



2022 Report to the MIDD Communities

MACOMB INTERCEPTOR DRAINAGE DISTRICT (MIDD)
CANDICE S. MILLER
MACOMB COUNTY PUBLIC WORKS COMMISSIONER



The MIDD communities are:
Fraser, New Haven,
Sterling Heights,
Utica and
Chesterfield, Clinton,
Harrison, Lenox,
Macomb, Shelby and
Washington townships.



No More Sinkholes!

Segment 5 & Segment 6 Sewer Rehabilitation Progress Along 15 Mile Road

Construction continues at three locations along 15 Mile Road to ensure that another sewer collapse and sinkhole like the one that occurred in Fraser in late 2016 won't happen again.

West of Schoenherr Road in Sterling Heights, at the Macomb Interceptor section known as "Segment 5", the construction contractor spent several months digging a massive shaft to a depth of 60 feet to reach and cut open the large, 11-foot-diameter concrete pipe installed in 1972 that is the last major stretch of unreinforced concrete of the MIDD. After removing the top portion of the pipe in that location, the company – Oscar Renda Contracting -- installed a temporary 8-foot-diameter steel flume that currently carries the sewage from almost 600,000 people from 11 of Macomb County's communities. They then excavated several more feet down to painstakingly demolish the pipe invert and are making steady progress for the eventual

construction of a permanent pump station at that location.

A bit upstream in the Interceptor, workers cleared sediment and debris – some of it approximately 2 feet deep -- that may have accumulated for about a dozen years, including some that apparently flowed from the December 2016 sinkhole site upstream at Eberlein Drive.

The contractor will install impervious glass fiber-reinforced polymer pipe – known as HOBAS – to line 7,000 feet of the pipe's interior to protect it from further corrosion caused by hydrogen sulfide gas. Where the pipe transitions to a narrower, 8-foot-diameter stretch, 1,300 lineal feet will be spray-lined with a geopolymer coating. To conduct that work, a temporary sewage bypass system has been installed along 15 Mile near Hayes Road and Fontana Drive.

NO MORE SINKHOLES CON'T.

Segment 5 is a \$30 million project but will not require an increase in sewer rates for the MIDD communities. Completion is anticipated by the summer of 2023. The project is being paid for in part with a \$12.5 million lawsuit settlement paid to the MIDD after the board chaired by Macomb County Public Works Commissioner Candice S. 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 is being paid from reserves, with the rest funded by low-interest bonds spread over a 20-year period.

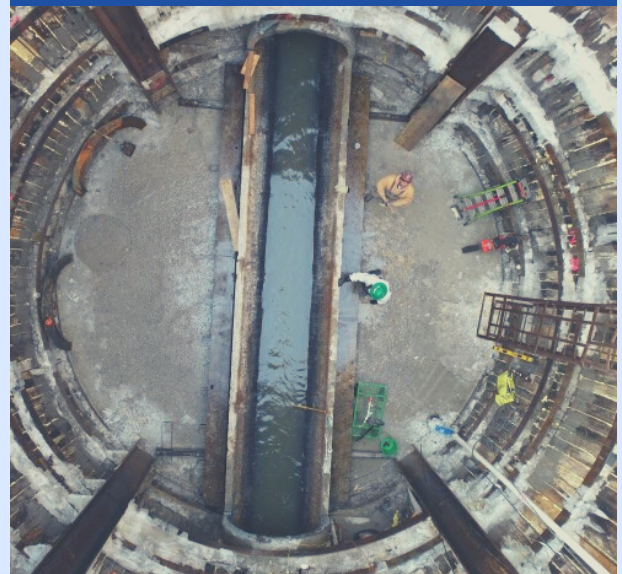
Approximately three miles east of Segment 5, a separate contractor - Ric-Man Construction of Sterling Heights - excavated a shaft in a portion of the MIDD known as Segment 6. The crew is working 40 feet below the surface along 15 Mile Road, just east of Garfield Road along the Clinton Township-Fraser border. This rehabilitation project features the slip lining of HOBAS pipe for approximately 2,100 feet of 5-foot-diameter concrete pipe along 15 Mile Road.

By the end of spring or early summer 2022, a second phase of Segment 6 sewer rehabilitation is scheduled to begin to the immediate west. It will include the slip lining of a 1,200-foot curved portion of the 11-foot-diameter Romeo Arm Interceptor, at the 15 Mile-Garfield intersection. There will also be installation of an "air-jumper" just west of the intersection which will be connected to the existing bio filter. This will help alleviate odor issues prevalent in this area for years.

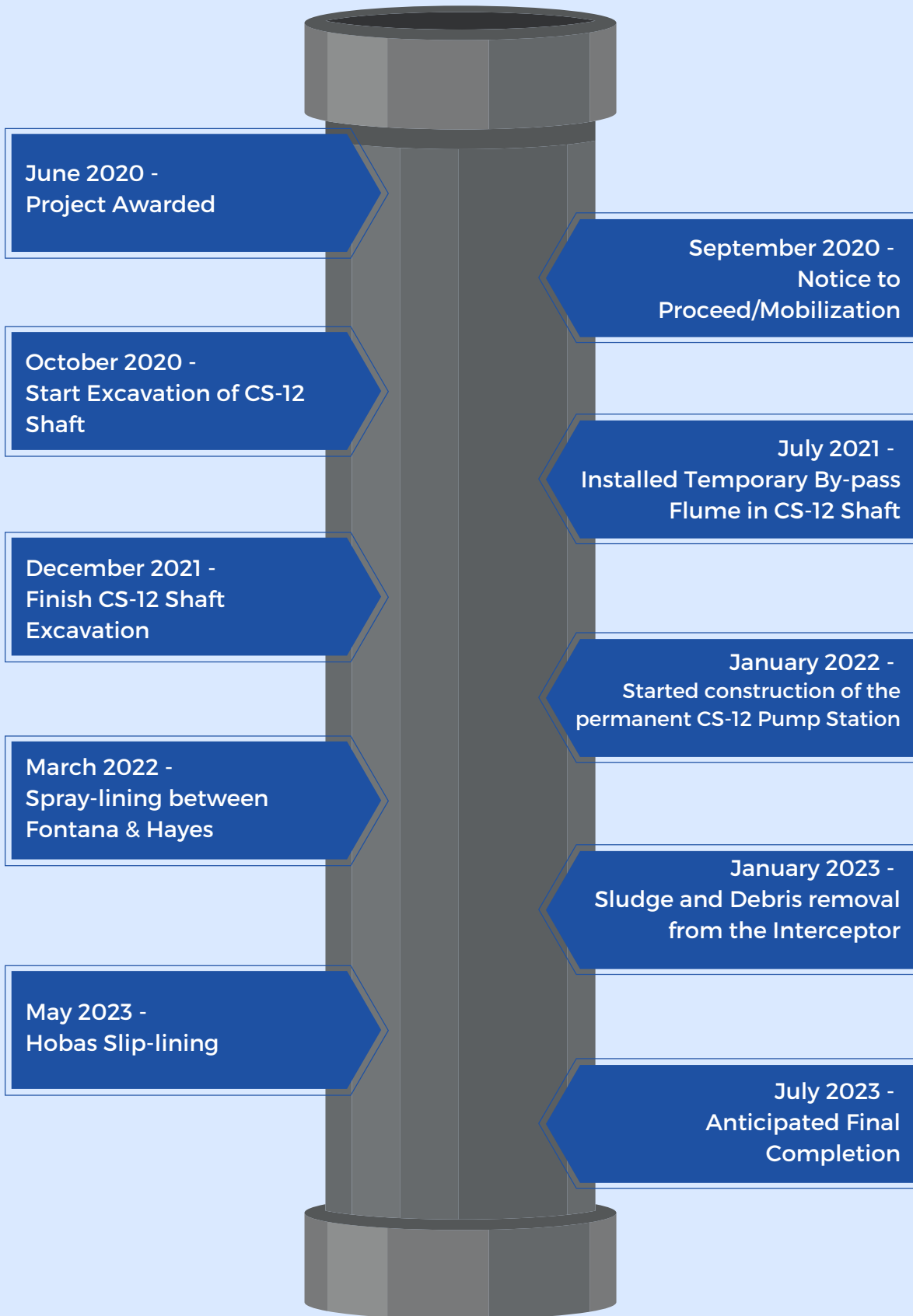
Segment 6 has a total project cost of \$16 million. It is scheduled to be completed by January 2023.



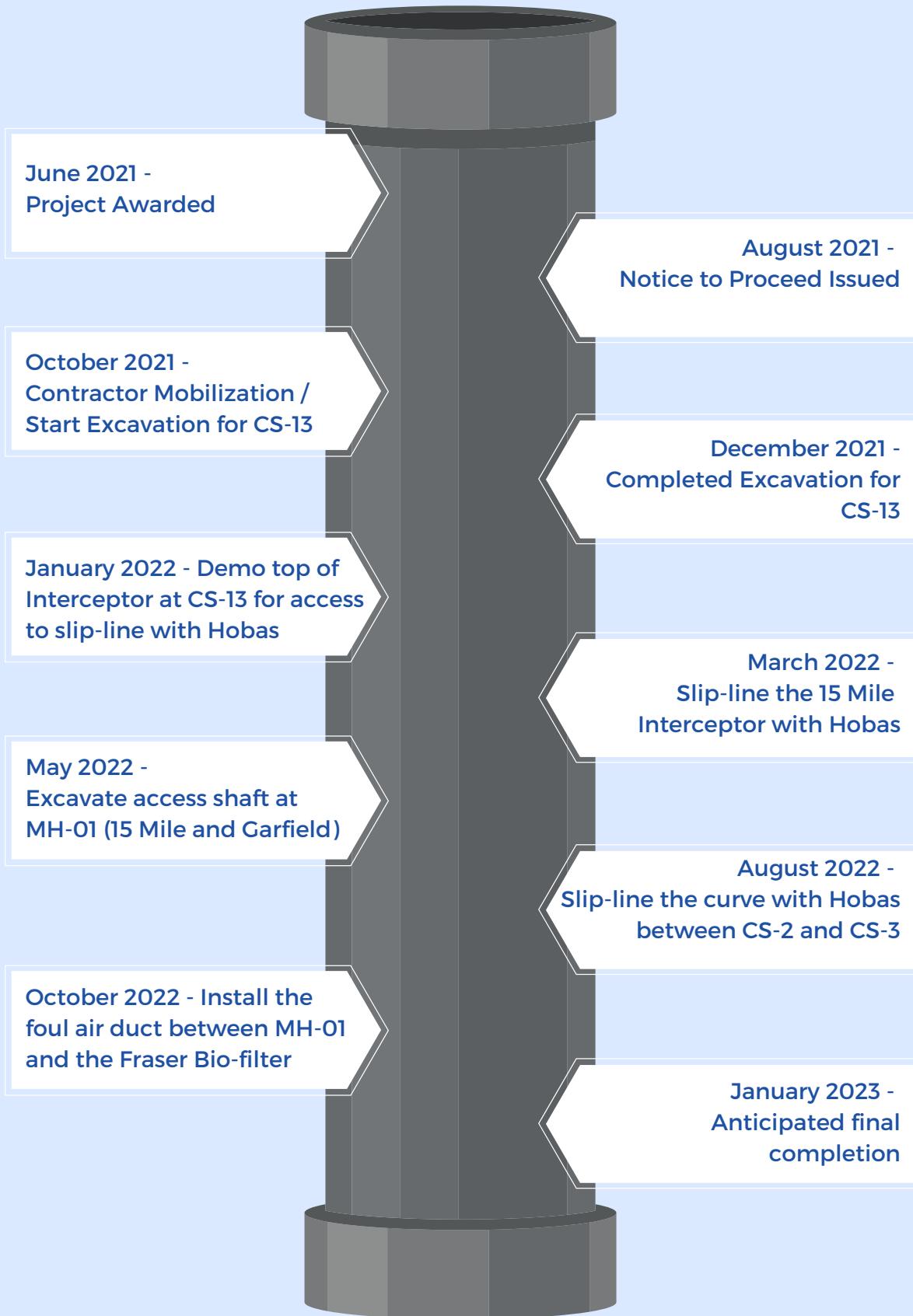
"These projects are very significant and their importance can't be understated," Macomb County Public Works Commissioner Candice S. Miller said. "We cannot afford to have another sinkhole."



Segment 5 Rehabilitation Timeline



Segment 6 Rehabilitation Timeline





Degradation shown of removed pipe at Segment 6

Odor & Corrosion: Control Projects To Be Awarded

In addition to lining underground pipe, there is a need to prevent dangerous gases from causing damage to the interceptor to prevent future degradation and sinkholes. Bids are expected to be awarded in the spring on projects to reduce odor at four facilities and to protect underground infrastructure from the corrosion caused by sewer gas.

This summer, construction is set to begin at the existing bio-filter on 15 Mile Road, west of Garfield Road by converting it from an open bed of wood chips that act as a filter by removing corrosive hydrogen sulfide gas from the interceptor pipe, to an enclosed bed with an engineered carbon material to capture odor. That project will take approximately 16 months to complete and will significantly reduce odor in that area.

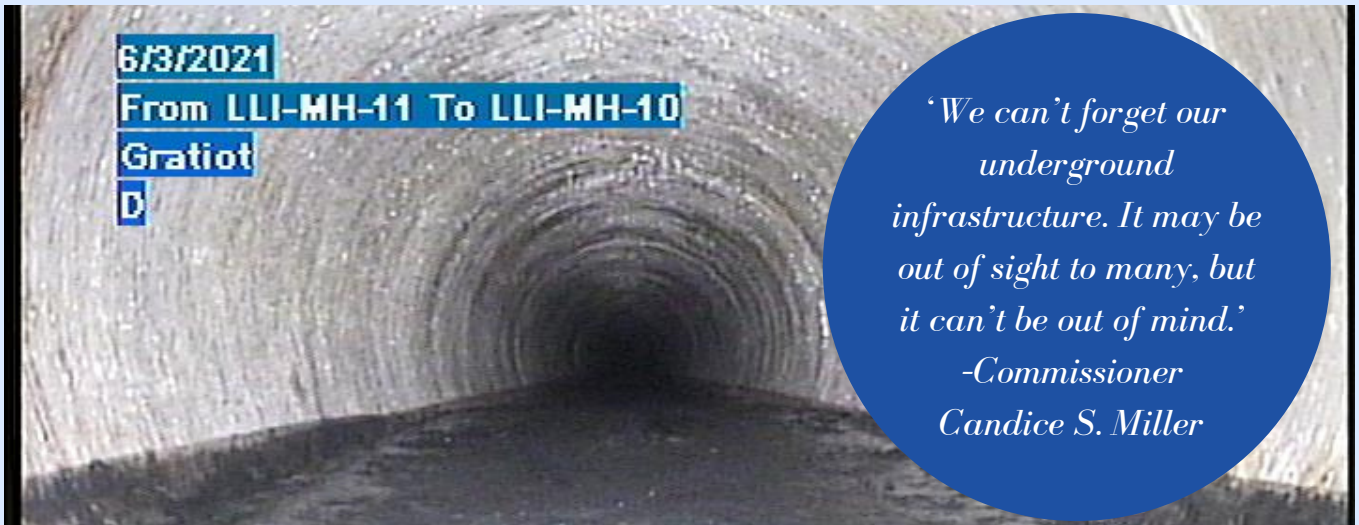
“Odor has been an issue in that area for years, and this improvement to the bio-filter will be a welcomed change for nearby residents and businesses,” Macomb County Public Works Commissioner Candice S. Miller said.

New odor and corrosion controls will be built at the southeast corner of 21 Mile and Garfield; at the Clintondale Pump Station on Union Lake Road near 15 Mile in Clinton Township; and at the North Gratiot Interceptor Pump Station in Chesterfield Township. Improvements at these three facilities – also planned to get underway this year – will reduce the presence of hydrogen sulfide, the corrosive gas produced by turbulence in sewage flow and which causes degradation of concrete pipe, as shown in the photo above.



Biofilter off 15 Mile Road

“Odor has been an issue in that area for years, and this improvement to the bio-filter will be a welcomed change for nearby residents and businesses,” Macomb County Public Works Commissioner Candice S. Miller said.



Sewer Inspection Program Continues

The most widespread inspection of underground infrastructure in Macomb County is continuing.

In December 2020, a \$421,254 contract was awarded to Doetsch Environmental Services, a Warren-based company, to inspect sewers under the jurisdiction of the Macomb County Public Works Office including 19 linear miles of sanitary sewers in the Macomb Interceptor Drain district. The pipes range from as little as 24 inches in diameter, to the 11-foot-wide giant interceptors which carry the sewage from lateral pipes in the drainage district. The company's crews also are tasked with inspecting 145 manholes and eight drop shafts that are under the Macomb County Public Works Office's jurisdiction.

"Inspecting the pipes for structural integrity, degradation caused by corrosive sewer gas, and checking for infiltration of sand and groundwater is the foundation of preventive maintenance and preventing sewer collapses," Public Works Commissioner Candice S. Miller said.

Most recently, the contractor worked inside the southern part of the Garfield Interceptor, resumed work in the Lakeshore Interceptor where debris and sediment building were removed and inspected the Chesterfield/Lenox/New Haven Interceptor near Cotton Road in Chesterfield Township. The results of inspections continue to drive an ongoing sewer grouting and maintenance program. Reinforced concrete pipes will be inspected every six years, and non-reinforced concrete pipe will be examined every three years.





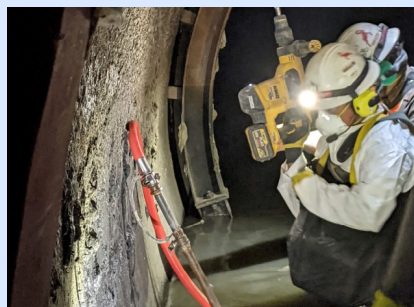
Grouting Update

To fill voids and block infiltration of groundwater and surrounding soils into our large interceptor sewers, a third phase of chemical grouting is scheduled to begin this year to reduce the chances of a pipe collapse or sinkhole like the one that occurred on 15 Mile Road at Eberlein Drive in Fraser in December 2016.

In 2019, we started grouting the Romeo Arm Interceptor along 15 Mile between Garfield Road and the ITC Corridor. The total volume of grout injected was approximately 88,500 gallons at a total cost of approximately \$3 million that included engineering oversight.

In June 2020, the MIDD Board authorized an additional \$3 million for Doetsch Environmental Services and \$438,000 to engineering firm Anderson, Eckstein & Westrick to continue grouting the other reaches of the MIDD system. That has included the Lakeshore, Garfield and Romeo Arm interceptors. Since that time, we have injected approximately 102,000 gallons of grout!

We anticipate extending the Doetsch and AEW contracts soon, with \$3.5 million in the 2021-22 budget for vital, continued grouting efforts to stop active infiltration within the MIDD system in advance of future rehabilitation and maintenance projects.



Water Residential Assistance Program (WRAP) available to help with water bills.



WRAP

Water Residential Assistance Program

💧 \$300/year per household

Minimum assistance \$25/mo (\$300/yr); maximum assistance \$1,500 annually (arrearage payments up to \$1,200)

💧 Water conservation & repairs

Use a lot of water? Households with high water consumption may qualify for additional assistance of up to \$1,500 in minor plumbing repairs and water saving kits

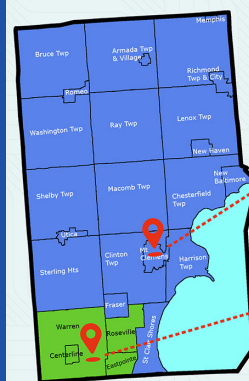
💧 Eligibility

Must reside in a participating municipality in Macomb County; must provide proof of residency and income; income eligible at 200% of Federal poverty level or below

Don't wait until you have a shut off!
586-469-6464

mca.macombgov.org/MCA-ES-ActionCenters

FIND YOUR LOCAL ACTION CENTER



For cities in blue...

Macomb Community Action
Central Action Center
196 North Rose Street
Mount Clemens, MI 48043
P: (586) 469-6964
F: (586) 469-7436

For cities in green...

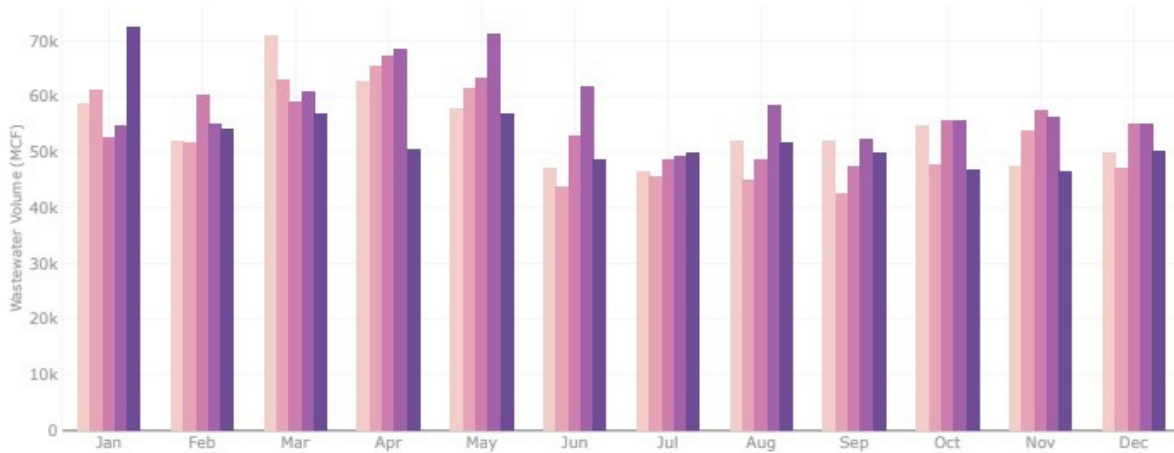
Macomb Community Action
South Action Center
11370 Hupp Avenue
Warren, MI 48089
P: (586) 759-9150
F: (586) 759-9156

MCA.MACOMBGOV.ORG



Macomb
Community
Action

If you are behind or struggling to pay your water bill, the WRAP program at the Community Action Alliance may be able to help. To find more information, and to see if you qualify, please visit <https://mca.macombgov.org/MCA-WRAP>



Go With The Flow: New Flow Meter Dashboard Available to Community Leaders

The Macomb County Public Works Office maintains 30 sanitary sewer outlet meter facilities for the 11 communities in the Macomb Interceptor Drain Drainage District. These facilities continuously monitor and collect data on the sewage volumes, which is used for billing purposes.

A new, cloud-based meter data management tool called ACE allows local officials to now view the data without having to wait for MCPW staff to download the data and provide it in a spreadsheet. Instead, wastewater, DPW and finance administrators, along with elected officials and consultants, can now view that data for their own community in great detail on a user-friendly dashboard.

The sanitary sewage data from each meter can be analyzed in near-real time, and viewed for recent trends and comparisons. Data from rain gauges is also included in the ACE dashboard. By analyzing sewage flow in conjunction with rain totals, officials can determine whether there is any infiltration of ground water into the sanitary system. Infiltration of storm water increases the amount of flow measured by the meters. Communities are charged for treating this infiltration by GLWA, lessening infiltration can lower communities charges.

The new data platform – provided to the 11 municipalities at no additional cost -- also benefits each individual community in the MIDD by allowing officials to view the percentage of sewage flow capacity remaining at any given time in a month.

COMMUNITY DASHBOARD IS INTENDED TO PROVIDE A QUICK LIVE SNAPSHOT OF COMMUNITY SANITARY SEWAGE FLOW METERS:

KEY FEATURES INCLUDE:

- 24-HOUR INTERACTIVE TREND OF ALL SANITARY SEWAGE FLOW METERS.
- DAILY AND HISTORIC RAINFALL TOTALS
- DATA QUALITY (SANITARY SEWAGE FLOW METER UPTIME PERCENTAGE)
- 24-HOUR ANALYTICS ON LOW, NORMAL, AND HIGH FLOWS
- 90-DAY CERTIFICATION HISTORY; AS REVIEWED AND CERTIFIED BY MCPWO

OMIDDD Progress

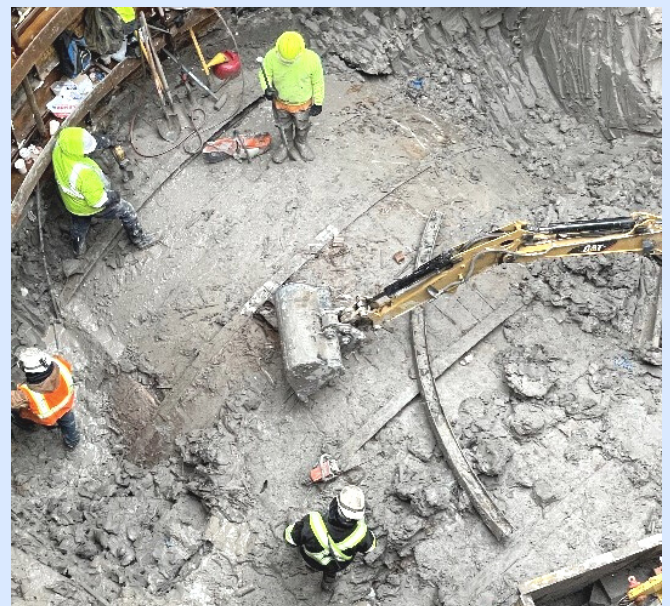
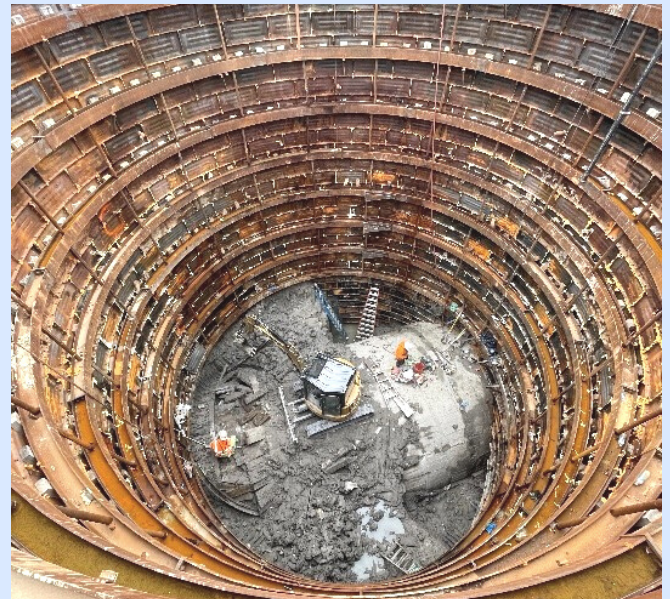
Major capital improvements continue at the Northeast Sewage Pump Station in Detroit as approved and directed by the Oakland-Macomb Interceptor Drain Drainage District board. OMID is an inter-county district, comprised of Macomb County Public Works Commissioner Candice S. Miller, Oakland County Water Resources Commissioner Jim Nash & a representative of the State of Michigan. The MIDD flows into OMID and then to the Wastewater Resource Recovery Facility Treatment Plant in Detroit.

OMIDDD reached an agreement in 2018 with the Great Lakes Water Authority, which operates the pump station on State Fair near Outer Drive in Detroit, to take over much-needed upgrades and repairs of the facility built by the Detroit Water and Sewerage Department in the late 1960s, and the 7-mile stretch of the Northeast Interceptor-East Arm sewer that carries sewage from the 11 communities in the MIDD and a dozen from Oakland County.

Thus far, completed upgrades include a new electrical building at the pump station, new electrical equipment, knife gate valve removal/rehabilitation and new pipes. Two new pumps are expected to be operational by late summer 2022, and installation of three additional pump systems is scheduled to be completed in 2023.

With the excavation of a new access shaft nearing completion, the “slip-lining” of the NIEA interceptor pipe downstream with impervious pipe is scheduled to start in spring 2023 and be completed by the end of 2023. It will last for generations to prevent collapse of the pipe.

The cost of all the projects will total approximately **\$100 million** with no net increase in rates, thanks to savings OMIDDD achieved from GLWA.





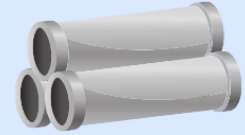
MIDD By The Numbers



11 Communities Served



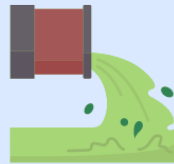
600,000 Residents & Businesses Served



29 Miles of Interceptor



2.1 Million Cubic Feet Annual Flow Volume



ZERO Sanitary Sewer Overflows since 2016



ZERO Sinkholes since 2016



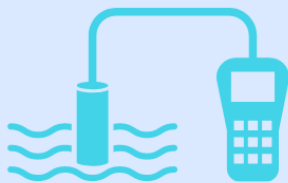
30 Billing Flow Meters



\$12.4 Million in Savings from Refinancing Bonds



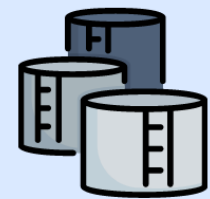
3.0% Avg. Annual Rate Adjustment since 2017 vs. 15% Annual Increase from 2010-2016



43,000 SCADA Remote Sensors



Contractors spent 241 days working in underground pipe in 2021



10 billion gallons of flow stored & safely released while workers present underground



17 Employees

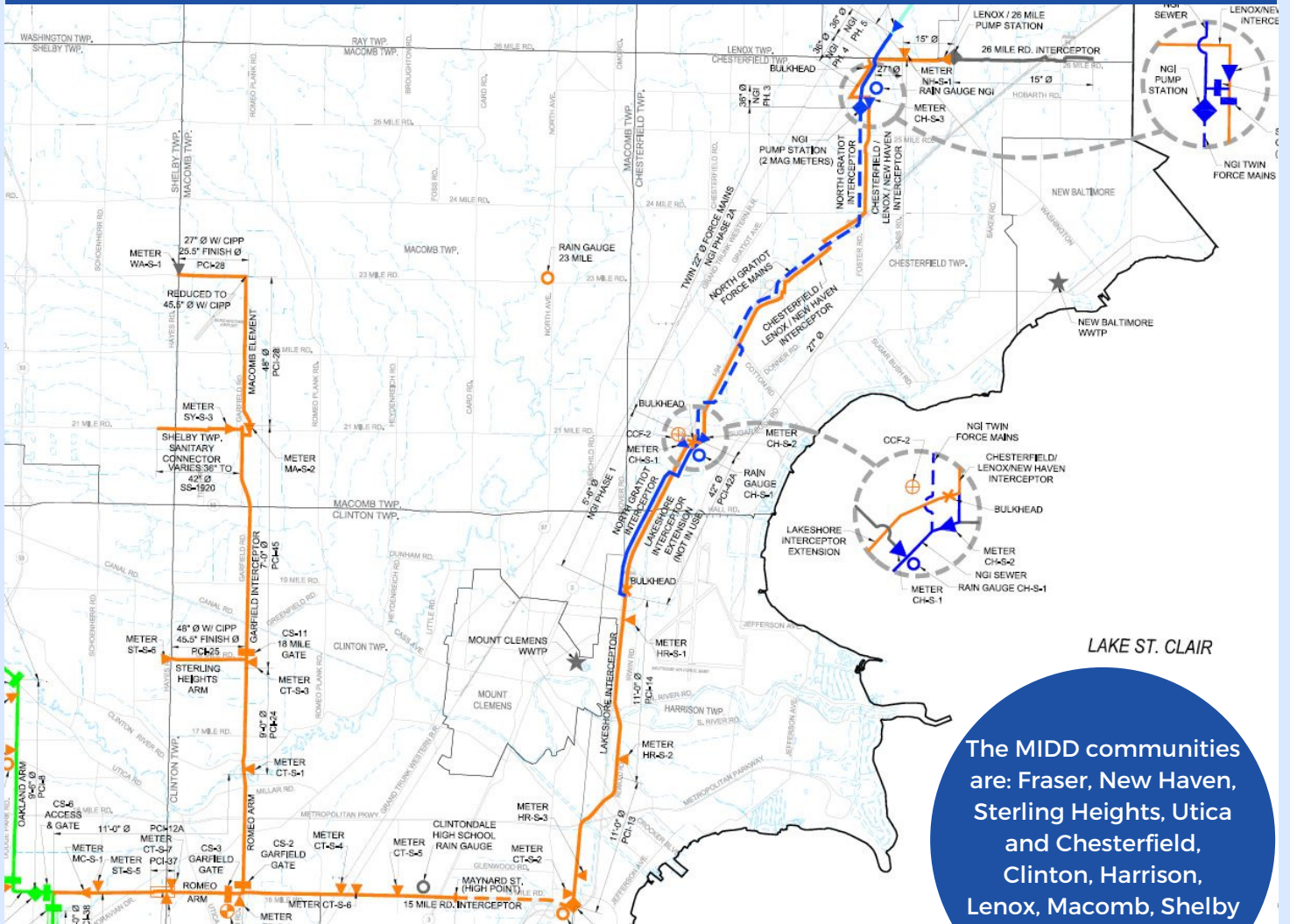


15 Rain Gauges



784 Manholes

The Macomb Interceptor Drain Drainage District is governed by Chapter 20 of the Michigan Drain Code of 1956. This annual report of the Macomb Interceptor Drainage District is presented by Macomb County Public Works Commissioner Candice S. Miller, Chair of the MIDD.



LAKE ST. CLAIR

The MIDD communities are: Fraser, New Haven, Sterling Heights, Utica and Chesterfield, Clinton, Harrison, Lenox, Macomb, Shelby and Washington townships.

**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.



Macomb County Public Works Commissioner Candice S. Miller
21777 Dunham Road Clinton Township, MI 48036 | 586-469-5325 | public.works@macombgov.org

Follow us!

