2020
RESULTS

Detroit Water Quality Report

Water & Sewerage Department

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NOTICE: The 2020 Water Quality Report contains important information about your drinking water. Please have someone translate this document for you if you are unable to read the report.

AVISO: Este Informe de calidad del agua de 2020 contiene información importante sobre su agua potable. Haga que alguien le traduzca este documento si no puede leer el informe.

إشعار : يحتوي تقرير جودة المياه لعام 2020 على معلومات مهمة حول مياه الشرب. يرجى أن يقوم شخص ما بترجمة هذا المستند لك إذا كنت غير قادر على قرأة التقرير.

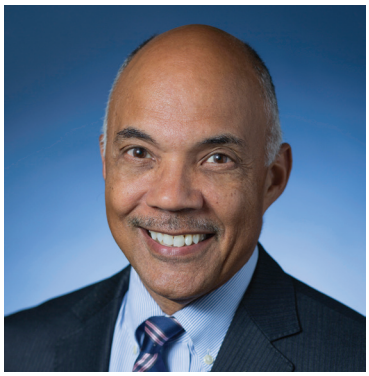
The Detroit Water & Sewerage Department does not discriminate on the basis of race, color, national origin, sex, age or disability in any of our services, programs or activities.

24/7 HOW TO REPORT AN EMERGENCY

To report emergencies, such as water main breaks, flooded streets, missing manhole covers, leaking or broken fire hydrants and water in basement, call DWSD at **313-267-8000**. Mobile users may download the **Improve Detroit app (SeeClickFix)** for Apple and Android devices to take a photo and report an issue, or report it online at **detroitmi.gov/DWSD**.

PUBLIC PARTICIPATION

The Board of Water Commissioners meets on the first Wednesday of each month at 1 p.m. for committees and the third Wednesday of each month at 2 p.m. for the regular meeting at the Water Board Building, located at 735 Randolph Street, unless otherwise noticed. All meetings are open to the public, which at the time of printing this report continue to be virtual due to the COVID-19 Pandemic health orders and guidelines. For more information, please contact the DWSD board secretary at **313-224-4704** or visit **detroitmi.gov/DWSD** for meeting dates, times, locations and agendas.



Gary A Brown, Director
Detroit Water and Sewerage Department

Dear Valued Customers,

Detroit has some of the cleanest, best drinking water in the nation. As we continue to replace lead service lines for our customers, the Detroit Water and Sewerage Department (DWSD) is making improvements and adding value to customers' homes, as well as addressing the aging infrastructure throughout our city.

In this Water Quality Report, you will see the required lead in drinking water testing results were 9 parts per billion (ppb) measured in the 51 homes at the 90th percentile, well below the action level of 15 ppb set by the Environmental Protection Agency (EPA) and the Michigan Department of Environment, Great Lakes and Energy (EGLE). The action level will decrease to 12 ppb in 2025 under Michigan's revised Lead and Copper Rule. Per the 2018 revised rule, all water utilities are to test a sampling of homes and share the results annually.

If you have a lead service line and/or lead-based plumbing components, there are everyday steps you can take to help reduce the lead in your home. Read the tips on page 11.

The DWSD Lead Service Line Replacement Program, launched in 2018 as part of our Asset Management Program, has 100 percent compliance in homeowners/occupants, allowing our crews to replace the private portion when we are already on the street replacing the water main. Read about this program on page 10.

During the COVID-19 Pandemic, nearly 1,300 households had water restored after previously being interrupted for nonpayment and we have utilized nearly $20 million of federal funding through the CARES Act to provide low-income Detroit households with water bill assistance – to help pay down their balances – and fix minor and major private plumbing issues. And, we are committed to not interrupt water service at residential households through 2022 while we work with our local, state and federal partners on a long-term affordability solution.

Together, let's be the difference.

A MESSAGE TO OUR CUSTOMERS

Drinking water quality is important to our community and the region. The Detroit Water and Sewerage Department (DWSD) and the Great Lakes Water Authority (GLWA) are committed to meeting state and federal water quality standards including the Lead and Copper Rule. This 2020 Water Quality Report highlights the performance of GLWA and DWSD water professionals in delivering some of the nation's best drinking water.

Together, we are committed to protecting public health and maintaining open communication with the community about our drinking water. To stay informed, we encourage you to register for water alerts via email at detroitmi.gov/DWSD. Our water quality standards are mandated by the Environmental Protection Agency (EPA) and the Michigan Department of Environment, Great Lakes, and Energy (EGLE).

Correction to the 2019 Detroit Water Quality Report: Required language was omitted from the 2019 Detroit Water Quality Report on page 11, which is as follows. ***"Infants and children who drink water containing lead could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure."***

How We Provide Water Services to You

The Great Lakes Water Authority (GLWA) treats drinking water and transports it to the City of Detroit's distribution system through transmission lines. The Detroit Water and Sewerage Department (DWSD) delivers the treated water to the community through more than 2,700 miles of water mains within the city to the service line of your home or business.

The system uses source water drawn from three intakes. Two source water intakes are located in the Detroit River: one to the north, near the inlet of Lake St. Clair, and one to the south, near Lake Erie. The third intake is located in Lake Huron.

Four of the plants treat source water drawn from the Detroit River intakes. The fifth water treatment plant, located in St. Clair County, uses source water drawn from Lake Huron. Detroit customers are provided service from four plants that treat source water drawn from the Detroit River.

Health Concerns

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno- compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, and people with HIV/AIDS or other immune system disorders. Some elderly and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline at 1-800-426-4791.

GLWA voluntarily monitored our source water for the presence of Cryptosporidium and Giardia. In 2020, the presence of Cryptosporidium and Giardia were detected in the source (untreated) water at the Belle Isle Detroit River Intake serving Water Works Park, Springwells and the Northeast water treatment plants. Cryptosporidium was detected once in March and Giardia once in April. All other samples monitored in 2020 were absent the presence of Cryptosporidium and Giardia. Current test methods do not enable us to determine if these organisms are dead or if they can cause disease. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immuno-compromised people have more difficulty and are at greater risk of developing severe, life-threatening illness. Immuno-compromised individuals are encouraged to consult their doctor regarding appropriate precautions to take to prevent infection. Cryptosporidium must be ingested for it to cause disease and may be passed through means other than drinking water. Surface water treatment systems must provide treatment so that 99.9% Giardia is removed or inactivated.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. DWSD is responsible for providing high quality drinking water but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you have a service line that is lead, galvanized previously connected to lead, or unknown but likely to be lead, it is recommended that you run your water for at least 5 minutes to flush water from both your home plumbing and the lead service line. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline at 1-800-426-4791 or at http://water.epa.gov/drink/info/lead.

Customer Affordability Programs

Water Residential Assistance Program (WRAP)

The Water Residential Assistance Program (WRAP) is a two-year program that provides funding to eligible, low-income homeowners and renters to assist with water bills, water conservation, and self-sufficiency initiatives through the Wayne Metropolitan Community Action Agency. WRAP offers many benefits including up to $1,000 annually in bill assistance and minor plumbing repairs averaging $1,500 for eligible households. You must be at or below 200% of the federal poverty level ($52,400 maximum annual income for a family of four). Since WRAP was launched in 2016, more than 20,000 households have been assisted in Detroit.

10/30/50 Plan

The 10/30/50 Plan is developed for Detroit water customers who experience difficulty in paying their past-due bills. There are no income restrictions to qualify. Customers must make a down payment of either 10%, 30% or 50% of the past due balance, dependent on the account status. The balance of the past due amount is equally spread over 6-24 months, which the customer pays in addition to the normal monthly bill. All payments must be made in full and on time to stay enrolled.

CARES Act Funding

The Coronavirus Aid, Relief, and Economic Security Act (CARES Act), provided more than $14 million in direct bill assistance to more than 40,000 qualifying DWSD residential accounts in October 2020. The relief went toward accounts that accrued past due balances during the pandemic.

DWSD assisted in Wayne Metro Community Action Agency's Emergency Plumbing Repair Program, which resulted in more than $6 million toward lead service line replacement, sewer service replacement and other major plumbing repairs for 600 Detroit households.

To find additional affordability programs through DWSD's community partners, visit www.detroitmi.gov/water.

DWSD offers safe, convenient ways to pay

We're working hard to deliver clean water to nearly 700,000 residents just like you. It's what we do in the community, every day! Here are easy ways to access your account and pay your water bill, including using convenient, self-service options.

Due to the COVID-19 Pandemic, all three DWSD Customer Care Centers remain closed to protect the safety of our employees and customers. All transactions are now contactless. Customers with water or sewer bill inquires can email Customer Care at **mydwsd@detroitmi.gov** or call **313-267-8000**.

Access your account and pay online at **www.detroitmi.gov/PayMyWaterBill** and set up auto-pay, enroll in a payment arrangement, if needed, and track your real-time usage.

Visit one of the more than 60 no-fee kiosks in and around Detroit and use cash, check or debit/credit card to pay your bill. Find your nearby kiosk at **www.detroitmi.gov/DWSDkiosk**.

Call our automated pay-by-phone system at **313-267-8000** and ask for current balance and due date.

Send your payment by mail with check or money order payable to the "Board of Water Commissioners."

Mail to:
Board of Water Commissioners
Detroit Water and Sewerage Department
PO Box 554899
Detroit, MI 48255-4899

WORKING HARD FOR YOU

Your water and sewer bill payments make it possible for us to keep the work going. Your continued payments make all the difference. Thanks to you, we can keep making critical improvements to upgrade our 100-year-old systems for all of us.

All across Detroit, DWSD employees — most of whom are Detroit residents — are working hard for you and your neighbors, even during the COVID-19 Pandemic.

In 2018, DWSD began replacing lead service lines with copper, with owner/occupant permission, while on the same street replacing the water main.

Michigan's Revised Lead & Copper Rule and Detroit's Test Results

Under Michigan's revised Lead and Copper Rule, DWSD lead and drinking water testing results have been 10 parts per billion (ppb) in 2019 and 9 ppb in 2020, which are both under the state action level for lead remediation.

Detroit has an estimated 77,197 lead service lines based on a total of 311,000 water service lines. There are 28,922 service lines with unknown pipe material. Since 2018, DWSD has replaced 1,155 lead service lines while on the same street replacing the water main.

All communities with lead service lines must sample tap water in homes with lead service lines as required by EGLE and the EPA. In the summer of 2020, DWSD collected water samples from 51 homes with lead service lines. The 90th percentile of samples was 9 ppb, which is under the action level of 15 ppb. DWSD's last report of 10 ppb in 2019 was with the same sampling methodology that was required by EGLE beginning in 2019. A water supply exceeds the action level if more than 10 percent of all samples is over the action level.

"We want to reassure Detroiters, especially during the COVID-19 Pandemic, the water supplied by DWSD is safe for drinking," said Gary Brown, DWSD director. "The water leaving Detroit's water treatment plants, operated by the Great Lakes Water Authority, does not contain lead. The primary sources of lead in water are lead service lines, lead solder, and/or fixtures containing lead in the home. Even before the State of Michigan enacted the most stringent Lead and Copper Rule in the nation, DWSD began replacing lead service lines at DWSD's cost with owner/occupant permission during water main replacement projects and providing pitcher filters to those residents and businesses as a precautionary measure. We have replaced more than 1,000 lead service lines since 2018, have 100% resident response rate for replacement when on the street replacing the water main, and our program was recently cited as a model for other communities in the Journal of the American Water Works Association."

The Chief Public Health Officer for the City of Detroit Denise Fair said, "I am pleased with the results of the lead and copper testing, which have followed stricter guidelines from the state. We know that the presence of lead in decaying paint and dust is the number one source of lead poisoning in children living in homes that were built before 1978. Therefore, we recommend that if you have any concerns regarding lead exposure inside your home – to request a lead test from your child's primary health care provider or contact the Detroit Health Department."

The new Michigan Lead and Copper Rule Testing Method

The revised Michigan Lead and Copper Rule enacted in June 2018 – the most stringent in the nation – changed the way lead samples are collected at Detroit homes and all Michigan communities. In the past, DWSD collected only the first liter of water out of the tap. Under the new rule – used in testing in the past two years – both the first and fifth liter are collected. The first liter represents water from household plumbing and fixtures, and the fifth liter is more likely to represent water from the lead service line. The service line is the pipe which brings water from the water main in the street to inside the home or business. In Detroit, most service lines are either lead, copper or galvanized steel. Lead service lines are under two inches in diameter and are mostly at single family or duplex homes and some small businesses. The new sampling technique more accurately represents the range of lead in the drinking water in Detroit homes.

Lead in Drinking Water

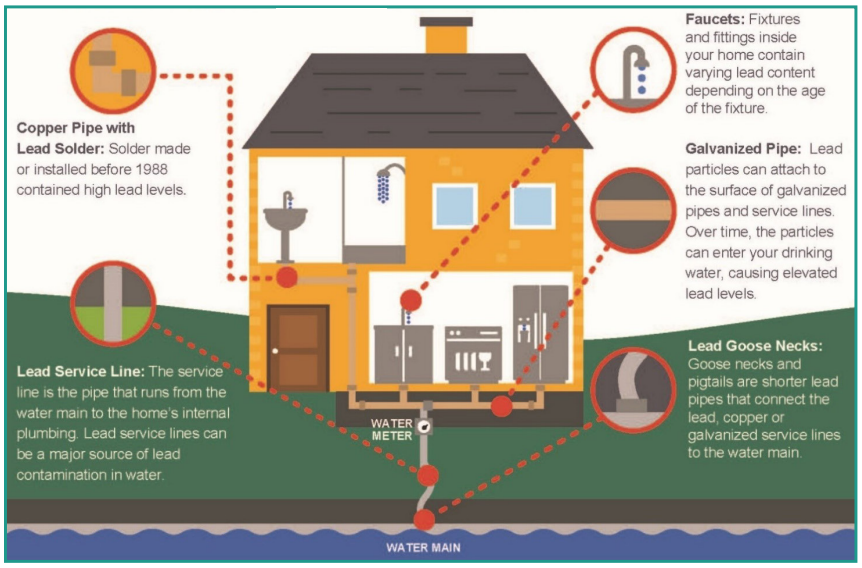
The water leaving Detroit water treatment plants, operated by GLWA, does not contain lead, but lead can be released into drinking water from lead service lines and home plumbing as the water moves from the water mains to your tap. Beginning in 1945, Detroit stopped allowing the installation of lead piping for water service lines. Homes before 1945 are most likely to have a lead pipe that connects the home to the water main, known as a lead service line. The lead in lead service lines, household plumbing and fixtures can dissolve or break off into water and end up in tap water. The water provided to DWSD customers contains a corrosion inhibitor to reduce leaching from lead service lines and other lead components, but lead can still be present in water at the tap.

Health Effects of Lead

Lead can cause serious health and development problems. The greatest risk of lead exposure is to infants, young children, and pregnant women. Older homes can have many sources of lead exposure including paint, dust and soil. If you have questions about other sources of lead exposure, please contact the Detroit Health Department at 313-876-0133.

Sources of Lead

Drinking water is only one source of lead exposure. Some of the most significant sources, especially for children six years old and under, include lead-based paint and lead contaminated dust and soil. Because lead can be carried on hands, clothing, and shoes, sources of exposure to lead can include the workplace and certain hobbies. Wash your children's hands and toys often as they can come in contact with dirt and dust containing lead. In addition, lead can be found in certain types of pottery, pewter, food and cosmetics. If you have questions about other sources of lead exposure, please contact the health department.



Most plumbing products such as service lines, pipes, fixtures, and plumbing materials manufactured before 2014 contain up to 8% lead. The infographic (see graphic) demonstrates where sources of lead in drinking water could be in your home. Older homes may have more lead unless the service line and/or plumbing has been replaced. Lead-based solder and lead-based fittings and fixtures are still available in stores to use for non-drinking water applications. Be careful to select the appropriate products for repairing or replacing drinking water plumbing in your home. Even materials currently marked "lead free" have up to 0.25% lead by weight.

Galvanized plumbing can be a potential source of lead. Galvanized plumbing can absorb lead from upstream sources like a lead service line. Even after the lead service line has been removed, galvanized plumbing can continue to release lead into drinking water over time. Homes that are served by a lead service line should consider replacing galvanized plumbing inside the home.

Lead Service Line Replacement Program

In 2018, prior to the revised Michigan Lead and Copper Rule, DWSD began replacing lead service lines as part of its asset management program when on the same street replacing the water main. Extensive outreach, including neighborhood meetings and information packets, to the owner/occupant is done prior to construction. The City owns the portion of the service line from the water main to the stop box (turn-on/off valve typically in the front yard). The property owner is responsible for the service line from the stop box to inside the house (see page 5). Therefore, DWSD gets owner/occupant permission to replace lead service lines when its crews encounter them after visually verifying service line material at each house by excavating around the stop box during scheduled water main replacement. With owner/occupant permission, the lead service line is replaced with copper at DWSD's expense through its Capital Improvement Program.

A white paper on DWSD's Lead Service Line Replacement Program was in the October 2020 issue of the Journal of the American Water Works Association, titled "Detroit's Robust Full Lead Service Line Replacement Program," as a best practice for other water utilities in America.

DWSD Deputy Director and Chief Engineer Palencia Mobley, P.E., said, "The most effective and cost efficient method for replacing lead service lines is when we already have crews on the street replacing a water main. Our program uses mapping technology to track service line material and indicate the date of replacement if in fact we confirmed the service line is lead through the exploratory digging. Due to DWSD's extensive community outreach on this program, done in advance of the project, we have a 100% resident response rate when we offer to replace their portion of a lead service line while replacing the water main on their block."

Source: EPA
Additional information regarding lead, including *"Frequently Asked Questions about Lead in Drinking Water,"* can be found on the City of Detroit's website at www.detroitmi.gov/leadsafe, or visit EGLE's website at www.michigan.gov/MILeadSafe.

Steps You Can Take to Reduce Your Exposure to Lead in Your Water

Run your water to flush out lead. The more time water has been sitting in your home's pipes, the more lead it may contain. Therefore, if your water has not been used for several hours, run the water before using it for drinking or cooking. This flushes lead-containing water from the pipes. If you do not have a lead service line, run the water for 30 seconds to two minutes, or until it becomes cold or reaches a steady temperature. If you do have a lead service line, run the water for at least five minutes to flush water from both the interior building plumbing and the lead service line.

Consider using a filter to reduce lead in drinking water. The Detroit Health Department recommends that any household with a child or pregnant woman use a certified lead filter to reduce lead from their drinking water. Look for filters that are tested and certified to NSF/ANSI Standard 53 for lead reduction. Some filter options include a pour-through pitcher or faucet-mount systems. If the label does not specifically mention lead reduction, check the Performance Data Sheet included with the device. Be sure to maintain and replace the filter device in accordance with the manufacturer's instructions to protect water quality.

Clean your aerators. The aerator is the screen at the end of your faucet. It catches debris. This debris could include particulate lead. The aerator should be removed monthly to rinse out any debris.

Identify older plumbing fixtures that likely contain lead. Older faucets, fittings, and valves sold before 2014 may contain higher levels of lead, even if marked "lead-free." Faucets, fittings, and valves sold after January 2014 are required to meet a more restrictive "lead-free" definition but may still contain up to 0.25 percent lead. When purchasing new plumbing materials, it is important to look for materials that are certified to meet NSF standard 61.

Use only cold water for drinking and cooking. Do not cook with or drink water from the hot water tap; lead dissolves more easily into hot water.

Use only filtered water or bottled water for preparing baby formula.

Do not boil water to remove lead. Boiling water will not reduce lead levels. In the event DWSD issues a boil water advisory due to low water pressure (such as caused by a large water main break), water users in the designated advisory area will be advised to boil water before using for cooking, drinking and brushing your teeth. Residents with lead service lines should only boil filtered water — not water directly from the tap.

Get your child tested. Contact the Detroit Health Department at 313-876-0133 or your healthcare provider to find out how you can get your child tested for lead if you are concerned about exposure.

Verify your lead service line. If you know you have a lead service line let us know by following the online instructions and submitting the form at www.detroitmi.gov/dwsd. This information helps DWSD plan for future lead service line replacements.

Test your water for lead. To request for your water to be tested, please visit www.detroitmi.gov/leadsafe and search "lead and copper sample request form." If you do not have Internet access, please call the Detroit Lead Safe Resource Line at 313-964-9300.

Additional information regarding lead, including "Frequently Asked Questions about Lead in Drinking Water," can be found on the City of Detroit's website at www.detroitmi.gov/leadsafe or visit EGLE's website at www.michigan.gov/MILeadSafe.

Infants and children who drink water containing lead could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.

Improving Stormwater Management

DWSD is now managing 61 million gallons of stormwater annually through 16 GSI projects.

Community Input Led to Beautiful Medians that Manage Stormwater on Oakman Boulevard

Back in 2017, DWSD began hosting meetings with the Aviation Sub, sharing design options for the Green Stormwater Infrastructure (GSI) in the medians along Oakman Boulevard between Joy Road and Tireman Avenue. Residents in the community provided feedback on trees, plantings, and other features during these meetings. They also considered passive versus active, park like settings. The final design included their input of a passive setting. A final pre-construction meeting was held in 2020 before the COVID-19 Pandemic at Rippling Hope to share the project plans and timeline with the community, and it included the primary construction contractor, Detroit-based and minority-owned Blaze Contracting.

During the official project announcement in 2020, Mayor Mike Duggan praised the DWSD Oakman Boulevard project as an example of, "Detroiters rebuilding Detroit," with the announcement of Detroit-based Blaze Contracting as the primary contractor for the project.

Oakman Boulevard GSI Overview

The $8.6 million Oakman Boulevard construction project is the city's largest investment to date in GSI.

The most common method to improve stormwater management is through GSI practices. It replicates natural systems to reduce runoff volume, filter pollutants, and cut down on flooding by slowing the movement of water into the combined sewer system and channeling it into the ground.

During construction, DWSD's contractor converted 10 medians into bioretention gardens, including the median shown above on Oakman Boulevard south of Mackenzie. Those gardens will manage an estimated 37 million gallons of stormwater annually, and reduce the flow into our combined sewer system.

"Even after the delayed start due to COVID-19 stay-at-home orders, Blaze and its subcontractors were able to complete major construction by the end of 2020. And, they did so with 48 Detroit residents working on the project. This historic Detroit neighborhood will see the beauty these gardens bring while benefiting mostly from reduced street flooding," said Palencia Mobley, P.E., DWSD Deputy Director & Chief Engineer.

Visit www.detroitstormwater.org to see both the public and private GSI projects in Detroit.

DWSD's Goals

DWSD's goal is to improve service delivery and quality of life by:

- Reducing water main breaks;
- Reducing street flooding and sewer system failures;
- Reducing future investment in new CSO facilities (wet weather treatment);
- Increasing acres managed by green stormwater infrastructure;
- Coordinating with other public and private agencies to maximize dollars invested and minimize disruption from construction activity;
- Increasing job opportunities for Detroiters; and
- Upgrading and maintaining facilities, equipment and systems for effective operations.

Upgrading Detroit's Water and Sewer Systems

DWSD is in its second year of its $500 million Capital Improvement Program (CIP) to begin to upgrade the city's aging water infrastructure by replacing water mains, lead service lines and fire hydrants, relining sewer pipes, and installing green stormwater infrastructure. In 2018, DWSD began assessing water and sewer systems by neighborhood using condition assessments, rather than by the number of water main breaks and basement backups to avoid taking a scattered approach.

Since 2019 through the CIP, DWSD has replaced 66 miles of water main, upgraded 50 miles of sewer piping, replace more than 1,155 lead service lines and installed 11 bioretention gardens.

Despite the pause in construction due to Governor Gretchen Whitmer's COVID-19 Stay Home, Stay Safe Order, DWSD CIP projects have stayed on schedule. The Oakman Boulevard Stormwater and Water System Upgrade Project was mostly completed in November 2020. This $8.6 million project transformed 10 medians into bioretention to manage 37 million gallons of stormwater annually (see Stormwater article on page 12).

The $44.3 million invested into Cornerstone Village and North Rosedale Park, the first two neighborhoods under the new approach, is on track to finish in December 2022.

Since 2019, DWSD has assessed the water and sewer systems in more than 20 neighborhoods, resulting in water and sewer upgrades in neighborhoods such as the North End. In 2021, DWSD will complete an additional 225 miles of water main condition assessment work across 39 neighborhoods to test hydrant flow, leak detection and more to identify neighborhoods in need of water main upgrades.

These photographs were taken prior to the COVID-19 outbreak.

Substances Found in Source Water

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells.

As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive materials and can pick up substances resulting from the presence of animal or human activity.

Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife;
- Inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming;
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff and residential uses;
- Organic chemical contaminants, including synthetic and volatile organics, which are by-products of industrial processes and petroleum production, which also can come from gas stations, urban stormwater runoff and septic systems; and
- Radioactive contaminants, which can be naturally occurring or the result of oil and gas production and mining activities.

In order to ensure tap water is safe to drink, the EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for human health.

Drinking water, including bottled water, may reasonably be expected to contain small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline at **800-426-4791**.

Source Water Protection

Your source water comes from the Detroit River, situated within the Lake St. Clair, Clinton River, Detroit River, Rouge River, Ecorse River, watersheds in the U.S. and parts of the Thames River, Little River, Turkey Creek and Sydenham watersheds in Canada. The Michigan Department of Environmental Quality in partnership with the U.S. Geological Survey, the Detroit Water and Sewerage Department, and the Michigan Public Health Institute performed a source water assessment in 2004 to determine the susceptibility of GLWA's Detroit River source water for potential contamination. The susceptibility rating is based on a seven-tiered scale and ranges from very low to very high determined primarily using geologic sensitivity, water chemistry, and potential contaminant sources. The report described GLWA's Detroit river intakes as highly susceptible to potential contamination. However, all four GLWA water treatment plants that service the city of Detroit and draw water from the Detroit River have historically provided satisfactory treatment and meet drinking water standards.

GLWA has initiated source-water protection activities that include chemical containment, spill response, and a mercury reduction program. GLWA participates in the National Pollutant Discharge Elimination System permit discharge program and has an emergency response management plan. In 2016, the Michigan Department of Environmental, Great Lakes and Energy approved the GLWA's Surface Water Intake Protection plan for the Belle Isle intake and Fighting island intakes. The plan has seven elements that include: roles and duties of government units and water supply agencies, delineation of a source water protection areas, identification of potential sources of contamination, management approaches for protection, contingency plans, siting of new water sources, public participation, and public education activities. GLWA is in the process of updating the plans which should be completed by September 2021. If you would like to know more information about the Source Water Assessment report please, contact GLWA at **313-926-8102**.

Key to the Detected Contaminants

>	**Greater Than**	µmhos	**Micromhos** Measure of electrical conductance of water.
N/A	**Not Applicable**	NTU	**Nephelometric Turbidity Units** Measure of cloudiness of water.
ND	**Not Detected**	pCi/L	**Picocuries Per Liter** Measure of radioactivity.
ppm	**Parts Per Million** (one in a million) The ppm is equivalent to milligrams per liter. A milligram = 1/1000 gram.	ppb	**Parts Per Billion** (one in a billion) The ppb is equivalent to micrograms per liter. A microgram = 1/1000 gram.
AL	**Action Level** The concentration of a contaminant, which, if exceeded, triggers treatment or other requirements which a water system must follow.	°C	**Celsius** A scale of temperature in which water freezes at 0° and boils at 100° under standard conditions.
HAA5	**Haloacetic Acids** HAA5 is the total of bromoacetic, chloroacetic, dibromoacetic, dichloroacetic, and trichloroacetic acids. Compliance is based on the total.	RAA	**Running Annual Average** The average of all analytical results for all samples during the previous four quarters.
LRAA	**Locational Running Annual Average** The average of analytical results for samples at a particular monitoring location during the previous four quarters.	TT	**Treatment Technique** A required process intended to reduce the level of a contaminant in drinking water.
MCL	**Maximum Contaminant Level** The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.	MRDL	**Maximum Residual Disinfectant Level** The highest level of disinfectant allowed in drinking water. There is convincing evidence that additional of a disinfectant is necessary for control of microbial contaminants.
SMCL	**Secondary Maximum Contaminant Level** An MCL which involves a biological, chemical or physical characteristic of water that may adversely affect the taste, odor, color or appearance (aesthetics), which may therby affect public confidence or acceptance of the drinking water.	MRDLG	**Maximum Residual Disinfectant Level Goal** The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLG's do not reflect the benefits of the use of disinfectants to control microbial contaminants.
MCLG	**Maximum Contaminant Level Goal** The level of contaminant in drinking water below which there is no known or expected risk to health.	Level 1	**Level 1 Assessment** A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in the water system.
TTHM	**Total Trihalomethanes** Total Trihalomethanes is the sum of chloroform, dibromochloromethane, bromodichloromethane and bromoform. Compliance is based on the total.	Level 2	**Level 2 Assessment** A Level 2 assessment is a very detailed study of the water system to identify potential problems and determine (if necessary) why an E. coli MCL violation occured and/or why total coliform bacteria have been found in our water system on multiple occasions.

Regulated Contaminants

Inorganic Chemicals
Monitoring at Plant Finished Tap

Regulated Contaminant	Test Date	Unit	Health Goal MCLG	Allowed Level MCL	Highest Level Detected	Range of Detection	Violation	Major Sources in Drinking Water
Fluoride	3/10/20	ppm	4	4	**0.80**	**0.63-0.80**	no	Erosion of natural deposit; Water additive, which promotes strong teeth; Discharge from fertilizer and aluminum factories
Nitrate	3/10/20	ppm	10	10	**0.61**	**0.36-0.61**	no	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Barium	5/16/17	ppm	2	2	**0.01**	**0.01-0.01**	no	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits

Disinfection Residual
Monitoring in the Detroit Distribution System

Regulated Contaminant	Test Date	Unit	Health Goal MRDLG	Allowed Level MRDL	Highest Level RAA	Range of Quarterly Results	Violation	Major Sources in Drinking Water
Total Chlorine Residual	2020	ppm	4	4	**0.77**	**0.49-0.87**	no	Water additive used to control microbes

Disinfection By-Products
Stage 2 Disinfection By-Products Monitoring in the Distribution System

Regulated Contaminant	Test Date	Unit	Health Goal MCLG	Allowed Level MCL	Highest Level LRAA	Range of Quarterly Results	Violation	Major Sources in Drinking Water
(TTHM) Total Trihalomethanes	2020	ppb	n/a	80	**29.0**	**12.0-39.0**	no	By-product of drinking water chlorination
(HAA5) Haloacetic Acids	2020	ppb	n/a	60	**19.0**	**7.4-29.0**	no	By-product of drinking water chlorination

Disinfectant By-Product
Monitoring at the Waterworks Park Plant Finished Tap

Regulated Contaminant	Test Date	Unit	Health Goal MCLG	Allowed Level MCL	Highest Level RAA	Range of Quarterly Results	Violation	Major Sources in Drinking Water
Bromate	2020	ppb	0	10	**ND**	**ND-ND**	no	By-product of drinking water ozonation

Turbidity
Monitored Every 4 Hrs at the Plant Finished Water Tap

Highest Single Measurement Cannot Exceed 1 NTU	Lowest Monthly % of Samples Meeting Turbidity Limit of 0.3 NTU (minimum 95%)	Violation	Major Sources in Drinking Water
0.21 NTU	**100%**	**no**	Soil runoff

Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea and associated headaches.

Special Monitoring

Contaminant	Test Date	Unit	MCLG	MCL	Highest Level Detected	Source of Contaminant
Sodium	3/10/20	ppm	n/a	n/a	**6.81**	Erosion of natural deposits

Lead and Copper Monitoring at the Consumer's Tap in 2020

Data reported in this table is from 2019. For more information on the testing of Lead and Copper, please refer to page 8.

Regulated Contaminant	Test Date	Unit	Health Goal MCLG	Action Level AL	90th Percentile Value*	Number of Sites Over AL	Range of Individual Samples	Violation	Major Sources in Drinking Water
Lead	2020	ppb	0	15	**9**	2	0-32	no	Lead services lines, corrosion of household plumbing including fittings and fixtures; erosion of natural deposits
Copper	2020	ppm	1.3	1.3	**0.1**	0	0.0-0.2	no	Corrosion of household plumbing system; Erosion of natural deposits; leaching from wood preservatives

* The 90th percentile value means 90 percent of the homes tested have lead and copper levels below the given 90th percentile value. If the 90th percentile value is above the AL additional requirements must be met.

Regulated Contaminant	Treatment Technique	Typical Source of Contaminant
Total Organic Carbon ppm	The Total Organic Carbon (TOC) removal ratio is calculated as the ratio between the actual TOC removal and the TOC removal requirements. The TOC is measured each quarter and because the level is low, there is no requirement for TOC removal.	Erosion of natural deposits

Radionuclides
Monitored at the Plant Finished Tap in 2014

Regulated Contaminant	Test Date	Unit	MCLG	MCL	Level Detected	Violation	Major Sources in Drinking Water
Combined Radium Radium 226 and 228	5/13/14	pCi/L	0	5	**0.65 ± 0.54**	no	Erosion of natural deposits

GLWA conducts tests throughout the year. Tests that show the presence of a substance or require special monitoring are presented in these tables. The State allows us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. All of the data is representative of the water quality, but some are more than one year old.

Unregulated Contaminants

Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted.

Before EPA regulates a contaminant, it considers adverse health effects, the occurrence of the contaminant in drinking water, and whether the regulation would reduce health risk.

2015 Unregulated Contaminants Monitored at the Plant Finished Taps

Unregulated Contaminant	Test Date	Unit	Average Level Detected	Range of Detection	Health Advisory	MCLG	MCL	Source of Contaminant
Strontium	2015	ppb	**106**	**98.7-124**	**4000**	**n/a**	**n/a**	Erosion of natural deposits
Total Chromium	2015	ppb	**0.28**	**0.21-0.42**	**n/a**	**100**	**100**	Discharge from steel and pulp mills; Erosion of natural deposits
Chromium +6	2015	ppb	**0.13**	**0.082-0.24**	**n/a**	**n/a**	**n/a**	Discharge from steel and pulp mills; Erosion of natural deposits
Vanadium	2015	ppb	**0.21**	**ND-0.66**	**n/a**	**n/a**	**n/a**	Erosion of natural deposits

2015 Unregulated Contaminants Monitored in the Distribution System

Unregulated Contaminant	Test Date	Unit	Average Level Detected	Range of Detection	Health Advisory	MCLG	MCL	Source of Contaminant
Strontium	2015	ppb	**109**	**102-124**	**4000**	**n/a**	**n/a**	Erosion of natural deposits
Total Chromium	2015	ppb	**0.21**	**ND-0.45**	**n/a**	**100**	**100**	Discharge from steel and pulp mills; Erosion of natural deposits
Chromium +6	2015	ppb	**0.11**	**0.086-0.18**	**n/a**	**n/a**	**n/a**	Discharge from steel and pulp mills; Erosion of natural deposits
Vanadium	2015	ppb	**0.20**	**ND-0.53**	**n/a**	**n/a**	**n/a**	Erosion of natural deposits

2019 Unregulated Contaminants Monitored at the Plant Finished Taps

Unregulated Contaminant	Test Date	Unit	Highest Level Detected	SMCL	Range of Detection	Noticeable Effects Above the SMCL	Source of Contaminant
Manganese	2019	ppb	**0.48**	**50**	**0.0-0.48**	black to brown color; black staining; bitter metallic taste	Erosion of natural deposits and corrosion of iron pipes

2019 Unregulated Contaminants Monitored in the Distribution System Haloacetic Acids

Unregulated Contaminant	Test Date	Unit	Allowed Level MCL	Highest Level Detected	Range of Detection	Violation	Major Sources in Drinking Water
Haloacetic Acid 9 (HAA9)	2019	ppb	**n/a**	**31.41**	**6.72-31.41**	**n/a**	By-product of drinking water chlorination
Haloacetic Acid 5 (HAA5)	2019	ppb	**60**	**22.5**	**4.5-22.5**	**no**	By-product of drinking water chlorination
Haloacetic Acid Brominated 6 (HAA6BR)	2019	ppb	**n/a**	**11.34**	**2.22-11.34**	**n/a**	By-product of drinking water chlorination

2020 City of Detroit
Tap Water Mineral Analysis

Parameter	Units	Max.	Min.	Avg.
Turbidity	NTU	0.70	0.03	**0.11**
Total Solids	ppm	177	46	**137**
Total Dissolved Solids	ppm	162	77	**123**
Aluminum	ppm	0.197	0.014	**0.071**
Iron	ppm	0.183	ND	**0.112**
Copper	ppm	0.012	ND	**0.000**
Magnesium	ppm	8.36	5.93	**7.40**
Calcium	ppm	34.8	23.5	**27.6**
Sodium	ppm	7.78	4.43	**5.14**
Potassium	ppm	1.31	0.89	**1.00**
Manganese	ppm	ND	ND	**ND**
Lead	ppm	ND	ND	**ND**
Zinc	ppm	ND	ND	**ND**
Silica	ppm	19.5	ND	**2.3**
Sulfate	ppm	43.0	14.5	**25.1**

Parameter	Units	Max.	Min.	Avg.
Phosphorus	ppm	1.40	0.11	**0.51**
Free Carbon Dioxide	ppm	16.7	5.7	**8.0**
Total Hardness	ppm	118	95	**103**
Total Alkalinity	ppm	80	66	**72**
Carbonate Alkalinity	ppm	ND	ND	**ND**
Bi-Carbonate Alkalinity	ppm	80	66	**72**
Non-Carbonate Hardness	ppm	40	22	**30**
Chemical Oxygen Demand	ppm	13.5	ND	**2.4**
Dissolved Oxygen	ppm	17.0	7.8	**11.1**
Chloride	ppm	13.9	8.1	**9.6**
Nitrate Nitrogen	ppm	ND	ND	**ND**
Fluoride	ppm	0.81	0.49	**0.65**
pH		7.41	6.97	**7.26**
Specific Conductance @ 25 °C	µmhos	274	195	**224**
Temperature	°C	25.8	1.8	**13.7**

These tables are based on tests conducted by GLWA in the year 2019 or the most recent testing done within the last five calendar years. GLWA conducts tests throughout the year only tests that show the presence of a substance or require special monitoring are presented in these tables.

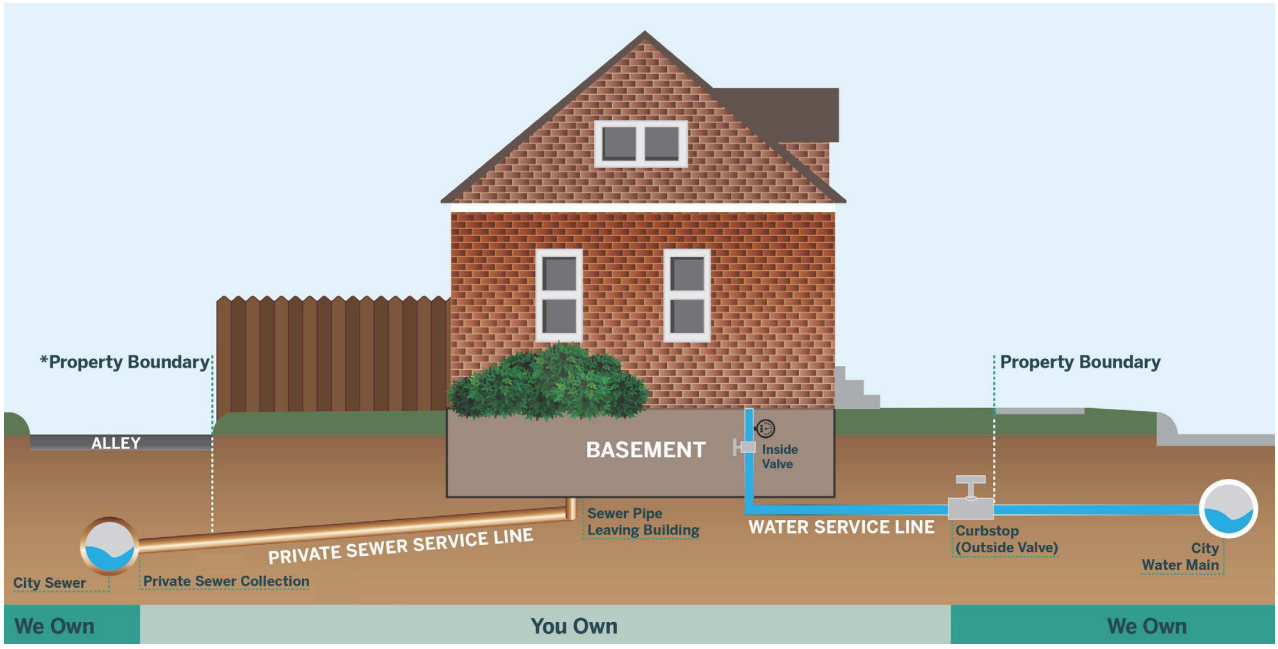
Did You Know?

Did you know the water service line connects your house to the water main?

The water main that brings treated drinking water to your neighborhood is either under the street or located under the right-of-way (berm) between the sidewalk and the street. Homes and businesses are connected to the water main by a service line. DWSD is responsible for the portion from the water main to the stop box (turn-on/off valve) in the front of the house or business. Property owners are responsible for the service line from the stop box to the water meter. DWSD is in the process of replacing lead service lines while on the street replacing the water main. Go to www.detroitmi.gov/dwsd and click on "Lead Service Line Verification" to verify if you have a lead service line.

Did you know property owners are responsible for the sewer service pipe from the point at which it leaves the house (beneath the basement) and connects to the City sewer?

Most of the City's sewer pipes are located in the rear of the property; a few are located in the street. Sewers are typically in the alley or the easement in your backyard. The property owner is responsible for the sewer pipe from the drain inside the house or structure to the connection at the City's sewer collection pipe, even if it's past the property line. DWSD is responsible for the collection pipe that runs in the alley or street, serving each customer. DWSD recommends residents, especially those with trees in the backyard, hire a licensed plumber every spring to have the sewer line snaked all the way to the connection of the City sewer. Roots and other debris can clog the sewer line and cause basement backups.



Water & Sewerage Department

This report is available on the City of Detroit website at **detroitmi.gov/2020waterqualityreport**

We welcome your comments and opinions about this report. Please direct your comments or questions to the DWSD Public Affairs Group.

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