



Macomb County Public Works Summer 2021

Candice S. Miller, Commissioner



Message from Commissioner Candice S. Miller

Dear Neighbors,

Since the pandemic began, we've all been dealing with huge challenges and difficulties.

It's said that hope springs eternal. As the country continues to grapple with a variety of challenges, we're embracing welcomed rays of sunshine.

At the Macomb County Public Works Office, our continuing goal for the department is to improve the quality of life for residents through clean water and being a critical component of economic prosperity.

It's already been over four years since our team very successfully directed the emergency replacement of the massive sewer that collapsed and caused the Christmas Eve 2016 sinkhole on 15 Mile Road on the border of Fraser and Clinton Township. It was one of the largest infrastructure disasters in Michigan history, occurring one week before I took office as Public Works Commissioner.

However, we won't rest on our laurels. Despite challenges posed by the pandemic, our staff -- working remotely, in the office or in the field where so much activity occurs -- pressed forward to serve the public. We didn't miss a beat and never once dropped the ball. In fact, we've launched some important projects and are planning many other ones.

Excavation of a 65-foot-deep shaft continues in Sterling Heights in order to reach and install new lining inside the last remaining stretch of unreinforced concrete of the Macomb Interceptor sewer, known as Segment 5, beneath 15 Mile Road. In late summer, we'll begin similar work at 15 Mile and Garfield roads. Along with grouting of the sewer pipe to stop leaks and gushers that could lead to significant infiltration, these are critical preventative maintenance projects to greatly reduce the risk of another major sinkhole.

A primary reason I ran for this office was to reduce or eliminate combined sewer overflows into our beautiful Lake St. Clair. At the Chapaton Pump Station in St. Clair Shores, we continue to analyze operational changes to reduce CSOs. Meantime, we're proceeding with plans to boost the ability to temporarily store millions of gallons of combined stormwater and sanitary sewage further upstream during significant rain events or snow melt, until the event subsides and we can release the flow to the Detroit wastewater treatment facility -- instead of discharging it into the lake, again, in our continuing effort to reduce CSOs.

Although discharging of CSOs has been common for decades, it's a problem that shouldn't be passed on to future generations. In Macomb County, we have the political will to face this challenge and achieve substantial results!



With support from the county Board of Commissioners, we have continued our 50-50 drain maintenance program, in which we split the cost with individual communities to remove logjams, debris and sediment from open-air drains such as creeks, streams and the Clinton River to keep the water flowing, which improves water quality.

Meantime, in a separate project addressing water quality in the region, experts are closely studying the health of the Clinton River by analyzing water samples.

I'm especially proud that our department recently launched the new Public Works Permit & Plan Review Portal. A couple of years in the works, this is a cutting-edge, online service that allows homeowners, developers and builders to easily apply for stormwater drainage permits and soil erosion permits, review inspectors' comments and download the permit, at any hour of any day wherever an internet connection is available.

As we move forward, we remain committed to clean and transparent government. To learn more about our department's projects, activities and services, I encourage you to visit macombgov.org and click on the Macomb County Public Works page. You can also contact us by email at public.works@macombgov.org, or by phone at (586) 469-6101.

Sincerely,

Candice S. Miller

Improving Water Quality: Monitoring the Clinton River

The Clinton River will be studied closely as part of a new effort to improve water quality and wastewater treatment in the region. The monitoring of the Clinton River is part of the Great Lakes Water Authority's "Regional River Water Quality Monitoring Program" announced recently. Sensors will be installed at Clinton River locations in Sterling Heights and Clinton Township.



"Much like finding the sources of illicit sewage connections and discharges, responding to fuel spills, removing logjams and other ways we strive to protect our waterways, monitoring the health of the Clinton River is one of several contributing factors when our office points out that water quality and quality of life go hand in hand," Macomb County Public Works Commissioner Candice S. Miller said.

Commissioner Miller has a longtime commitment to testing for water quality. While serving in Congress, she secured funding for the purchase and installation of sensors in 2006 at seven water intake valves along the St. Clair River, and two valves in Lake St. Clair near New Baltimore and Mount Clemens. Those sensors sampled the water every 15 minutes to check for 27 different chemical contaminants.

NOW LIVE: Macomb County Public Works Permit & Plan Review Portal

Homeowners, land developers, builders and engineers in Macomb County have a new, efficient and convenient way to submit plans to the Macomb County Public Works Office for review.

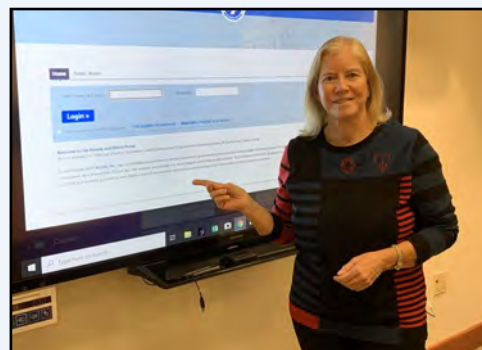
In May, the department unveiled its "Public Works Permit and Plan Review Portal," a leading-edge online service providing a password-protected method for individuals and companies to:

- **Request a drain permit or soil erosion permit**
- **Submit plans for review by Public Works staff and schedule a drain 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**

Best of all, anyone establishing a user account can access the system any hour of the day, 365 days a year. No longer will plans or payments have to be mailed or delivered in-person during business hours to the Public Works Office in Clinton Township. That saves time for busy developers and homeowners during normal work hours, costs for gasoline and postage, and means fewer phone calls.

"We're excited to unveil this because our department strives to be a key component of economic prosperity," Public Works Commissioner Candice S. Miller said. "We want to do everything we can to make sure our department is as user-friendly as we possibly can be, and we also want to be very efficient. We're confident that county residents, developers and builders will save time using this service. Like they say, 'Time is money!'"

For homeowners, the portal will be helpful when applying for soil erosion permits for projects such as new swimming pools, garages and pole barns.



Visit the Macomb County Public Works Permit and Plan Review Portal at: <https://aca-prod.accela.com/>



Excavation Underway at Segment 5 on 15 Mile Road

A construction firm continues to make progress as it digs a 65-foot-deep shaft along 15 Mile Road in the ITC Corridor, just west of Schoenherr Road in Sterling Heights, to reach the Macomb Interceptor that carries the waste flushed by more than 600,000 people.

That section of the Interceptor, west of the location of the Christmas Eve 2016 sinkhole in Fraser, is also known as Segment 5. It's the last major stretch of unreinforced, large diameter concrete pipe on 15 Mile that needs to be lined.

A dewatering pump station has been placed at the construction site as excavation continues. After reaching and entering the 11-foot diameter tunnel, the sewer will be cleaned and debris removed. It will be lined with glass fiber reinforced polymer pipe for 7,000 lineal feet.

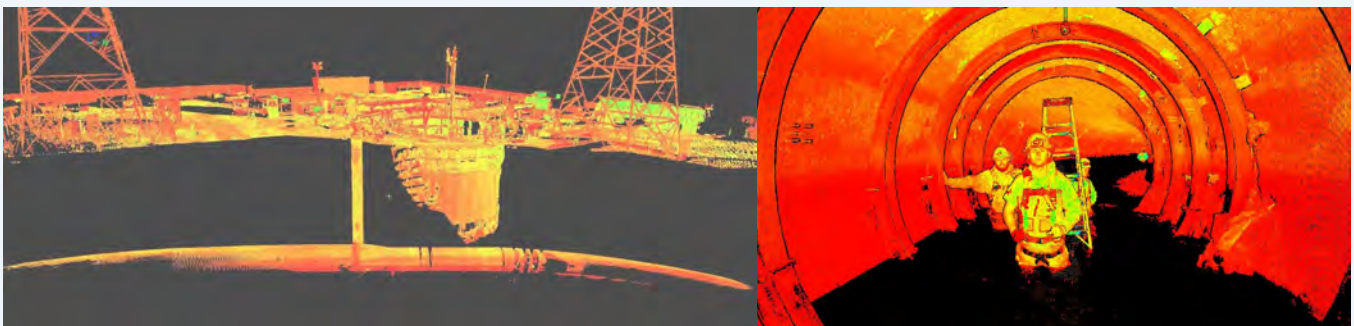
Heading east from there, 1,300 lineal feet of 8-foot diameter pipe will be spray-lined with a geopolymer coating.

“Making sure this part of the Interceptor is secure could even be more important than what we repaired in 2017 because Segment 5 runs under the ITC corridor where all these transmission towers are, and it runs under the Red Run Drain,” Macomb County Public Works Commissioner Candice S. Miller said while monitoring the construction progress in person. “I promised we’re never going to have another sinkhole in the Interceptor.”

The project is expected to be completed in mid-2022. Little traffic disruption is expected.

The \$28 million project will not require an increase in sewer rates for the Macomb Interceptor Drain Drainage District communities. It is being paid in part with a \$12.5 million lawsuit settlement paid in November 2020 to the MIDD after the board chaired by Miller sued three contractors whose mistakes while working in the Oakland-Macomb Interceptor sewer to the west caused conditions that eventually led to the 2016 sinkhole. Approximately \$6 million of the Segment 5 project is being paid from reserves. The remainder will be financed via low interest rate bonds with payments spread across a 20-year period.

The contract for the project was competitively bid and was awarded to Oscar Renda Contracting. The company's bid was \$7.7 million less than the next-lowest bid.



Three-dimensional scans show the shaft being excavated in the ITC corridor near 15 Mile and Schoenherr roads in Sterling Heights in relation to the massive Macomb Interceptor sewer below it.

Up Next: Sewer Rehabilitation Project at Segment 6

To eliminate the risk of another sewer collapse and sinkhole like the one that occurred in 2016 in the city of Fraser, the next phase of a major infrastructure project is scheduled to begin this summer.

The rehabilitation of a section of the Macomb Interceptor sewer is a necessary project and will take place at 15 Mile and Garfield roads.

“We must invest in and maintain our underground infrastructure. We cannot afford another sinkhole or sewer collapse. These repairs will take us into the next generation and beyond,” Macomb County Public Works Commissioner Candice S. Miller said.

The Macomb Interceptor carries the sewage flushed by more than 600,000 people in the 11 communities that comprise the Macomb Interceptor Drain Drainage District.

The upcoming rehabilitation project in the area of the Interceptor known as “Segment 6” will include the lining of approximately 2,100 feet of the 5-foot diameter pipe along 15 Mile, east of Garfield, plus a new access shaft at the eastern end of the project. That will be followed by the lining of a 1,200-foot curved portion of the 11-foot diameter interceptor at the intersection. Additionally, an “air jumper” will be installed and connected to the existing bio-filter on 15 Mile to help alleviate odors that have been prevalent in the area for many years.

Segment 6 rehabilitation is scheduled to begin in late summer 2021 and be completed by spring 2023.

The MIDDD board voted unanimously on April 12 to award the rehabilitation project to Ric-Man Construction of Sterling Heights, for \$13,541,545.

“Among the three companies that bid on this project, I’m delighted that the lowest qualified bid was from a local firm and at a significantly lower amount than engineering estimates,” said Miller, who chairs the board.

In addition to protecting the sewer system for decades, the additional good news for ratepayers is that no increase in sewer rates is expected with Segment 6.

The need for critical infrastructure investment is evidenced by the sinkhole that occurred on 15 Mile near Eberlein Drive, between Utica and Hayes roads, on Christmas Eve 2016. Caused by the collapse of a section of the massive sewer 65 feet below the surface, it was one of the worst infrastructure disasters in Michigan history and forced the evacuation of 23 homes, including three that were condemned, two of which were eventually demolished.

Miller ordered inspections of other parts of the Interceptor. It revealed significant corrosion of stretches that have reinforced concrete pipe, including exposure of steel rods. Extensive grouting was completed in the sewer beneath 15 Mile.



“This type of rehab work is very important. Underground infrastructure may be out of sight to many folks but it can’t be out of mind,” Miller said. “It’s like performing critical preventive maintenance on your home in order to avoid major problems.”

The 11 communities in the MIDDD include Fraser, Sterling Heights, Utica, New Haven and Clinton, Chesterfield, Harrison, Macomb, Lenox, Shelby and Washington townships.

Comprehensive Sewer Inspection Program Launched

The cost to conduct the most sweeping underground infrastructure inspection program in the history of the Macomb County Public Works Office will be much less than expected.

A \$421,254 contract to inspect 26 miles of sanitary sewers was awarded to Doetsch Environmental Services in December 2020. The sewer lines range in size from the giant 11-foot-diameter Macomb Interceptor, to some that are 12 inches across.

As part of the project, the Warren-based company also will inspect 363 manholes and a dozen drop shafts under MCPWO’s jurisdiction. Considering the scope of the unprecedented program, officials initially estimated the project would cost approximately \$2.2 million.

Reinforced concrete pipes will now be inspected every six years, and non-reinforced concrete pipes will be checked every three years.



What Your Public

The Macomb County Office of Public Works plays a key role in the quality of life in Macomb County. Among the office's chief responsibilities are maintaining local waterways to prevent flooding and ensuring that the waterways are protected so that they can be enjoyed not only by today's residents but also by generations yet to come. Through the leadership of Commissioner Candice S. Miller, the office has made improving the overall health of Lake St. Clair an overarching priority in all of the office's activities.

Public Works activities can be grouped into four basic categories:

Wastewater Services

The Office of Public Works oversees two multi-community systems that collect sanitary sewage and deliver it to the Great Lakes Water Authority wastewater treatment plant in Detroit. The two systems – the Macomb Interceptor Drain Drainage District and the 8 ½ Mile Relief Drain Drainage District – serve well over 700,000 people in 13 Macomb County communities. Following the completion of repairs on the December 2016 sewer collapse on 15 Mile Road in the MIDDD system, and years of neglect, our office created a Master Plan and has conducted system wide inspections. We are in the process of rehabilitating our systems so that a collapse like that will never happen again! This department is leading the effort of our master planning process, which will foster long-term economic viability in our communities.



Administration, Financial & Education

Charged with the day-to-day operations of the MCPWO, this department reviews budgets, coordinates the meetings of various drain boards and maintains high levels of customer service throughout the office. As a part of an ongoing review of all contracts and agreements in place at the MCPWO, the department successfully completed the promised refinancing of the 2013 Lake St. Clair Clean Water Initiative bonds which will save three cities between \$15,000 to upward of \$250,000. This department is overseen by Commissioner Miller's Chief Deputy, Brian Baker. Our office looks forward to continuing to pursue future possible refinancing opportunities on behalf of the municipalities. Thus far, we have now cumulatively saved \$12.5 million by successfully refinancing existing bonds over just the past four years.

Works Office Does

Engineering, Plan Review, Soil Erosion & Inspections

The office restructured the review process for building plans, streamlining the process and reducing waiting times for developers and homeowners.

The office has improved its operations to give residents, contractors, governmental agencies and other organizations a single point of contact for all initial inquiries. To facilitate the proper operations of our open drains, this department conducts more than 15,000 soil erosion inspections every year, and approves over 2,500 engineering plan reviews and permits annually supporting local economic development. This spring we rolled out our new online inspection and permit application program, Macomb County Public Works Permit & Plan Review Portal, which will provide 24/7, 365 days/year access. This department is also leading an effort with other southeast Michigan counties and communities to standardize procedures to the extent possible to further spur economic development in our community and across the region.



Drain Maintenance

The Public Works Office manages 475 drains in the county. About half of these are open drains – some appearing as small creeks or streams, others are ditches that only fill after a rainfall. The other half are enclosed drains — underground pipes generally found in older communities. All of these storm drains eventually transfer water to Lake St. Clair. The Public Works Office has launched a new drain maintenance program to remove log jams, trash and other debris from the open drains, in order to allow water flow to move without hindrance. This effort reduces soil erosion and reduces localized flooding. In the enclosed drains, inspection and testing efforts are ensuring the integrity of the pipes and making certain that sanitary sewage is not entering the drain – and ultimately ending up in Lake St. Clair.



MCPWO Wins ACEC Award

The Macomb County Public Works Office earned a top award for a project which will significantly reduce combined sewer overflows and improve the water quality of Lake St. Clair.

The American Council of Engineering Companies award is for the three-dimensional scanning of 4.5 miles of the 12-foot diameter tunnel that carries storm water and sanitary sewage from Eastpointe and St. Clair Shores to the Chapaton Pump Station. The scanning is an important first step toward increasing the in-system storage capacity of the pipe in order to reduce overflows by 30 percent. That's great news for the lake!

Fostering Economic Development

Pictured here is Commissioner Candice S. Miller visiting an apartment complex development in Sterling Heights. The developer, who needed to relocate the drain, opened up the drain to improve water quality. They wanted to incorporate it as part of their greenspace and provide beneficial stormwater retention on the property.

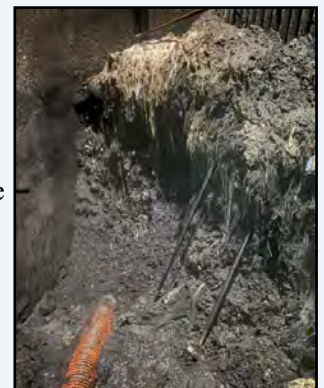


Just announced:

The Michigan Chapter of the American Public Works Association recently announced the **Sterling Relief Drain Daylighting and Green Infrastructure Retrofit** project earned the Project of the Year in the Quality of Life category! The green infrastructure project, funded by \$2 million of grants, transformed approximately 2.5 miles of the 5-mile-long drain. The watercourse was “daylighted,” allowing the ground to serve as a natural filter for rain and melting snow instead of having all of the runoff from approximately one-fifth of Sterling Heights flow below ground and discharging directly into the Red Run Drain. To restore habitat, nearly 500 trees, 2,500 shrubs and more than 100,000 native perennial plant plugs, were planted along the 250-foot-wide trapezoid channel. All of the plantings are native species recommended by our experts. Commissioner Candice S. Miller and her team will formally accept the award in October!



The use of disposable wipes appears to be increasing during the pandemic, leading to costly damage to sewer pipes and pump stations. While labeling on packages indicates wipes are disposable, flushable and biodegradable, these wipes do NOT break down. That causes havoc with our pumps and machinery.



Protecting Water Quality in Lake St. Clair: In-System Storage to Reduce CSO's

At the Macomb County Public Works Office, we have changed the culture in the last several years, and it's now a principal goal to reduce and ultimately eliminate combined sewer overflows (CSOs).

"Water quality equals quality of life. Reducing combined sewer overflows into the lake is an ongoing, major challenge," Commissioner Candice S. Miller said. "Although we're permitted by the state to have CSOs, this is a problem we shouldn't just push onto future generations."

In August 2020, Gov. Gretchen Whitmer's administration formally rejected Macomb County's request to use a canal at Chapaton Pump Station in St. Clair Shores, for increased storage capacity which would have reduced discharges of treated or partially treated sewage from Chapaton into Lake St. Clair by 70 percent. Our plan was



endorsed unanimously by the Macomb County Board of Commissioners, the county's delegation in the Legislature, and the St. Clair Shores City Council. Still, the Michigan Department of Environment, Great Lakes & Energy (EGLE) rejected it. Even in the face of denial, our team went back to the drawing board.

One of the ways we're achieving reduction of CSOs is through operational changes and projects to increase the in-system "storage" of combined sewer flow at the Chapaton Pump Station and retention basin. Located in St. Clair Shores, the facility is part of the 8 ½ Mile Drain District that serves 80 percent of the city and all of neighboring Eastpointe.

Recent operational changes and new equipment at Chapaton have now allowed up to 8.6 million gallons of combined sewer flow to be "stored" upstream in the massive 12-foot-diameter interceptor sewer -- instead of resulting in combined sewer overflows. Here's how it works: Five new manhole covers and seals were installed atop the 70-foot-deep wet well inside the pump station, located on Nine Mile Road at Jefferson Avenue. Engineers subsequently determined the operational level inside the wet well could be increased to a higher elevation. Therefore, during a wet weather event, we can then store millions of gallons of combined sewer flow upstream in the interceptor until the event passes, and then divert it to Detroit for proper treatment rather than discharging it into the lake as a treated CSO.

This operational change will allow us to realize a reduction of CSOs at Chapaton by up to 30 percent, depending on the frequency and length of significant rain events. Fewer and smaller overflows into the Chapaton basin will have an added benefit: a cost savings in the amount of chemicals needed to treat CSOs.

In addition, a separate planned project calls for installation of a series of inflatable rubber bladders in the interceptor that can hold back combined sewer flow, and then gradually release it to the Great Lakes Water Authority's facility in Detroit for full treatment -- instead of discharging into the Chapaton basin and ultimately Lake St. Clair.

We also are exploring a plan to rehabilitate a portion of the canal between the underground basin at Chapaton and the gates which release overflows into the rest of the man-made canal and Lake St. Clair.



“We Find ‘Em, We Fix ‘Em”



The Macomb County Public Works Office has successfully obtained reimbursement of emergency spill response costs from a Nebraska-based trucking company responsible for a fuel spill.

Last August, a construction contractor noticed an oily sheen while working near Dodge Park Road, north of 15 Mile Road, in the Sterling Relief Drain. Public Works representatives determined diesel fuel got into a storm sewer on Stanley Drive, north of

15 Mile Road and east of Mound Road in Sterling Heights. We were told by nearby businesses that a tractor trailer had broken down in the street a day earlier and leaked a significant but unspecified amount of diesel.

“We have zero tolerance for any contamination in our waterways. This was a significant spill, and we vowed to investigate the source of it,” Macomb County Public Works Commissioner Candice S. Miller said. “Accidents sometimes happen, but failure to report is not acceptable. Prompt notification of authorities can help reduce the extent of contamination.”

The trucking company has paid a total of \$12,629 in manpower, equipment and contractor costs to the Public Works Office and to the fire departments in Sterling Heights and Clinton Township.



FUN FACT:
What stands 38 feet tall, has a 14-foot diameter and safely eliminates odor from sanitary sewage in an environmentally friendly way?
It's the new bio-trickling filter at the Northeast Sewage Pump Station.

Dumping any type of substances into a sewer, ditch, creek or other type of drain is illegal and harmful to the environment.

In April, we learned that an undetermined amount of suspected antifreeze had been dumped into a ditch in Clinton Township, very close to the Clinton River. Not only is dumping of toxic substances into a sewer, ditch, creek or other type of drain illegal, it's harmful to the environment.

“All of this is in the watershed - that goes to the Clinton River or it's going directly into Lake St. Clair. We don't want any kind of contamination in our drains, in our ditches,” Macomb County Public Works Commissioner Candice S. Miller said. “We have a zero tolerance policy. If we find out who did it, we are going to prosecute them if we can, and we certainly want to assess them any costs as well.” The dumping is under investigation.

“Spring is the time of year when people are de-winterizing their recreational vehicles and boats. Make sure you properly dispose of any products,” Miller said.

The commissioner encourages county residents and businesses to properly and safely dispose of any toxic substances. **Anyone who spots anything suspicious in a ditch or other drain is urged to immediately call their fire department or the Macomb County Public Works Office's 24-hour hotline at 877-679-4337.**



**24-HOUR TOLL FREE
EMERGENCY HOTLINE NUMBER
877-679-4337**

Working Together: Our 50/50 Drain Match Program

Thanks to ongoing support from the Macomb County Board of Commissioners, the Macomb County Public Works Office offers a 50/50 match program. Under the program, MCPWO works with local units of governments to target smaller drain improvement projects that are a priority in that particular community.

MCPWO contacts each township supervisor, city manager and village president each year to chart out a plan of work to tackle small blockages or areas of local flooding.

“Local government leaders know their own areas of concern and may have issues that we wouldn’t otherwise be aware of. This program lets our dollars go farther by sharing costs between MCWPO and the community as we address those issues,” said Commissioner Candice S. Miller.



Fish Creek Drain —Before



Fish Creek Drain—After

Public Works: A Critical Component for Economic Development

Cleanout, excavation and widening of an approximately 200-foot stretch of the Thoel Drain south of 26 Mile Road, east of Romeo Plank, in Macomb Township has been completed.

The newly configured drain, inspected by Macomb County Public Works staff, will handle the increase in stormwater runoff following the construction of streets and new homes in the next phase of the Wolverine Estates North residential development.

The finishing touch of the deeper, wider drain includes new top soil, grass seed, fertilizer and mulch to provide some natural absorption and to assist with the path of stormwater flow.

The Macomb County Public Works Office ensures that proper drainage regulations are followed, and we help our community with economic prosperity.



Thoel Drain—Macomb Township

The Things We Find In Our Waterways!



Trampoline in the Gibson Drain



Recliner in the Harrington Drain



Car parts in the Deer Creek Drain



Safe in the Plumbrook Drain

Nothing – not even leaves or grass clippings – should ever be dumped into a drain or sewer!

Dumping of such materials is illegal and not only can impede the flow of water immediately, but also can cause other things to snag onto it, further restricting the flow and impacting stormwater runoff. That can lead to erosion of the banks as the water looks for another path, and it also hurts the health of the water.

Publicworks.macombgov.org

