



Macomb County Public Works 2023 Fall Report

CANDICE S. MILLER

MACOMB COUNTY PUBLIC WORKS COMMISSIONER



IN THIS ISSUE:

Reducing Combined Sewage Overflows, Award Winning Projects, NO MORE SINKHOLES, Sewer Collapse Prevented, Lake St. Clair Lyngbya 'muck' Study Underway, and more...



Pictured: Clinton River Spillway

Our Mission

Improve
Water
Quality

Improve
Quality
of Life

Critical
Component
of Economic
Prosperity

The Macomb County Public Works Office has three goals:

improve water quality, improve the quality of life for our residents, and serve as a critical component of economic prosperity in our community.

The MCPWO administers 474 county drains that prevent flooding in our communities.

Some of these drains are open streams or creeks, while others are massive underground structures that carry storm water away from neighborhoods and businesses. Given our responsibility for these waterways, we are actively engaged in numerous initiatives to enhance the overall water quality in our lakes and rivers, most notably the Clinton River and Lake St. Clair. In addition, we operate 68 miles of sanitary sewer lines which transport waste from more than 800,000 residents and businesses to the Great Lakes Water Authority (GLWA) Water Resource Recovery Facility (WRRF) for proper treatment.

COMMISSIONER'S MESSAGE

Dear Neighbors,

The Macomb County Public Works Office continues to make huge progress in several ways including: inspecting and maintaining our vital underground infrastructure; removing dead trees, overgrown vegetation and sediment buildup in our open channels to improve stormwater flow to reduce the risk of flooding; and reviewing plans from land developers to ensure proper drainage on their sites.

Since taking office in January 2017, I have been committed to transparency. Much of the critical work we perform literally occurs far below the surface, out of view from passersby. We're committed to openness of not only how much we spend, but how we spend it.

The department has come such a long way in seven years. In many ways, we were like a start-up company – taking on challenges old and new, for the good of the many people who live, work and play in Macomb County. We have a tremendous team in place – a dedicated management team and staff, who work very well together.

As you will see in this report, everything we do is with an eye on our department's mission: Improving water quality which equals quality of life and doing what we can as stormwater managers to foster economic prosperity.

From major construction projects to sewer inspections, from clearing logjams to reviewing land development engineering plans, the Macomb County Public Works Office is working hard in a variety of ways to improve our underground infrastructure and drains.

Our various projects are proof that Macomb County is a leader in not only identifying underground infrastructure needs but having the political will to make the major investments. Of course, one of department's top goals – and one of the primary reasons I ran for this job -- continues to be reducing combined sewer inflows into Lake St. Clair. We continue to make major strides. Even though much of the work we do is below ground and out-of-sight to passersby, I'm confident that in the years ahead, future leaders across the state and the region will point to Macomb County as a shining example of how to do things right for future generations.

For more information about the Public Works Office, visit us at publicworks.macombgov.org, subscribe to our e-newsletter and follow us on social media.

Sincerely,

Cardie S. Miller



Commissioner Candice S. Miller receives “Local Elected Official” award

The Michigan Recreation & Park Association has honored Macomb County Public Works Commissioner Candice S. Miller with its “Local Elected Official Award” for her years of efforts to improve the quality of life for Michigan residents through promotion of parks and recreation.

“This was an unexpected honor and I’m very grateful,” Miller said. “Throughout my career in public service, I’ve always tried to think about quality of life, and how we can improve the quality of life for everyone. Even though I might be the one getting the award, members of the association deserve awards for all the things they do for the quality of life for our folks throughout Michigan each and every day.”

Miller was nominated for the Local Elected Official Award by Amy McMillan, director of the Huron-Clinton Metroparks, along with the Detroit Zoological Society and the Six Rivers Land Conservancy.



Odor Control & Corrosion Prevention

When inspections reveal moderate, significant or severe degradation of the interior side of large sanitary sewer concrete pipes, a plan is developed for preventive maintenance, rehabilitation or replacement.

The Macomb County Public Works Office has four ongoing projects – known as “Odor & Corrosion Control Facilities” – to mitigate the sewer gas that is highly corrosive to the concrete.

These new below-ground structures will draw in the gas (hydrogen sulfide) that’s created by turbulence of sanitary sewage flow and filter it. This will reduce neighborhood odors emitted from the interceptors and protect those large pipes from further corrosion.

“We find it, we fix it AND we prevent it from happening again,” Public Works Commissioner Candice S. Miller said.





MCPWO wins American Public Works Association Award for Emergency Repair in Warren

The Macomb County Public Works Office received an award from the Michigan Chapter of the American Public Works Association for the emergency repair of a large, rotted sewer pipe from the early 1960s that had caused a sinkhole along 10 Mile Road in Warren and just a few feet from a home.

The repair of the sinkhole and the spray lining of a nearly 30-foot stretch of the enclosed section of the Bear Creek Drain, west of Mound Road, was named by the APWA as its "Project of the Year/Emergency Response Less Than \$1 Million."

It's the first time in Michigan that a spray lining method was used on corrugated metal pipe to rehabilitate a sewer. The completed work provides long-term protection of the sewer without the alternative expensive method of excavation to remove the rotted metal pipe and replace it with new concrete pipe.

"We're honored to receive this award, and we're very pleased that through swift action featuring first-of-its-kind metal pipe rehabilitation in Michigan that we were able to avert the potential collapse of 10 Mile," said Public Works Commissioner Candice S. Miller. "In Macomb County, we're committed to inspecting, maintaining and, where necessary, rehabilitating our drains."



Commissioner Candice S. Miller with Construction & Maintenance Manager Stephen Downing



Lake St. Clair Lyngbya 'muck' Study Underway

Macomb County has partnered with the federal government to get to the root of the muck problem plaguing pockets of the Lake St. Clair shoreline.



Research biologists with the U.S. Army Corps of Engineers (USACE) and County officials have begun sampling of the Lyngbya algae to determine how it grows in the lake, before breaking away to form dense, free-floating mats that cling to the shoreline, canals, boat wells and some beach areas, and whether the muck poses any health risks.



"We need to understand what is causing it, what its makeup is, and whether there are preventative or maintenance steps available to eradicate it," Macomb County Public Works Commissioner Candice S. Miller said.



The Macomb County Public Works Office reached out to USACE last year to propose that federal officials consider the Planning Assistance to States grant program to fund a study. Each year of the 2-year study will cost an estimated \$200,000 and will be split between the USACE and Macomb County.



In-System Storage Project will reduce Combined Sewer Overflows (CSOs)



Construction continues near I-94 and 9 Mile Road at a major underground project that will use existing infrastructure to reduce combined sewer overflows (CSOs) into Lake St. Clair.

Months of excavation to a depth of approximately 35 feet has now exposed the 11-foot-diameter interceptor sewer that conveys combined sanitary sewage, storm water and snow melt from all of Eastpointe and most of St. Clair Shores.

As part of the “In-System Storage” project, a large rubber dam will be installed inside the pipe. During heavy rain, our engineers and pump station operators will inflate the rubber device for it to temporarily hold back – or

“store” – the flow within the pipe instead of much of it being discharged into Lake St. Clair. When the rain event subsides, the rubber bladder can be slowly deflated and allow the combined sewer flow to continue downstream to the Great Lakes Water Authority wastewater treatment plant in Detroit for full treatment.

“This is such an important and innovative project that will help us reduce the risk of flooding in the two cities and protect our beautiful Lake St. Clair from CSOs,” Macomb County Public Works Commissioner Candice S. Miller said. “The additional great thing is that the project will be completed with no increase to rate-payers due to the receipt of county funds.”

The inflatable dam will provide 3.5 million gallons of additional storage within the system thereby reducing CSOs.

NO MORE SINKHOLES

Sewer collapse prevented in Macomb Township



An innovative repair of a major sanitary sewer serving Macomb and Shelby townships has prevented the collapse of the severely deteriorated concrete pipe and averted a sinkhole.

The installation method and product known as “spiral wound pipe” now protectively lines the interior of a 755-foot section of the Garfield Interceptor Sewer beneath Garfield Road at 21 Mile Road in Macomb Township. The sewer rehabilitation was necessary because an inspection of the 7-foot-diameter sewer in 2022 discovered severe degradation of the concrete pipe, caused by corrosive hydrogen sulfide gas that is created by turbulence of raw sewage.

“I’m not exaggerating when I say that with the condition of this interceptor at 21 Mile and Garfield, if we weren’t taking these steps, we could have a sinkhole there,” said Miller, “and you can imagine what that would do to traffic if there was a sinkhole.”

The spiral wound method requires less construction space on the surface than some other sewer rehabilitation methods. The interlocking PVC strip – measuring approximately 3 inches in width -- is fed from its spool and down a manhole to reach the interior of the interceptor, where workers guide it by hand into a unique tool which resembles a bicycle sprocket and presses it up against the interior wall of the pipe as the device turns and locks it in place.

It’s the first time that spiral wound PVC has been used in Michigan to rehabilitate a sewer. The product is expected to last more than 50 years.



SEWER COLLAPSE PREVENTED

21 Mile & Garfield Road





Two Major Sewer Rehabilitation Projects nearing completion on 15 Mile Road

Work is progressing on two large, vital projects to ensure we don't have another major sewer collapse and sinkhole.

On 15 Mile Road, west of Schoenherr Road in Sterling Heights – Segment 5, the new pump station being built inside a 70-foot-deep shaft to help convey sanitary sewage in the Macomb Interceptor Drain that serves nearly 600,000 residents from 11 communities in Macomb County is nearing completion. Impervious lining has been installed in the widest section of the interceptor along 15 Mile. Further east, the application of a geopolymer/cement spray on the interior of the pipe in progress. Both measures will protect the concrete pipe – which had been severely degraded by approximately 40 years of exposure to highly corrosive sewer gas – for many decades.

A similar project is continuing a few miles further east, at 15 Mile and Garfield Road – named Segment 6.

“We can’t emphasize enough the critical importance of these project. We realize it’s taken quite a while, but this is intensive, critically needed infrastructure work to prevent potential infrastructure and environmental disasters,” Macomb County Public Works Commissioner Candice S. Miller said. “We appreciate the patience and understanding from residents, businesses and motorists in those areas.”

Both projects are being done with state funding with no increase to rate-payers.





**Setting up dewatering pump
in Segment 5**



**Moving pump component in
place in Segment 5**

"We remain committed to inspections, maintenance and sewer rehabilitation where necessary."
-Commissioner Candice S. Miller



**Torch cutting flume of pipe
downstream in Segment 5**



**Setting last HOBAS pipe in
place in Segment 6**

DRAIN MAINTENANCE REDUCES RISK OF FLOODING



Pictured: Denryter Drain in Macomb Township

Of the 474 drains in Macomb County that are under the jurisdiction of the Public Works Office, 401 miles are open channels.

The Macomb County Public Works Office is increasing the maintenance in our county drains at an unprecedented rate. That work involves removing fallen dead trees, overgrown vegetation and sediment that can severely impact water quality and lead to flooding. Removing those obstructions can instantly improve the flow and reduce the threat of flooding in residential, commercial, industrial and agriculture areas traversed by these open drains.

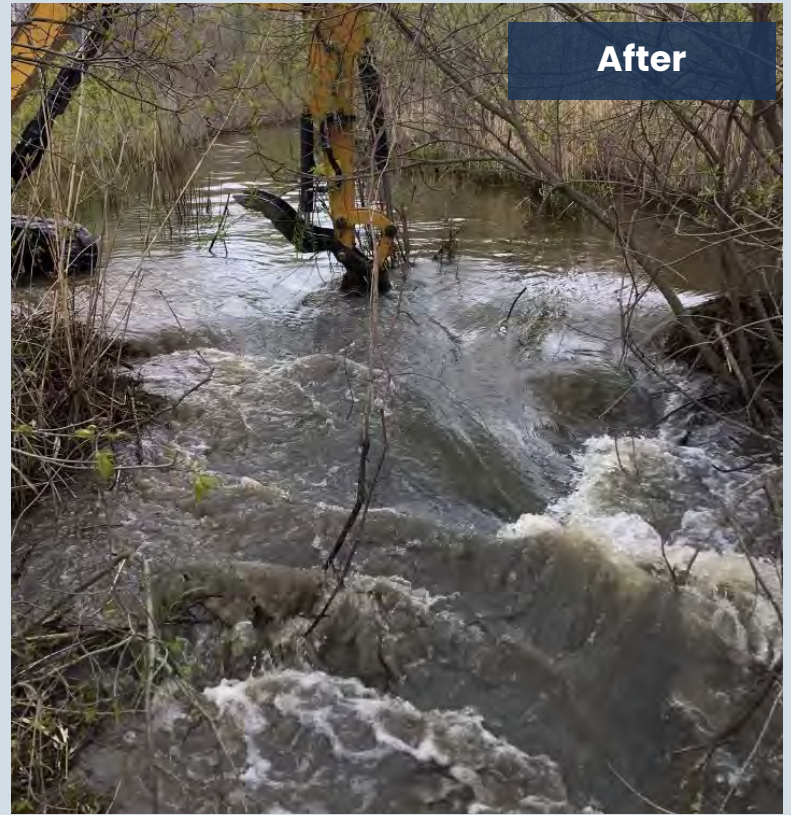
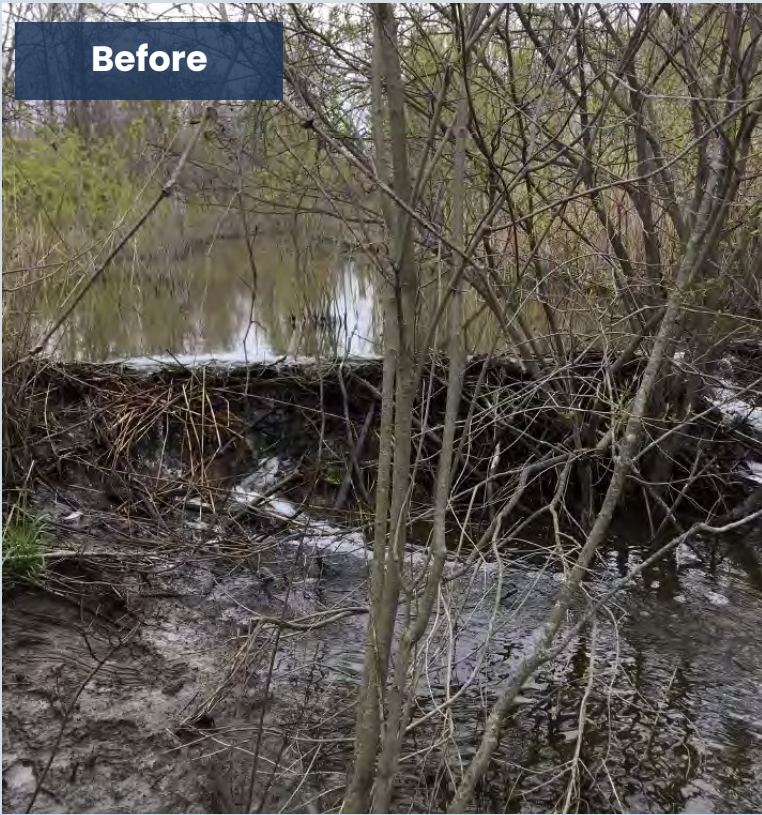
“With hundreds of drains, many of which haven’t been touched for 50 years or more, this sort of work is endless. Our hard-working drain maintenance team is doing a tremendous job,” Public Works Commissioner Candice S. Miller said.

A local community drain maintenance cost-sharing program was started by Commissioner Miller. It has been successful in large part because of an annual budget allocation by the Macomb County Board of Commissioners and costs matched by any municipality that wants to address blockages in key locations.

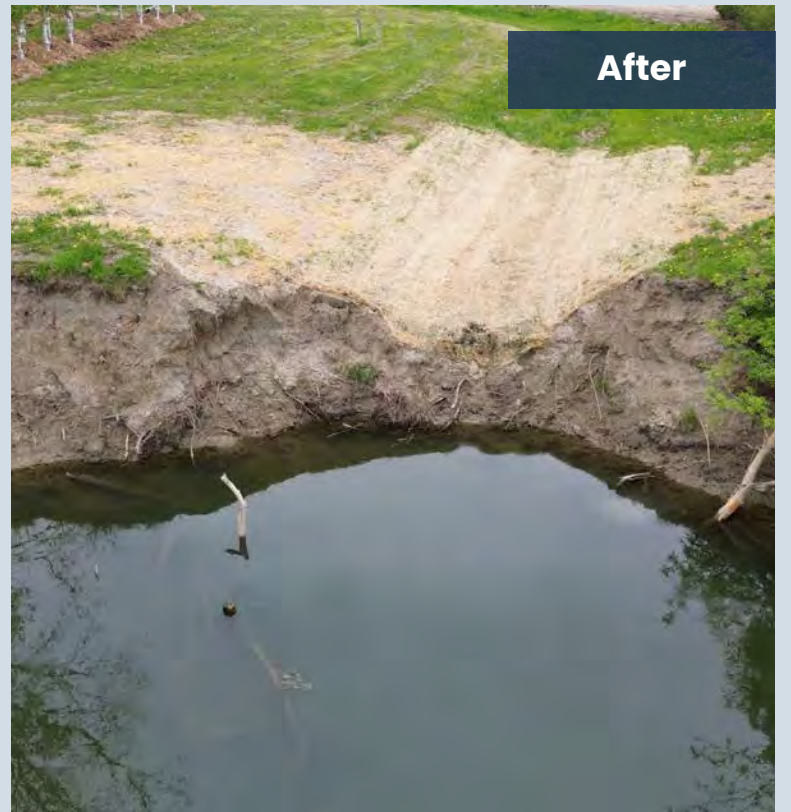
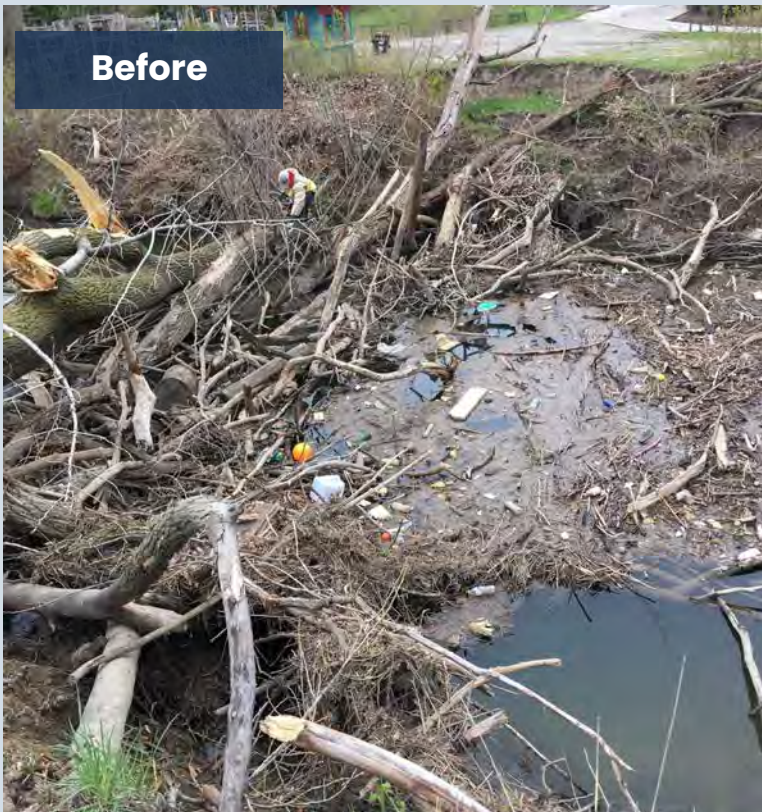
**WE FIND 'EM
WE FIX 'EM**

**DRAIN MAINTENANCE
BEFORE & AFTER**

FISH CREEK DRAIN BLOCKAGE REMOVAL - CHESTERFIELD



CLINTON RIVER MIDDLE BRANCH BLOCKAGE CLEARED - MACOMB





Promoting Economic Prosperity

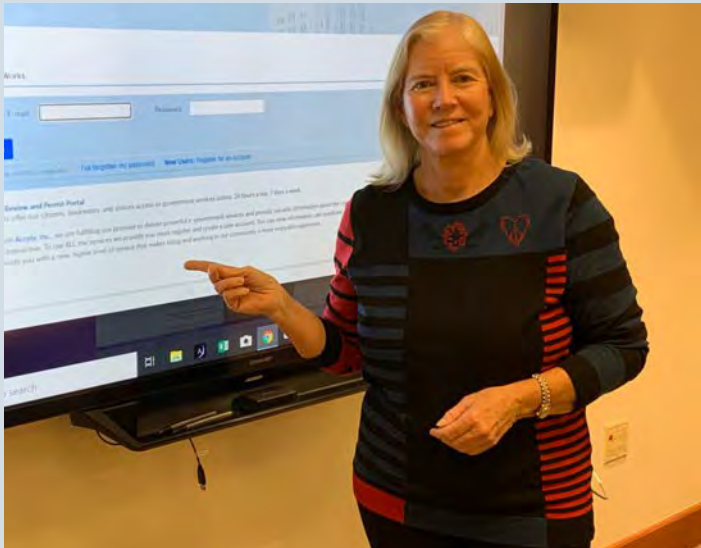
The Macomb County Public Works Office reviews the engineering plans for all new developments to ensure proper storm water drainage.

Our engineering team determines whether new basins, sewer pipes, culverts, taps to existing drains and relocations of drains that are under the jurisdiction of our office, meet our standards. Once construction gets underway, our inspectors monitor those improvement. As such, our office is a key component of economic prosperity.

One recent example: the Kingsbury Drain in Shelby Township. Improvements consisted of constructing a forebay for water quality and retrofitting the existing control structure for channel protection.

“Ensuring that rainfall runoff and snow melt are handled properly before any buildings are constructed will reduce the risk of severe flooding,” county Public Works Commissioner Candice S. Miller said.





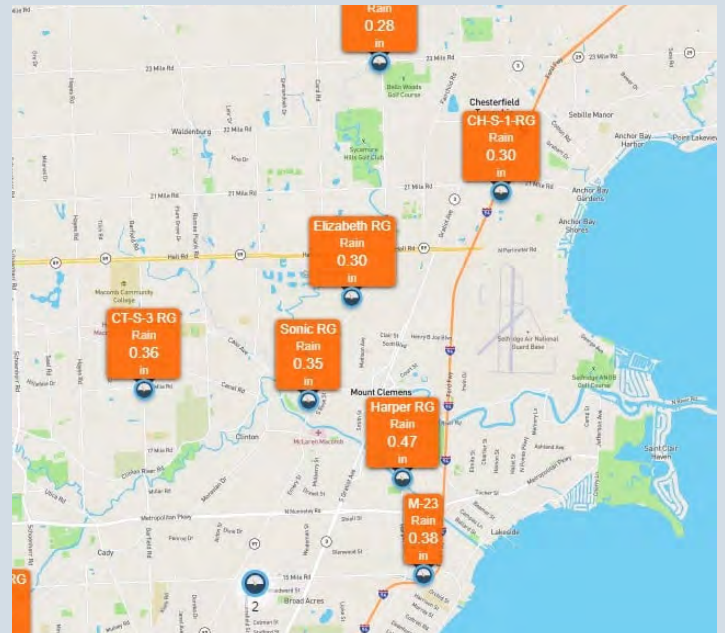
LIVE 24/7: Macomb County Public Works Permit & Plan Review Portal

- Request a drain permit or soil erosion permit
- Submit plans for review by Public Works staff and schedule an inspection
- See comments by engineers and inspectors in real time
- Pay the permit fee online using a credit card
- Download the permit once it's approved

**Visit the Permit and
Plan Review Portal on our website today!**

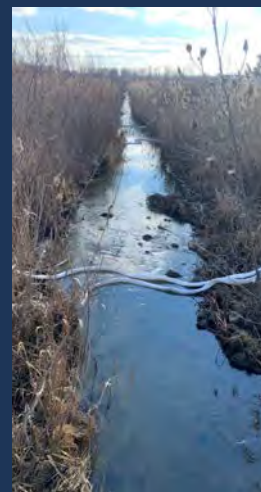
Tracking Rainfall: How Much Rain Did YOU Get?

Macomb County residents can view how much rain their neighborhood or other parts of the county have received by viewing rain gauges data on the Macomb County Public Works website. The information can help homeowners determine how much rain their lawns and gardens have received. The information helps our pump station operators prioritize stormwater storage in our sewer systems.



REPORT A POLLUTER: 24-Hour Toll Free Emergency Hotline 1-877-679-4337

If a discharge is detected in a Macomb County drain, please contact the Macomb County Public Works Office.




Pictured: Denryter Drain



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