMMISSIONER
Jim Nash

Purely Resourceful

WRC Quarterly Newsletter

The Oakland County Water Resources Commissioner's Office is focused on upholding our responsibilities to the community throughout the COVID-19 pandemic, and we've placed special emphasis in our continuing effort to bring our communities together.

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WRC Works to Provide Uninterrupted Service During Pandemic

Our office has been hard at work during the coronavirus pandemic. We are responsible for maintaining critical water and sewer infrastructure in Oakland County and have continued to fulfill our obligations to the public throughout this unprecedented time. We have implemented important safety protocols to protect our front-line essential workers, office personnel and the general public.

"Working to provide safe, uninterrupted service has always been a top priority for us," said Jim Nash, Water Resources Commissioner. "But it is especially important during a pandemic."

Commissioner Nash and his staff have continued operations for construction projects, stormwater systems, drinking water systems, sewer systems, and wastewater systems during the pandemic. Staff members are hard at work responding to customer inquiries, administering water samples, monitoring systems, conducting inspections, maintaining equipment, protecting infrastructure and more.

Field units and office personnel have learned to work differently during the coronavirus pandemic and their hard work does not go unnoticed. We have implemented daily employee screenings, wearing personal protective equipment, practicing social distancing and rotating work schedules.

Where possible, employees are working remotely until they can be transitioned back to the office. We have found ways to move forward using video conferencing to continue daily responsibilities with coworkers, contractors, and community members.

"The COVID-19 pandemic has presented some new challenges but has not interrupted our operations because we are problem-solvers who find solutions," said Mike Daniels, Chief of WRC's Water Resource Recovery facilities. "We understand that we support a life-sustaining industry and water is vital fighting this virus."

While WRC locations currently remain closed to the public, Commissioner Nash wants the residents of Oakland County, customers, and trusted partners to know that they will continue to be served without interruption.

WRC Joins MSU Study of Coronavirus Presence in Community Wastewater

We are underway with participating in a Michigan State University project to monitor the presence of viruses in wastewater as a way to evaluate and predict the presence of COVID-19 in community populations. The MSU program monitors for the SARS-CoV-2 coronavirus—which causes COVID-19—in sewage from wastewater facilities.

Beginning in April, WRC began providing weekly wastewater samples to MSU from three locations in the sanitary collection system which discharges to the Clinton River Water Resource Recovery Facility in Pontiac for treatment. The Clinton River facility treats sanitary sewage for Auburn Hills, Independence Township, Lake Angelus, Lake Orion, Oakland Township, Orion Township, Oxford Township, the Village of Oxford, Pontiac, Rochester, Rochester Hills, Waterford Township and West Bloomfield Township.

"We very much appreciate the chance to partner with Michigan State University in its monitoring program," said Water Resources Commissioner Jim Nash. "This type of science-based assessment with real-time testing may someday help supply the data our area needs to make smart decisions about reopening Oakland County communities and campuses and about preparing for impending waves of COVID-19."

In addition to causing respiratory ailments, the SARS-CoV-2 is known to infect the gastrointestinal tract and is excreted in the feces of individuals who have mild or severe symptoms as well as those who are asymptomatic. By genetically examining untreated wastewater, scientists should be able to monitor the increasing or decreasing spread of COVID-19 in a community, the speed of the spread, second waves, the impact of social distancing and the effect of reopening cities. Viruses in the sewage system do not present any threat to the public because the sewage is contained within the system's pipes until it reaches the treatment facility.

The monitoring, which uses a form of polymerase chain reaction (PCR) testing to detect genetic materials associated with the virus, may help identify hotspots, provide early warnings and eventually help reflect the effectiveness of vaccination. The average time between an individual's acquiring the virus and the onset of COVID-19 symptoms is approximately two weeks. In understanding that timeline, public health officials could possibly predict impending disease spikes and better prepare for the demands on hospitals and resources that are likely to result. They could better contain potential infections from the scale of a single cruise ship to the expanse of a college campus or large city.

"We were invited to participate in this project because we've conducted similar DNA testing on stormwater systems for several years now to help us determine whether bacteria in stormwater is human or animal in origin," said Jim Wineka, WRC Environmental Engineer. "Our stormwater sampling has shown that animals are often the primary source of bacteria in an urban watershed. More sampling and research are needed for wastewater COVID-19 analysis before we would have the necessary confidence to make public health decisions on this information. We are glad to provide sampling data to continue this important research to predict a communities COVID-19 status in real time."

The Detroit Water and Sewerage Department also has furnished sewage samples for the study, which similarly has gathered samples from the main trunk line in the MSU sanitary sewer collection system and from various other parts of the campus to serve as pre-infection baseline samples. Further samples have been collected from communities across Michigan, as well as from New Orleans, Louisiana. The MSU researchers intend to collect new samples weekly once the campus reopens, and an advisory team will meet to discuss sampling results and next steps.

The project initially was designed to provide information on the potential infections and spread of the virus as students, faculty and staff return to the Michigan State campus. It is based on an earlier approach toward sewage surveillance for poliovirus that was adopted by the World Health Organization.

The research was initiated by Irene Xagoraraki, Ph.D., associate professor of environmental engineering at MSU, through a National Science Foundation (NSF) grant titled, "A Wastewater-Based-Epidemiology System for Early Detection of Viral Outbreaks in Detroit, Michigan."

Community, WRC are credited for completing dam project

Construction is to be completed this month on a $903,000 dam project that was designed to control the water level of Upper Straits Lake in West Bloomfield Township.

The Upper Straits Dam, located south of Green Lake Road and east of Colony Drive in West Bloomfield Township, replaces the existing dam built in the 1960s. The project includes the replacement of the existing lake-level control structure and the construction of 56 lineal feet of 50-foot-deep steel sheet piles with an operating weir width of 24 feet. The new sheet-pile weir dam is located about 12 feet upstream from the existing dam.

The project was financed by the sale of bonds that will be repaid by a special assessment over a 10-year period.

Led by WRC engineers Jason Say and Glenn Appel, P.E., the project began in fall 2018 during an informational meeting with residents when design alternatives and preliminary cost estimates were presented. Bids for the project were received in October 2019. The Oakland County Board of Commissioners approved the special assessment, project cost estimate, and full faith and credit backing of the County of Oakland for financing the project in January 2020. Construction began in February.

In addition to the obvious benefit of having a new dam—the continued control of Upper Straits Lake—the project also includes two important reasons to celebrate: It underscores WRC's commitment to improve the quality of all life by ensuring that the area's wetlands impacted by construction were restored, and it was met with the approval and support of area residents.

"The residents who live on the lake have been very supportive of this project, and we appreciate their willingness to meet with us and ask questions or voice concerns during the project," Say said.

The project schedule was extremely time sensitive, requiring the coordination of mailing notices and legal ads for Circuit Court hearings, informational meetings, the Day of Review, Board of Commissioners' approval and financing. Had one date been missed on the schedule, the entire project would have been delayed.

The project's consulting engineer was Spicer Group Inc. of Saginaw, and the contractor was Trojan Development Co. Inc. of Oxford.

Substantial completion of the project was completed on April 17 with final completion, including restoration this month.

WRC Engineer Creates Face Shields for Those on the COVID-19 Frontlines

When Ryan Woloszyk, P.E., a civil engineer with the Oakland County Water Resources Commissioner's Office, heard how his family and friends were working in the medical field without protective equipment, he knew he wanted to help.

So Woloszyk, along with his friends Dan Kennedy and Clifford Villerot, decided to put their engineering skills—and their 3D printer—to good use.

The men have created approximately 1,500 face shields to distribute at several hospitals in southeast Michigan. The face shields are used by employees at Beaumont Troy and Royal Oak, as well as at other local hospitals, who are treating COVID-19 patients.

"Once we heard about friends and family working in the medical field with a lack of protective equipment, the situation felt personal, and the need to take action escalated," said Woloszyk, who lives in Metamora and has worked for WRC for 2 ½ years. "For us it was a matter of what can we do to help the situation with the skills and knowledge we already possess."

After prototyping several designs, the three men finally found one that was durable, easily sanitized and comfortable. The process involved 3D printing the headband portions of the shields as well as creating a three-hole punch in the screens to have the ability to create a more streamlined production process and ultimately more shields.

WRC donated several rolls of plastic to be cut up to make the face protection portion of the shields. Unlike other face shields, Woloszyk's are higher quality, which allows them to be used more than once.

"Quality is our main differentiator," Woloszyk said. "When we were in the design process, we wanted a product that had a higher quality and re-usability. The durability of the plastic allows it to be placed in watered-down bleach. The plastic can also withstand heat so it can be placed in the microwave to be sanitized."

Though Woloszyk and his friends met their goal of creating 1,500 shields, their work is not quite done.

They were recently contacted by a group handling COVID-19 relief for the Navajo Nation. They are back in full production and plan on sending a total of 450 face shields to them. Their face shields also have been sent to retirement homes in New York, Florida and New Mexico.

"We are so proud to be doing our part to support our communities and our healthcare heroes," Woloszyk said.

System to Relieve Sewer Odors in Oakland-Macomb Interceptor Drain

Work on a $4.75 million project to relieve odors and corrosion associated with the Oakland-Macomb Interceptor Sewer is scheduled to be substantially completed by the end of July.

Water Resources Commissioner Jim Nash said the sewer system, which serves 830,000 residents in Macomb and Oakland counties, includes 21 miles of large-diameter pipes. He explained when solid waste material settles inside the pipes, it creates anaerobic conditions that, combined with turbulence in the pipes, can result in the release of hydrogen sulfide gas. Commonly known as sewer gas, it has generated odor complaints and has led to corrosion.

"The project is designed to substantially curb odors and features a biotrickling filter," said Nash. "It's a sustainable solution that degrades odorous compounds from sewers. Biotrickling filters—a much more sustainable technology than the more traditional odor/corrosion control facilities—use microbes, rather than chemicals, to remove odorous and corrosive compounds."

Nash explained that after an evaluation of various methods of mitigating these problems, it was determined that a biotrickling filter would provide the best and most cost-effective solution. Now being installed at the Northeast Sewage Pumping Station near Eight-Mile Road and Van Dyke Avenue in Detroit, the 40-foot-tall, 12-foot-diameter filter can treat more than 200-parts-per-millions of hydrogen sulfide gas.

"This innovative application of technology is a perfect example of the type of value-added engineering that our combined team continues to bring to the table. We continue to look for new ideas and new solutions—both large and small—that can improve quality of life and enhance the economic vitality of our communities. It's an environmentally friendly way to solve sewer odor issues," said Candice S. Miller, Macomb County Public Works Commissioner and a member of the board.

The system uses bacteria, which grow on an inert plastic medium, to oxidize the hydrogen sulfide. This biofilm removes 99 percent of the gas. The microbes convert the odorous compounds to oxygen and water—that are naturally occurring and not harmful to the environment. Odorous air is then pulled through ductwork to a blower that forces the air through the bacteria-covered media. Treated air is discharged at the top of the tower.

"While biotrickling filter technologies have been in use to protect wastewater infrastructure for approximately 20 years, most applications focus on end-of-pipe solutions at wastewater treatment plants," Nash explained. "In this case, the three-member board that oversees this intra-county project felt it was important to tackle the odor and corrosion problem head-on within the collection system to protect its critical assets. The biotrickling filter at the Northeast Sewage Pumping Station is a unique application, because it is one of a few known collection system applications in Michigan."

The biotrickling filter was manufactured by New Jersey-based BioAir Solutions, and construction is being carried out by Fenton-based CSM Mechanical. The project, which also includes upgrades to the heating, ventilation and air conditioning system, was initiated in August of last year and is set for completion by the end of July. The system will address odors from 60 million gallons of sewage per day.

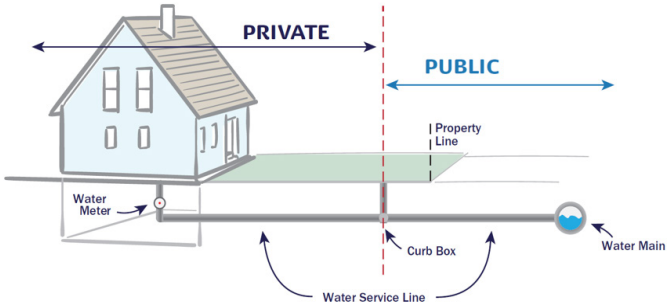
Water Service Line Replacement Program

The Michigan Lead and Copper Rule states that all lead service lines need to be replaced within the next 20 years. Through our Water Service Line Replacement Program, we're replacing lead and galvanized steel service lines in Pontiac, Michigan.

Service lines carry water from the water main under the street to resident's homes. If a resident has a lead service line, a full replacement is necessary.

A full replacement entails removing the entire service line on both private and public property—at the water system's expense. Our Water Service Line Replacement Program targets areas that fall within upcoming planned construction.

The WRC Water Maintenance Team will need to enter residents' homes in Pontiac to verify service line piping material and meter location. If the service line is not lead or galvanized steel, no further action is required. If the service line is lead or galvanized steel, our team will work with residents to schedule an appointment to have their entire service line replaced, from the water main to their water meter.



The WRC Water Maintenance Team and WRC-approved contractors are working to replace the existing service lines with copper service lines.

All property will be restored. The portion of the service line between the curb box and the resident's homes will continue to be their property.

WRC Suspends Late-Payment Water Program for Oakland County Residents

Our office is dedicated to building trust, protecting public health, improving the environment, and delivering quality services. It is very important to us to ensure all residents of Oakland County have access to drinking water.

When coronavirus cases started to pick up in Oakland County in the beginning of March, and prior to the issuance of Executive Order 2020-28, our office was proactive and worked to suspend all shut-off activity on March 13. Through our Late-Payment Water Program, we worked to ensure Oakland County residents had access to drinking water during a time in need: we reviewed available relevant information—including our billing system—to compile a list of accounts where the water was likely to be off. We hand-delivered letters with contact information to ensure residents could quickly have their water restored with accompanying flushing instructions and conducted site checks to restore service.

In the first 30 days, we restored water to 25 homes in Oakland County. To date, we have restored water to 43 homes in Oakland County, free of charge. Currently our team is monitoring 29 vacant homes and are attempting contact their owners to determine if further service is needed.

If you know a resident of a water system operated by us that needs their water service restored, please contact our Customer Service team Monday through Friday from 8:30 a.m. to 5 p.m. at 248-858-1110 or wrcbilling@oakgov.com.