

MACOMB INTERCEPTOR DRAIN  
INTRA-COUNTY DRAINAGE BOARD  
MARCH 14, 2022  
10:30 A.M.  
AGENDA

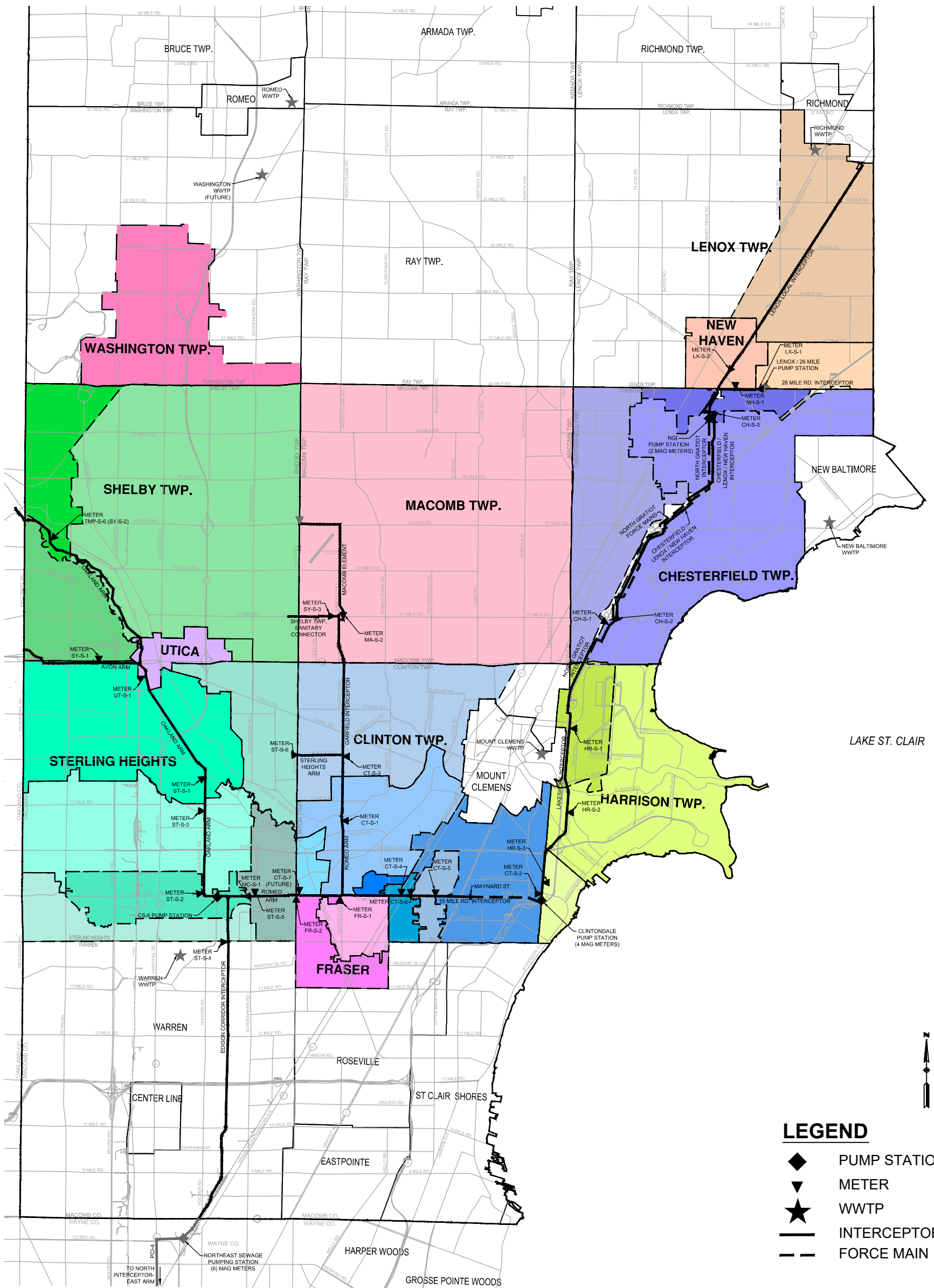
**NOTE: THIS MEETING WILL BE HELD IN PERSON WITH TELECONFERENCE  
OPTION FOR PUBLIC**

**Call in Number: 1-402-588-0132  
Access Code: 692 926 165**

	Page
1. Call of meeting to order and roll call	
2. Approval of Agenda for March 14, 2022	
3. Approval of Minutes for February 14, 2022	3
4. Public Participation	
5. Project Updates – Stephen Downing	7
6. 2022 Report to the MIDD Communities – Candice Miller	28
7. Proposed 2022/2023 MIDD Budget – Brian Baker	40
Motion: To approve the 2022/2023 Macomb Interceptor Drainage District (MIDD) budget and charges.	
8. Grouting Change Orders – Doetsch & AEW – Stephen Downing	66
Motion: To approve the grouting Change Order #3 with Doetsch Environmental Services for \$3 million and Change Order #1 with AEW for \$300,000 for grouting engineering services.	
9. Owner Controlled Insurance Program (OCIP) Update – Stephen Downing	71
Motion: To authorize the Board Chair to bind the required coverages if required prior to the April 2022 Board meeting, subject to the Board receiving an update on premium costs and allocation by project.	
10. Drop Shaft Rehabilitation Change Orders – Inland & NTH – Stephen Downing	74
Motion: To approve Change Orders #1 & #2 with Inland Waters Pollution Control and Change Order #1 with NTH for the Drop Shaft Rehabilitation Project at a combined net cost increase of \$5,660.	

11. Consideration for approval of invoices (see attached)	90
12. Financial Report – Bruce Manning	91
13. Adjourn	

# MACOMB INTERCEPTOR DRAIN DRAINAGE DISTRICT



**Candice S. Miller**

MACOMB COUNTY PUBLIC WORKS COMMISSIONER



UPDATED: FEBRUARY 2017

An adjourned meeting of the Intra-County Drainage Board for the **MACOMB INTERCEPTOR DRAIN** was held in the Office of the Macomb County Public Works Commissioner, 21777 Dunham Clinton Township, Michigan on February 14, 2022, at 11:00 A.M.

PRESENT: Brian Baker, Acting Chair  
Don VanSyckel, Member  
Bryan Santo, Member

ALSO PRESENT: Dan Acciavatti, Deputy Government Relations; Madison Tanghe, Administrative Coordinator

PRESENT VIA TELECONFERENCE: Vince Astorino, Operations & Flow Manager; Jeff Bednar, Environmental Resources Manager; Steve Downing, Construction & Maintenance Manager; Norb Franz, Communications Manager; Bruce Manning, Financial Manager; Tom Stockel, Construction Supervisor

The meeting was called to order by the Acting Chair, Brian Baker. A motion was made by Mr. Santo, supported by Mr. VanSyckel to approve the agenda as presented.

Adopted: YEAS: 3  
NAYS: 0

Minutes of the meeting of January 10, 2022 were presented. A motion was made by Mr. VanSyckel, supported by Mr. Santo to approve the minutes as presented.

Adopted: YEAS: 3  
NAYS: 0

The meeting was opened to public participation, then closed, there being no comments from the public.

Mr. Downing updated the board with Project Updates starting out with Segment 5. Work continues to progress on the construction of the CS-12 Permanent Structure. Things are going well with the structure build. Pouring concrete pad for the new electrical enclosure. Continuing to set up the bypass pump equipment to facilitate the spray lining work down at Moravian/Hayes area. Picture was shown on the screen of them installing some of the structural steel for the permanent structure, welding it in place. A lot of hours spent tying in the rebar. The only real issue is the schedule. We are meeting with Oscar Renda later this month to discuss a full schedule review meeting to see where we can make some time up. Oscar Renda continues to work hard.

Mr. Downing then moved on to the Phase II Grouting effort. Crews are still up at the 21 and Garfield location grouting. We've exceeded our current contract amount and there will be a change order presented to the Board next month to increase the contract funding for this project which is budgeted. The work has been slowed this month due to cold temperatures that are freezing the hoses from time to time.

The Contractor is finalizing the closeout documents for the Meter Facility Rehabilitation Project. The Owner, Engineer, and Contractor have made a punch list. The Contractor is performing all work

required to fulfill punch list, and final balancing change order will be finalized in February for consideration during the March Board meeting.

Mr. Downing updated on the Segment 6 Rehabilitation which is moving along. Photos were shown of the pipe degradation, we are working with Ric-Man on their submittals, and the project is moving along very well.

Lastly, Mr. Downing updated on the Interceptor Inspection Program. We are working closely with Doetsch and Fishbeck to wrap up the final legs that need to be inspected and meeting with them on a weekly basis to get it wrapped up.

A motion was made by Mr. Santo, supported by Mr. VanSyckel to receive and file the project updates by Mr. Downing.

Adopted: YEAS: 3  
NAYS: 0

Mr. Astorino updated the board on the Meter Data Review Dashboard. We put together a brochure for the communities. Each community can only see their own flowmeter data. Communities have the capability to also see their information in a plotting view. Communities often request annual flow volume so they now have a tool to view that information for themselves. We have sent this out to the 11 MIDD communities and also have offered a virtual training program. We have received requests and are starting training today.

A motion was made by Mr. VanSyckel, supported by Mr. Santo to receive and file the meter review update by Mr. Astorino.

Adopted: YEAS: 3  
NAYS: 0

The Chair presented the invoices totaling \$10,359,644.26 to the board for review and approval.

A motion was made by Mr. Santo, supported by Mr. VanSyckel to approve the invoices as presented.

Adopted: YEAS: 3  
NAYS: 0

A motion to receive and file the financial report given by Mr. Manning was made by Mr. VanSyckel and supported by Mr. Santo.

Adopted: YEAS: 3  
NAYS: 0

There being no further business, it was moved by Mr. Santo, supported by Mr. VanSyckel, that the meeting of the Macomb Interceptor Drain Board be adjourned.

Adopted: YEAS: 3  
NAYS: 0

The meeting was adjourned at 11:25 A.M.



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Brian Baker, Acting Chair  
Macomb County Public Works Chief Deputy

STATE OF MICHIGAN  
COUNTY OF MACOMB

I certify that the foregoing is a true and correct copy of proceedings taken by the Intra-County Drainage Board for the Drainage District shown on the attached set of minutes, on February 14, 2022 the original of which is on file in the Public Works Commissioner's Office. Public notice of the meeting was given pursuant to Act No. 267, Public Acts of Michigan, 1975, including, in the case of a special or rescheduled meeting or a meeting secured for more than 36 hours, notice by posting at least 18 hours prior to the time set for the meeting.



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Brian Baker, Acting Chair  
Macomb County Public Works Chief Deputy

DATED: 02/15/22



**Candice S. Miller**

Public Works Commissioner  
Macomb County

To: Macomb Interceptor Drain Drainage District Board Members

CC: File

From: Stephen Downing, Construction & Maintenance Manager

Date: March 14, 2022

Subject: Construction Projects Status Updates for March 2022 Board Meeting

The following provides a status update for construction work performed within the Macomb Interceptor Drain Drainage District for the previous month.

### **Segment 5 Rehabilitation**

**Contractor:** Oscar Renda

**Engineering Consultant:** FK Engineering

#### **Project Description:**

The Segment 5 reach of the Romeo Arm Interceptor is approximately 8,300 linear feet; it runs along 15 Mile Road starting at the ITC Corridor and extends east to approximately Hayes Road. The first 7,000 linear feet is 11-foot diameter non-reinforced concrete pipe, and the next 1,300 linear feet is 8-foot diameter steel reinforced concrete pipe. The rehabilitation consists of debris removal, cleaning, and inspection of the pipe's invert. Next, HOBAS pipe will be used to slip line 7,000 linear feet of the 11-foot diameter sewer and the 1,300 linear feet section of 8-foot diameter pipe will be coated with a corrosion resistant geo-polymer spray applied coating. To facilitate this work, a new control structure and access shaft is under construction in the ITC Corridor. The new control structure will provide the contractor access to the sewer to facilitate the work and will also serve as a dewatering pump station to draw down the upstream water level in the sewer.

#### **Significant project tasks that have occurred over the past month:**

1. Continued development, review, and approval of the required construction submittals.
2. Ground dewatering well maintenance and monitoring.
3. Completed placement of the CS-12 Structure's concrete base slab. The base slab concrete placement statistics are as follows:
  - o The first truck arrived at 10AM and the last truck arrived at 1PM
  - o Approximately 6 trucks per hour

- 18 Trucks at 10 Yards per truck for a total of 180 Yards of concrete
  - The first truck arrived at 10AM and the last truck arrived at 1PM
  - 26 tons of steel
  - 360 tons of concrete
4. Continued preparation work prior to starting the spray-lining activity between Fontana and Hayes, including:
- Started power washing the Interceptor in preparation for spray-lining activities.
  - Construction and testing of the temporary by-pass pumping operation at 15 Mile & Hayes.
5. Placement of the concrete pad for the new MCC enclosure for the CS-12 Pumps.

**Construction Costs:**

	Date (if applicable)	
Original Contract Amount	10/21/2020	\$28,807,500.00
Current Contract Amount	2/28/2022	\$30,672,248.32
Total Spent to Date	2/28/2022	\$11,081,514.11
Remaining Budget	2/28/2022	\$19,590,734.21





*Figure 1 – Rebar Installation for the CS-12 Base Slab*

**OFFICE LOCATION:** 21777 Dunham Road, Clinton Township, Michigan 48036 • Phone: 586-469-5325 • Fax: 586-469-5933  
**ENGINEERING** • Phone: 586-469-5910 • Fax: 586-469-7693 ♦ **SOIL EROSION** • Phone: 586-469-5327 • Fax 586-307-8264



**OFFICE LOCATION:** 21777 Dunham Road, Clinton Township, Michigan 48036 • Phone: 586-469-5325 • Fax: 586-469-5933  
**ENGINEERING** • Phone: 586-469-5910 • Fax: 586-469-7693 ♦ **SOIL EROSION** • Phone: 586-469-5327 • Fax 586-307-8264



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*Figure 5 – Concrete Pump Truck*

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*Figure 6 - Aerial View of CS-12 Base Slab Concrete Placement*



Figure 7 - Aerial View of Concrete Pump Truck

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*Figure 8 - Finishing Concrete Base Slab in CS-12*



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## Phase II Grouting

**Contractor:** Doetsch Environmental Services, Inc.

**Engineering Consultant:** AEW

### **Project Description:**

The Phase II Grouting project was awarded to Doetsch Environmental during summer 2020. The work includes chemical grouting of the sewer and manholes where infiltration is present. The work is planned in all reaches of the system not included in the Segment 5 or portion of the Romeo Arm rehabilitated during the 2016 Interceptor Collapse. The main areas of work include the Romeo Arm along Garfield Road between 15 Mile and Clinton River Roads, the Garfield Interceptor between Clinton River and 21 Mile Roads, and the Lakeshore Interceptor between the Clintondale Pump Station at 15 Mile and Union Lake and Joy Boulevard in Harrison Township. The chemical grouting is aimed to stop all active infiltration within the system in advance of future rehabilitation and maintenance projects.

### **Significant project tasks that have occurred over the past month:**

1. The crew continued work in the Garfield Interceptor between M-59 and 21 Mile.
2. There is a change order presented to the Board this month to increase the budget for this project.
3. Based on recent grout quantities this current location should be completed by Mid-March.

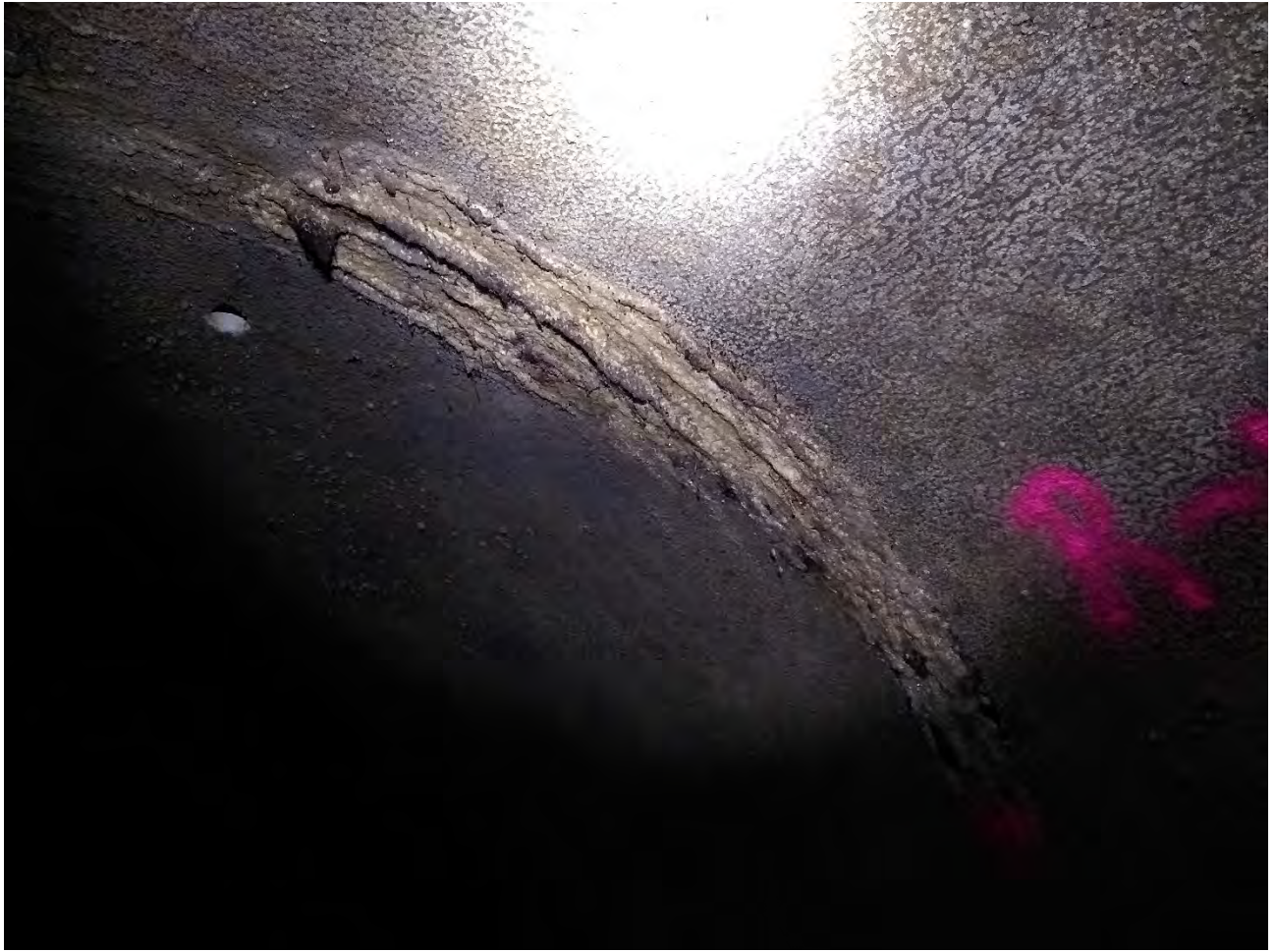
### **Construction Costs:**

	Date (if applicable)	
Original Contract Amount	6/24/2020	\$3,000,000.00
Total Spent to Date	2/28/2022	\$3,298,238.6
Remaining Budget	2/28/2022	\$(298,248.60)

\*The negative balance will be updated upon approval of the change order.



*Figure 10 - Typical Infiltration in this Area*



*Figure 11 - Typical Infiltration in this Area*

## Meter Facility Rehabilitation

**Contractor:** Weiss Construction

**Engineering Consultant:** HRC

### **Project Description:**

The project includes the rehabilitation of three sewerage meter facilities; includes removal and application of concrete surface repairs and protective coatings, televising, cleaning, and spray-lining the existing influent and effluent connecting sewers; rehabilitation existing adjacent sanitary manholes; improving access and safety features for maintenance personnel; and replacing electrical systems.

The sites, SY-S-1 and SY-S-2 are in Shelby Township and WA-S-1 is in Washington Township. The meter facilities are the point of transition of sewerage flow from the local systems into the MIDDD Interceptors. Each of the metering facilities provides the critical flow data required to allocate the billing apportionment for each of the MIDDD member communities.

The Shelby Township meter facilities, originally constructed by DWSD, have reached the end of their useful life and are need of rehabilitation. The MCPWO previously rehabilitated several of the older metering facilities in the system, which were also constructed by DWSD.

The Washington Township meter facility is currently owned by Washington Township, which is a unique situation in the MIDDD system. Typically, the MIDDD assumes ownership of the billing meter facilities, which includes operation and maintenance activity. As such, the MCPWO negotiated a transfer agreement with Washington Township to transfer ownership of this asset to the MIDDD. The two entities agreed to equitable cost sharing terms within the agreement.

The project was designed by Hubbell, Roth and Clark and the construction contract was awarded to Weiss Construction. Construction cost for the project is \$857,159.00 and work started in April 2021.

### **Significant project tasks that have occurred over the past month:**

1. The Contractor is finalizing the closeout documents.
2. The Owner, Engineer & Contractor conducted the punch list walk-thorough, the Contractor is performing the required work to fulfill the punch list.
3. The final balancing change order will be finalized in February for consideration during the April Board meeting.

### **Construction Costs:**

	Date (if applicable)	
Original Contract Amount	12/3/2020	\$857,159.00
Current Contract Amount	2/28/2021	\$863,168.85
Total Spent to Date	2/28/2021	\$770,291.64
Remaining Budget	2/28/2021	\$92,877.21

## Segment 6 Rehabilitation

**Contractor:** Ric-Man Construction

**Engineering Consultant:** FK Engineering

### **Project Description:**

The Segment 6 Rehab project includes the rehabilitation of these main elements:

1. Cleaning and slip-lining (Hobas) of the 5-foot diameter 15 Mile Interceptor from MH-01 at Garfield Road and 15 Mile to MH-04 approximately 2200 feet east along 15 Mile.
2. Cleaning and slip-lining (Hobas) the 1400 linear feet 11-foot diameter Romeo Arm Interceptor sewer between CS-3 on 15 Mile Road and CS-2 on Garfield north of 15 Mile Road.
3. Rehabilitation of the Meter Facility FR-S-1 on Garfield south of 15 Mile Road.
4. Rehabilitation and spray-lining of the CS-2 and CS-3 control structure facilities. These concrete structures have been damaged by H2S damage over time and need repair.
5. Installation of an air-jumper to be incorporated into the existing Biofilter facility. This is being done to address the high level of odor issues that have resulted over the years from the intersection of 15 Mile and Garfield.
6. Installation of a new gate control structure on the 15 Mile Interceptor. This will allow for the rehabilitation of the MH-01 structure and provide future storage options within that interceptor.

The project is scheduled to start in August 2021 and be completed in March 2023.

### **Significant project tasks that have occurred over the past month:**

1. The Contractor continues to develop and submit the required submittals to the Engineer & Owner for review.
2. Completed construction of the jacking frame to facilitate the HOBAS slip lining operation.
3. Started installation of the HOBAS pipe.
4. Completed drilling the drop holes for grouting the annular space between the existing concrete pipe and the HOBAS.

### **Construction Costs:**

	Date (if applicable)	
Original Contract Amount	5/1/2021	\$13,541,545.00
Change Order No. 1	8/1/2021	\$132,664.70
Total Spent to Date	2/28/2022	\$2,399,372.06
Remaining Budget	2/28/2022	\$11,274,837.64



*Figure 12 - Hoisting HOBAS into CS-13 Shaft*



*Figure 13 – Hoisting HOBAS into CS-13 Shaft*



*Figure 14 – Hoisting HOBAS into the CS-13 Shaft*





*Figure 15 – Hoisting HOBAS into Position for Slip-Lining*



*Figure 16 – Jacking HOBAS into the Interceptor*

## Interceptor Inspection Program

**Contractor:** Doetsch Environmental Services, Inc.

**Engineering Consultant:** Fishbeck

### **Project Description:**

The 2020 sewer inspection program was awarded to Doetsch Environmental Services in November 2020. The inspection program includes inspection of approximately 26 miles of sanitary sewer, 360 manholes and other aspects of the sanitary sewage infrastructure across multiple drainage districts, including the MIDDD.

The MIDDD portion of the inspection program includes 101,335 linear feet (19.25 miles) of pipe ranging in diameter from 24" to 132" and 145 manhole structures. Additionally, inspection of 8 junction chambers and 8 Drop Shaft/Connecting sewers will be performed.

The inspection interval for the entire system is based on a 3-year cycle, where non-reinforced concrete pipe is inspected every 3 years and reinforced concrete pipe is inspected every 6 years. The 2020 inspection program is the largest ever performed by the Macomb County Public Works Office. The project started in May 2021 and is expected to be completed in May of 2022.

### **Significant project tasks that have occurred over the past month:**

1. The Contractor did not submit a pay application for the months of December, January, or February.
2. The Contractor completed inspection of Lakeshore Interceptor.
3. The Contractor has approximately 1000LF of the Romeo Arm Interceptor to inspect.
4. The Consultant is reviewing the data and preparing inspection reports.
5. There have been no significant areas of concern observed thus far.
6. The Owner's Representatives, Engineering Consultant and Contractor are working to coordinate completion of the remaining areas to be inspected.

### **Construction Costs:**

	Date (if applicable)	
Original Contract Amount	1/19/2021	\$280,034.00
Total Spent to Date	11/1/2021	\$62,703.85
Remaining Budget	11/1/2021	\$217,330.15

**\*This Table reflects the MIDDD costs only.**



# 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."*



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# Segment 5 Rehabilitation Timeline

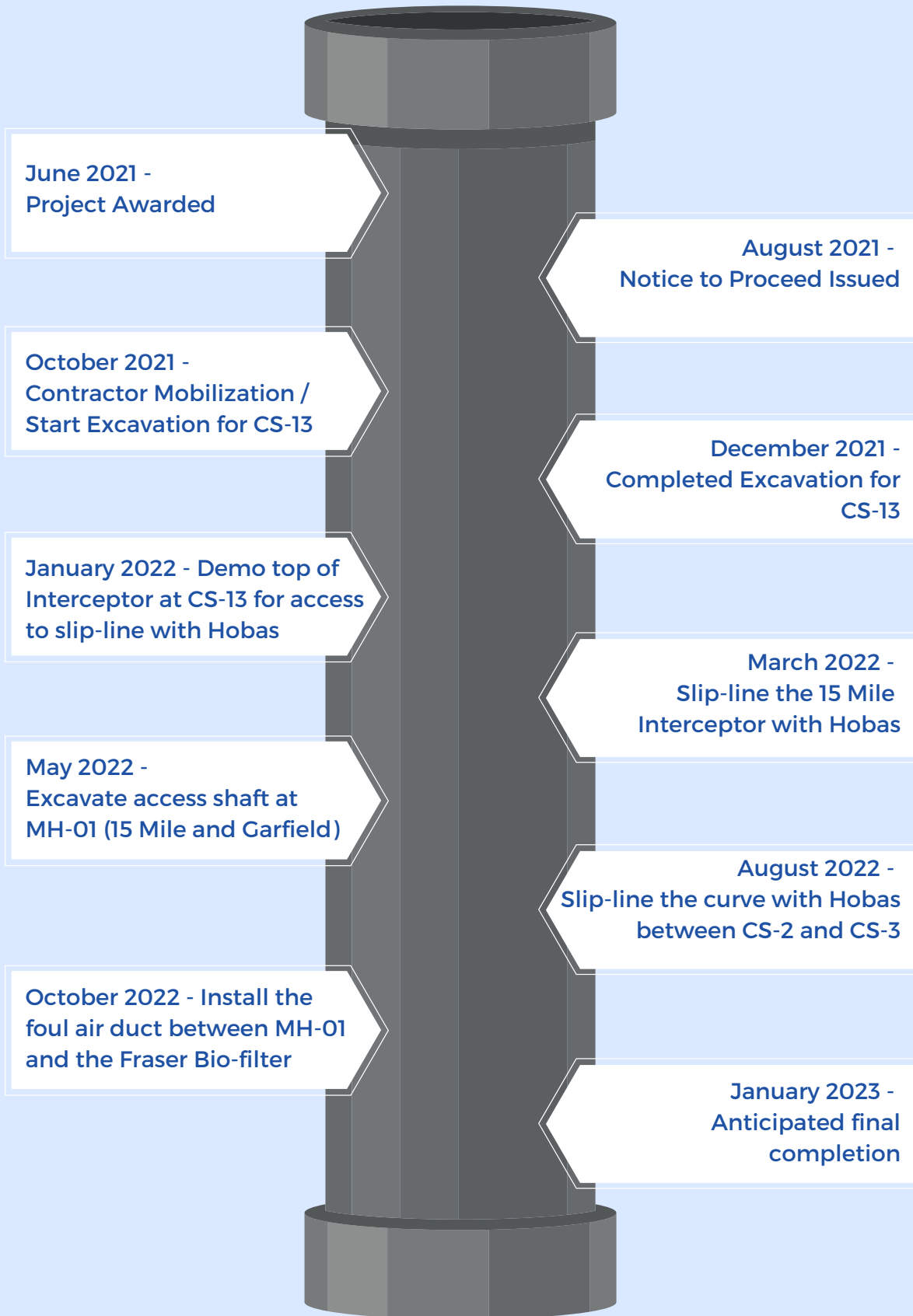
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# Segment 6 Rehabilitation Timeline

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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 (arrears 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](http://mca.macombgov.org/MCA-ES-ActionCenters)

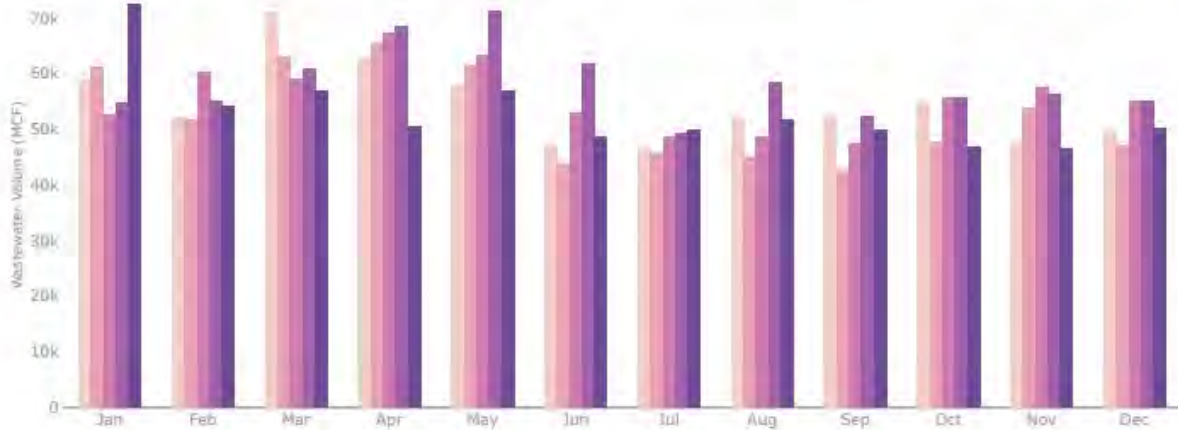
## FIND YOUR LOCAL ACTION CENTER

**For cities in blue...**  
Macomb Community Action  
Central Action Center  
1296 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 48099  
P: (586) 759-9150  
F: (586) 759-9156

[MCA.MACOMBGOV.ORG](http://MCA.MACOMBGOV.ORG)

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

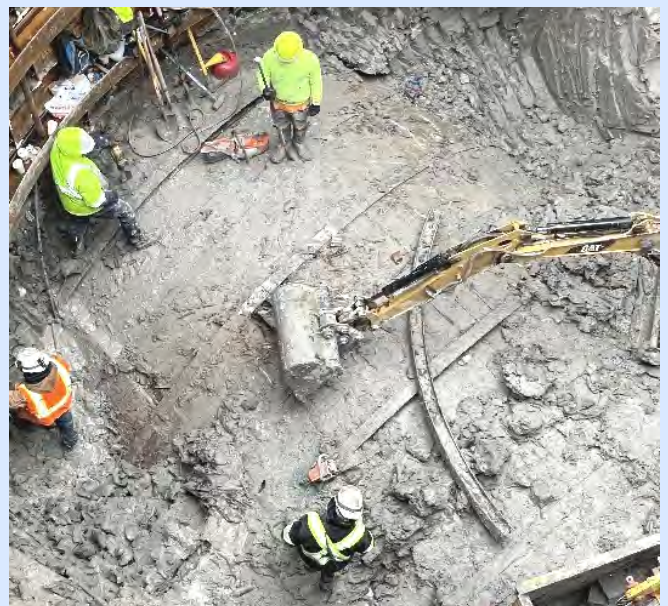
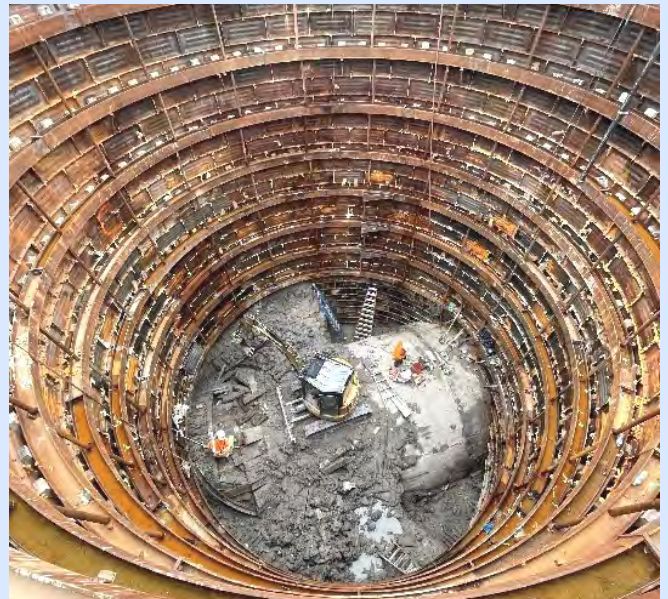
Major capital improvements continue at the Northeast Sewage Pump Station in Detroit as approved and directed by the Oakland-Macomb Interceptor Drain Drainage District board. OMID is an inter-county district, comprised of Macomb County Public Works Commissioner Candice S. Miller, Oakland County Water 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

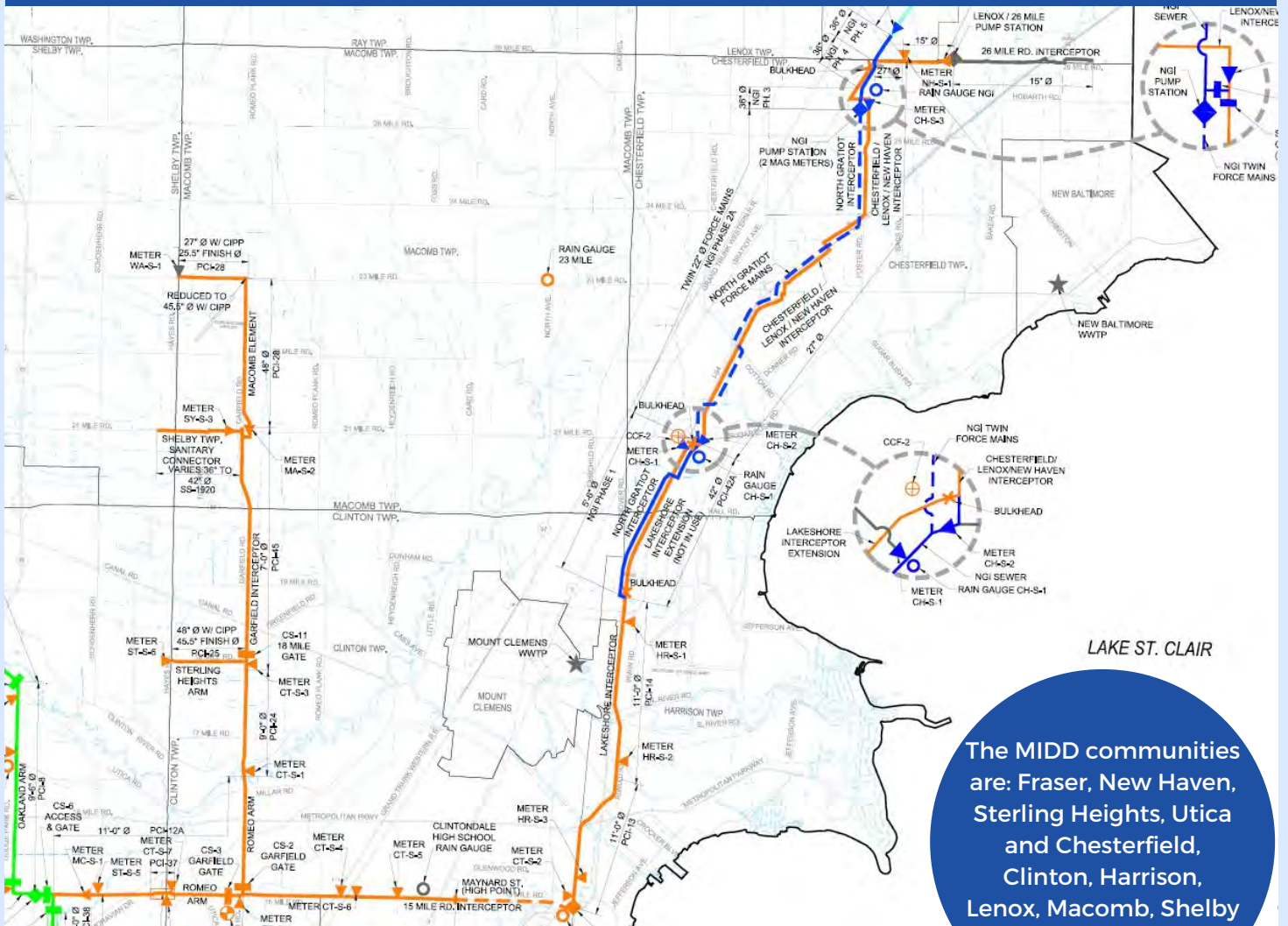


15 Rain Gauges



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!



## **Macomb Interceptor Drain Drainage District FY 2023 Budget & Charges Executive Summary**

March 14, 2022

The proposed Macomb Interceptor Drainage District (MIDD) budget for the fiscal year beginning July 1, 2022 totals \$93.1 million. The budget increased only \$2.6 million or 2.9%. For the fourth consecutive year, average charge adjustments have remained less than 3%.

The Great Lakes Water Authority (GLWA) and Oakland Macomb Interceptor District (OMID) costs account for two-thirds of the total MIDD budget. GLWA passed on 3.5% charge increase which includes a 2% increase on suburban communities for growing unpaid Highland Park bills. OMID costs rose 3.0% largely due to increased operations and maintenance costs, partially offset by lower debt payments on the 2019 one-time payment to the GLWA. Continued savings from the maintenance agreement with GLWA allows OMID to fund \$100 million of repairs to the Northeast Pump Station (NESPS) and Northeast Interceptor East Arm (NIEA). The second \$15 million OMID bond to complete the repairs is budgeted and scheduled for later this year.

The MIDD-only costs account for one-third of the total budget. MIDD costs only rose by 1.8%. With several one-time project costs dropping off, next year's budget funds several needed MIDD projects without incurring debt including:

- \$3.55 million toward interceptor cleaning and sediment removal.
- \$3.28 million toward the construction of four odor & corrosion control facilities.
- \$1.6 million for additional drop shaft rehabilitation.
- \$1.0 million for additional interceptor preventative maintenance grouting repairs.

The budget includes funding for the Segment 5 and 6 SRF debt payments. We have used the sinkhole lawsuit proceeds and existing reserves to lower the amounts borrowed. As possible State and County ARP funds may be used toward these projects as well, we continue to include the projected debt payments in our rates until the debt payment schedules are finalized.

The average sewer charge adjustment to the 11 MIDD communities is 2.9%. There is a slight charge variability among the communities due to sewer flow volumes and as some communities had pre-paid OMID debt. Sewer flow volumes are now based on an 8 year average. As both GLWA and OMID are moving to a 10-year average flow, we plan to add a year annually in order to match their sewer charge methodologies to reduce charge volatility.

Attached is a more detailed budget and charge information which will explain the expenditures by cost center. Should you have any questions, please do not hesitate to contact the Macomb County Public Works Office.



**MIDD Budget  
Total Sewer Charges**

<b>Cost Category</b>	<b>2021/2022 Budget</b>	<b>2022/2023 Budget</b>	<b>Change</b>	<b>% Change</b>	<b>% of Total</b>
GLWA-OMID	46,272,712	47,925,912	1,653,200	3.6%	51.5%
GLWA CSO Program	1,011,713	1,024,180	12,467	1.2%	1.1%
<b>Total GLWA</b>	<b>47,284,425</b>	<b>48,950,092</b>	<b>1,665,667</b>	<b>3.5%</b>	<b>52.6%</b>
OMID Capital	536,806	535,200	(1,606)	-0.3%	0.6%
OMID O&M	3,290,209	3,823,713	533,504	16.2%	4.1%
OMID New Debt (NESPS & NIEA)	262,850	593,905	331,055	125.9%	0.6%
OMID Existing Debt	8,328,958	7,837,639	(491,319)	-5.9%	8.4%
<b>Total OMID</b>	<b>12,418,823</b>	<b>12,790,457</b>	<b>371,634</b>	<b>3.0%</b>	<b>13.7%</b>
<b>Subtotal GLWA and OMID</b>	<b>59,703,248</b>	<b>61,740,549</b>	<b>2,037,301</b>	<b>3.4%</b>	<b>66.3%</b>
MIDD Existing Debt	14,346,755	14,231,450	(115,305)	-0.8%	15.3%
MIDDD New Debt (Seg 5 & 6 Included in rates)	0	0	0	0.0%	0.0%
MIDDD O&M/Charge Required Revenue	16,476,210	17,159,080	682,870	4.1%	18.4%
<b>Total MIDDD</b>	<b>30,822,965</b>	<b>31,390,530</b>	<b>567,565</b>	<b>1.8%</b>	<b>33.7%</b>
<b>Total Budget</b>	<b>90,526,213</b>	<b>93,131,079</b>	<b>2,604,866</b>	<b>2.9%</b>	<b>100%</b>

MIDDLE COMMUNITIES  
PRIOR YEAR COMPARISON

Cost Category	2021/2022 Charge	2022/2023 Charge	Difference	% Change	Page #
1) GLWA-OMID	46,272,712	47,925,912	1,653,200	3.6%	2
2) GLWA CSO Program	1,011,713	1,024,180	12,467	1.2%	2
3) <i>Sub Total GLWA</i>	47,284,425	48,950,092	1,665,667	3.5%	
4) OMID Capital Improvements	536,806	535,200	(1,606)	-0.3%	2
5) OMID O&M	3,290,209	3,823,713	533,504	16.2%	2
6) <i>Sub Total OMID</i>	3,827,015	4,358,913	531,898	13.9%	
7) <b>MIDDD O&amp;M/Charge Required Revenue</b>	<b>16,476,210</b>	<b>17,159,080</b>	<b>682,870</b>	<b>4.1%</b>	<b>2,4</b>
8) Use of Reserve	0	215,000	215,000	0.0%	
9) <i>Sub Total</i>	67,587,650	70,468,085	2,880,435	4.3%	
10) OMID Existing Debt	8,328,958	7,837,639	(491,319)	-5.9%	3
11) OMID New Debt (NESPS & NIEA)	262,850	593,905	331,055	125.9%	4
12) MIDDD Sag 5 & 6 Debt (Included in rates)	0	0	0	0.0%	3
13) MIDDD Existing Debt	14,346,755	14,231,450	(115,305)	-0.8%	3
14) <i>Sub Total Debt(See page 3)</i>	22,938,563	22,662,994	(275,569)	-1.2%	
<b>TOTAL</b>	<b>90,526,213</b>	<b>93,131,079</b>	<b>2,604,866</b>	<b>2.9%</b>	

Communities	2021/2022 Charge	2022/2023 Charge	Difference	% Change
Chesterfield Twp	7,235,290	7,499,038	263,748	3.6%
Clinton Twp	18,755,018	19,326,647	571,629	3.0%
Fraser	3,737,303	3,849,718	112,415	3.0%
Harrison Twp	5,647,905	5,765,414	117,509	2.1%
Lenox Twp	1,581,946	1,634,718	52,772	3.3%
Macomb Twp	12,149,270	12,673,124	523,854	4.3%
New Haven	1,111,950	1,131,538	19,588	1.8%
Shelby Twp	8,596,608	8,824,434	227,826	2.7%
Sterling Heights	27,687,687	28,303,644	615,957	2.2%
Ulita	1,482,196	1,511,074	28,878	1.9%
Wash Twp	2,541,040	2,611,730	70,690	2.8%
<b>TOTAL</b>	<b>90,526,213</b>	<b>93,131,079</b>	<b>2,604,866</b>	<b>2.9%</b>

MACOMB INTERCEPTOR DRAIN DRAINAGE DISTRICT  
 2022-2023 SEWER CHARGES  
 Effective July 1, 2022

	Total Annual	Macomb County %	Allocated to Macomb Cty	Monthly	Eight Year Rolling Average per actual consumption 7/1/2013-6/30/2021										Total	
					Chestertown Twp	Clinton Twp	Fraser Twp	Hammon Twp	Lenox Twp	Macomb Twp	New Haven Twp	Shelby Twp	Stirling Heights	Ulica Twp		Wash Twp
<b>OMIDD Charges to MIDD</b>					7,4212%	21,2122%	4,1667%	6,3461%	1,1179%	14,0617%	0,9255%	9,7911%	30,6812%	1,6170%	2,7596%	100,00%
GLWA-OMID	70,241,700	66.23%	47,925,912	3,993,826	847,177	156,410	253,451	44,646	561,569	32,968	391,098	1,225,354	64,660	110,214	3,693,626	
GLWA CSO Program	1,692,300	60.52%	1,024,180	85,348	6,334	18,104	3,566	5,416	12,001	705	8,367	26,166	1,380	2,355	85,348	
GLWA Sub Total	71,934,000		48,950,092	4,079,174	302,723	169,966	258,967	45,600	573,600	33,673	399,395	1,251,540	65,860	112,569	4,079,174	
OMID Capital Improvements	800,000	66.90%	535,200	44,600	3,310	1,868	2,830	499	6,272	388	4,367	13,684	721	1,231	44,600	
OMID O&M	5,604,150	68.28%	3,823,713	318,643	23,648	67,592	13,276	20,221	3,562	44,807	2,630	31,199	97,763	5,152	6,793	
OMID Sub Total	6,404,150		4,358,913	363,243	26,968	77,062	15,134	23,061	4,061	51,079	2,998	35,566	111,447	5,873	10,024	
Total GLWA and OMID Charges(see Exhibit A)	78,338,150		53,308,005	4,442,417	323,691	942,333	185,100	281,918	48,661	624,679	36,671	454,961	1,362,987	71,833	122,593	
Stormwater Pump Station O&M	131,000	100.00%	131,000	10,917	2,334	1,917	0	4,593	0	0	0	0	2,063	0	0	
Segment 5 and Segment 6 SRF Debt(Pg 17)	1,775,000	100.00%	1,775,000	147,916	10,796	31,506	6,068	9,498	1,575	20,625	1,220	14,552	45,622	2,382	4,082	
MIDD O&M/Charge Required Revenue(pg 4)	15,253,080	100.00%	15,253,080	1,271,080	94,329	289,625	52,962	80,664	14,209	178,737	10,483	124,454	389,866	20,554	35,077	
MIDD Sub Total	17,159,080		17,159,080	1,429,923	107,459	303,048	59,020	94,745	15,784	199,362	11,713	139,006	437,691	22,936	39,159	
Total	95,497,230		70,469,095	5,872,340	437,140	1,245,391	244,120	376,563	65,445	824,041	48,394	573,967	1,800,678	94,769	161,752	
O&M Total	5,245,680		4,944,572	2,929,440	4,519,966	785,340	9,896,493	560,609	6,887,605	21,608,137	1,137,229	1,941,024	70,468,065			
Debt Total	2,253,368		4,382,075	920,278	1,245,458	849,378	2,784,631	550,929	1,936,829	6,695,507	373,845	670,706	22,662,994			
Grand Total	7,499,048		19,326,647	3,849,718	5,765,414	1,634,718	12,673,124	1,131,538	8,824,434	28,303,644	1,511,074	2,611,730	93,131,079			

DEBT WORKSHEET  
OMID and MIDD

MIDD 2022-2023 DEBT WORKSHEET

Not Part of Monthly Invoice. Will be invoiced separately every 6 months  
Does not include paying or calculation agent fees

MIDD #	Principal	Interest	Interest Rebate	Total	Chesterfield Twp.	Clinton Twp	Fraser	Harr Twp	Lnx Twp	Macomb Twp	New Haven Twp	Shelby Twp	St. Hgts	Utica	Wash Twp	Total
MIDD CWRF #5368-01	690,100	171,946	-	862,046	66,008	188,241	38,899	50,241	4,216	113,062	9,004	79,745	276,024	15,549	21,057	862,046
OMI 2019(S4,510,000) Refund of Series 2010B	195,700	33,450	-	229,150	17,549	50,047	10,342	13,358	1,121	30,059	2,394	21,202	73,396	4,134	5,598	229,150
OMI 2014A	235,754	100,618	-	336,372	25,756	73,452	15,179	19,604	1,645	44,117	3,513	31,117	107,705	6,067	8,217	336,372
OMI-2011 \$25,530,000 SRF 5368-02	598,414	198,652	-	797,066	78,418	223,633	46,213	59,698	5,008	280,375	10,697	0	327,920	18,472	25,016	797,066
OMI-2013 SRF 5368-03	1,511,474	428,596	-	1,939,990	163,688	468,807	96,454	124,591	10,466	280,375	22,328	0	664,484	36,556	52,219	1,939,990
OMI 2020 NESPS and NIEA(\$7,215,000)	1,243,320	1,644,271	-	2,787,591	152,550	600,551	115,571	176,328	26,956	400,311	23,231	282,125	862,908	46,826	80,224	2,787,591
OMI 2019(S5,205,000) Acquisition rights & contribution to GLWA	421,050	23,525	-	444,575	0	0	31,897	49,895	7,440	0	0	77,868	243,681	12,924	22,142	444,575
OMI SAW Loan Project 2001-01	313,220	129,559	-	442,779	0	144,213	29,801	39,490	0	0	6,898	0	211,465	11,912	0	442,779
OMI 2022 NESPS and NIEA(\$14,310,000)-PROJECTED	1,354,570	239,335	-	1,593,905	44,075	125,980	24,746	37,690	6,639	83,513	4,903	58,150	182,217	9,603	16,389	1,593,905
Refunded Clintondale Pump Station Rehab	1,155,000	663,000	-	1,818,000	139,204	396,990	82,037	105,955	8,894	238,442	18,987	168,176	582,116	32,791	44,408	1,818,000
NGI 2015 Refunding District Apportionment 37.9992%	368,592	193,876	-	562,468	43,069	122,824	25,381	32,781	2,752	73,771	5,874	52,032	180,100	10,145	13,739	562,468
NGI Bond Series 2010 \$16,865 million District Appt 4.6529%	30,476	29,780	(11,564)	48,692	285,107	884,786	175,680	243,501	31,803	575,484	33,780	416,528	1,325,285	75,481	117,184	4,174,600
MIDD 2017A Sinkhole Bond	1,635,000	2,539,600	-	4,174,600	13,124	39,307	7,959	10,259	1,019	24,406	1,687	17,348	56,225	3,395	4,706	4,174,600
MIDD SRF 5624-01-Macomb Element	130,000	49,455	-	179,455	0	0	0	0	0	0	0	0	0	0	0	179,455
MIDD SRF Segment 5 Projected(5683-01)	2,614,344	2,215,166	-	4,829,510	389,795	1,054,601	217,932	281,469	23,626	833,419	50,439	446,759	1,546,350	87,110	117,970	4,829,510
MIDD-2017 Refunding(2010) Appt 87.2803%	11,495,054	8,560,759	(11,564)	20,044,249	1,412,072	4,382,075	920,278	1,245,458	131,814	2,503,355	194,224	1,655,553	6,695,507	373,845	530,068	20,044,249
<b>Totals-Fixed</b>																

Individual Debt Service(Negotiated)	Principal	Interest	Interest Rebate	Total	Chesterfield Twp.	Clinton Twp	Fraser	Harr Twp	Lnx Twp	Macomb Twp	New Haven Twp	Shelby Twp	St. Hgts	Utica	Wash Twp	Total
NGI 2015 Refunding Remaining Apportionment 62.0008%	601,408	316,398	-	917,744	585,124	0	0	0	214,554	0	118,096	0	0	0	0	917,744
NGI Bond Series 2010 Remaining Apportionment 85.3471%	624,524	610,258	(236,971)	997,811	256,162	0	0	0	503,010	0	238,639	0	0	0	0	997,811
MIDD-2017 Refunding(2010) Remaining Appt 12.7097%	380,656	322,534	-	703,190	841,286	0	0	0	717,564	281,276	356,705	281,276	0	0	140,638	703,190
<b>Totals-Negotiated</b>	<b>1,606,588</b>	<b>1,249,128</b>	<b>(236,971)</b>	<b>2,618,745</b>	<b>2,253,356</b>	<b>4,382,075</b>	<b>920,278</b>	<b>1,245,458</b>	<b>849,378</b>	<b>2,784,631</b>	<b>550,929</b>	<b>1,936,629</b>	<b>6,695,507</b>	<b>373,845</b>	<b>670,706</b>	<b>22,662,994</b>
<b>TOTAL by COMMUNITY</b>																

1) Total OMID and MIDD  
OMID 8,431,544  
MIDD 14,231,450  
22,662,994

INFORMATIONAL - ONLY-NOT INCLUDED IN MIDD BUDGET CALCULATION

Principal	Interest	Interest Rebate	Total	Chesterfield Twp.	Clinton Twp	Fraser	Harr Twp	Lnx Twp	Macomb Twp	New Haven Twp	Shelby Twp	St. Hgts	Utica	Wash Twp	Total
NGI Lenox Local Refunding	605,000	327,250	-	932,250	932,250	0	0	0	0	0	0	0	0	0	932,250
Refunded NGI 2006-Phase 5	115,000	76,500	-	191,500	128,451	0	0	0	0	63,049	0	0	0	0	191,500
<b>Totals-Informational</b>	<b>720,000</b>	<b>403,750</b>	<b>-</b>	<b>1,123,750</b>	<b>1,060,701</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>63,049</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1,123,750</b>
<b>Total</b>					<b>1,910,079</b>					<b>613,978</b>					<b>22,662,994</b>

**MIDDD**  
**Operations Maintenance**  
**Budget to Actual**

Description	Page #	Actual		Projected 6/30/2022	Budget		% Change
		2020/2021	12/31/2021		2021/2022	2022/2023	
<b>EXPENSE</b>							
Public Works Wastewater Personnel Cost	5	1,391,566	807,329	1,630,830	1,702,960	1,889,760	11.0%
Office Operations/Insurance	6	63,474	63,474	339,390	332,250	343,100	3.3%
SCADA	7	57,575	50,426	185,360	280,490	461,990	64.7%
Sewer Systems Projects/Studies/Eng. Design	8	14,437,189	5,259,013	19,566,080	19,669,030	16,917,940	-14.0%
Legal Services	9	48,313	5,231	30,230	150,000	75,000	-50.0%
Clintondale PS O&M	10	349,792	145,724	331,720	580,000	870,000	50.0%
NGI O&M	11	96,708	60,321	170,110	225,000	307,500	36.7%
Meters O&M	12	136,061	16,599	133,800	190,970	228,400	19.6%
Control Structures and Pump Station O&M	13	9,051	4,027	46,230	216,000	281,370	30.3%
Biofilter O&M	14	17,679	20,864	34,620	26,000	25,500	-1.9%
Contribution Life Cycle Reserve	7,10,11,13,14	171,700	171,700	171,700	171,700	184,300	7.3%
Interceptor O&M	15	86,149	32,360	79,000	1,738,450	9,898,300	469.4%
Stormwater Pump Stations	16	234,250	45,500	91,000	91,000	131,000	44.0%
Sewage Disposal Charges - Mt. Clemens		194,998	95,828	191,660	200,000	200,000	0.0%
Debt Service -SRF and Revenue Bonds	17	1,784,523	840,085	1,680,170	1,680,170	2,458,140	46.3%
<b>Total</b>		<b>19,421,047</b>	<b>7,618,481</b>	<b>24,681,900</b>	<b>27,254,020</b>	<b>34,272,300</b>	<b>25.8%</b>

Description	Page #	Actual		Projected 6/30/2022	Budget		% Change
		2020/2021	12/31/2021		2021/2022	2022/2023	
<b>REVENUE</b>							
Reimbursements	18	173,740	371,014	386,020	200,000	225,000	12.5%
Settlements	18	12,500,000	0	0	100,000	100,000	0.0%
Washington Twp Meter Project	18	0	0	38,599	47,470	0	(47,470)
Grant/SRF Funding	18	366,128	795,957	1,345,957	0	0	0.0%
MIDDD O&M/Charge Required Revenue	2	13,476,204	8,238,105	16,476,210	16,476,210	17,159,080	4.1%
Carryforward	18	0	0	0	10,370,340	16,523,220	6,152,880
Use of SCADA Reserve	18	52,099	15,268	35,000	0	215,000	215,000
Interest		26,568,171	9,420,344	18,281,786	60,000	50,000	(10,000)
<b>Total</b>		<b>37,683,656</b>	<b>10,724,482</b>	<b>30,647,265</b>	<b>10,724,482</b>	<b>14,482,975</b>	<b>25.8%</b>

Description	Page #	Actual		Projected 6/30/2022	Budget		% Change
		2020/2021	12/31/2021		2021/2022	2022/2023	
<b>Additional Notes</b>							
1) Broken out as follows:							
SCADA Life Cycle		212,905		251,605	252,471	87,905	
Clintondale PS Life Cycle		450,000		525,000	525,000	600,000	
NGI Life Cycle		180,000		210,000	210,000	240,000	
CS-3 Life Cycle		15,000		20,000	20,000	25,000	
Biofilter Life Cycle		138,000		161,000	161,000	184,000	
<b>Life Cycle Sub-Total</b>		<b>995,905</b>		<b>1,167,605</b>	<b>1,168,471</b>	<b>1,136,905</b>	
Surplus MIDDD Acquisition(2010 Bond)-Use for Segment 5		-	-	-	-	-	
Surplus 2016 sinkhole project(Used for Segment 5)		-	-	-	-	-	
Debt Reserve		-	2,231,651	-	-	2,002,601	
Emergency Reserve <sup>(2)</sup>		10,618,979	10,724,789	9,556,011	11,343,469	11,343,469	
Carryforward		26,068,772	see page 18	16,523,220	22,870,340	16,523,220	
Spending of Carryforward		-	-	(22,870,340)	(16,523,220)	-	
<b>TOTAL RESERVES</b>		<b>37,683,656</b>	<b>10,724,482</b>	<b>30,647,265</b>	<b>10,724,482</b>	<b>14,482,975</b>	
Non Committed Reserve(Excludes life cycle and carryover)		10,618,979	10,724,789	9,556,011	11,343,469	11,343,469	

2) Does not reflect the decrease in reserves that will happen until we possibly receive ARPA and SRF reimbursement for Segment 5 & 6.

**Public Works Wastewater Disposal Division  
Personnel Cost**

Position	Number of Positions	BUDGET 2021/2022	BUDGET 2022/2023	NOTES
Operation & Flow Manager	1	97,280	100,222	
50% Charged to other drainage districts <sup>(1)</sup>		(48,640)	(50,111)	
Construction and Maint Manager	1	97,280	100,222	
WW Eng II/Construction Engineer(Added 0.5 FTE for FY 23)	3.5	257,180	298,363	
50% charged to other drainage districts (Wagner and Rozycki) <sup>(1)</sup>		(84,670)	(90,504)	
Wastewater Field Supervisor	1	71,360	70,360	
SCADA Specialist	1	80,480	80,480	
SCADA Operator-FT(Was PT in prior years)	1	37,380	64,928	
50% charged to other drainage districts(Welser and Schmitt)-SCADA <sup>(1)</sup>		(58,930)	(72,704)	
Senior Asset Mgmt Technician(Hockman <sup>(1)</sup> )	0.5	32,270	33,907	
GIS Technician Senior(Contesti)	1	72,760	74,923	
Community Services Coordinator-(Vacant)	1	61,900	69,081	
GIS Specialist/Engineering Tech-(Cakal <sup>(2)</sup> )	0.5	26,190	26,975	
Wastewater Field Operator	3	151,270	155,840	
Drain Account Specialist	1	47,250	48,672	
Incentive Pay, P.E.		2,400	3,300	
1/3 Admin support from GF(Candice,Brian,Dan,Norb,Emily)	1.65	176,340	179,552	
	<b>17.15</b>	<b>1,019,100</b>	<b>1,093,506</b>	
Overtime		125,000	200,000	
Standby Pay		22,000	22,000	
Longevity		2,400	1,800	
	Subtotal	149,400	223,800	
Fringe Benefits		586,200	639,095	
50% charged to other drainage districts <sup>(1)</sup>		(75,240)	(90,641)	
Net Fringe Benefits	Subtotal	510,960	548,454	
Accounting Support Staff	Subtotal	1,679,460	1,865,760	
		23,500	24,000	
		<b>1,702,960</b>	<b>1,889,760</b>	

**NOTES:**

- 1) MIDDD is responsible for 50% of the cost. The remaining 50% is charged to the other drainage districts.
- 2) MIDDD is responsible for 50%, and the other 50% is shared with the general fund.

**MIDDD  
Office Operations**

MIDDD OFFICE OPERATIONS	2021/2022 BUDGET	2022/2023 BUDGET	NOTES
Bank Fees	100	100	Wire fees for incoming deposits and payment of various invoices
Command Center	500	0	
Dues, Membership & Subscriptions	4,500	5,000	
Equipment Repair & Maintenance	10,000	10,000	
Equipment	37,650	40,000	The current vehicle for this SCADA Operator is a 2007 Explorer. This vehicle has reached the end of its useful life and is due for a replacement. Truck = \$30,000 Misc equipment = \$10,000
Gasoline(County)	12,000	15,000	
Internal Service Cost(County)	25,000	30,000	Cross charge from county for telephone, car insurance, and building insurance
Insurance	210,000	210,000	Liability and underground coverage
Office Supplies	600	500	
Operating Supplies	2,000	2,000	
Personnel-Non WWS Employees	9,000	9,000	Charge for Chapaton personnel working on MIDDD assets
Postage & Shipping	100	100	
Training	5,000	5,000	
Uniforms	1,800	1,800	
Weather Radar	3,000	3,100	
Telephone	7,000	6,500	
Vehicle Maintenance	4,000	5,000	
<b>Total</b>	<b>332,250</b>	<b>343,100</b>	

SCADA

SCADA	2021/2022 BUDGET	2022/2023 BUDGET
SCADA as needed <sup>(1)</sup>	32,250	57,000
SCADA Server Replacement <sup>(2)</sup>	0	215,000
Meter Pit Control Logic Cleanup <sup>(3)</sup>	0	20,000
MIDD Billing Meter Battery Replacements <sup>(4)</sup>	1,080	2,160
SCADA NGI Comcast Integration <sup>(5)</sup>	0	20,000
MIDD/OMID battery replacements for 4 of the billing meter sites	620	720
Spare parts for MIDD control panels	7,500	7,500
VMWare Software Support Annual Renewal	5,130	5,130
Wonderware Software Support Annual Renewal	11,200	11,400
VEEAM support Annual Renewal	1,540	1,540
Comcast Business Service	11,590	13,990
Cell modem service (Verizon) 6 units <sup>(6)</sup>	8,640	15,960
Cell modem service (Sprint) 9 units <sup>(7)</sup>	1,680	0
Dell Hardware Support Annual Renewal <sup>(8)</sup>	7,720	7,700
<b>Total New Projects</b>	<b>88,950</b>	<b>378,100</b>
Obsolete Wireless backhaul replacement links <sup>(9)</sup>	21,500	21,500
3.6GHz Replacement Radios at MPSCS2705 <sup>(10)</sup>	93,440	18,690
SolarWinds - Network Management Software <sup>(11)</sup>	12,900	12,900
Fiber Optic Improvements <sup>(12)</sup>	21,500	21,500
Security Servers replacement in MIDD <sup>(13)</sup>	20,000	0
Firewall Hardware Design/Config <sup>(14)</sup>	17,200	4,300
Training - Radios/Switches/VMWare <sup>(15)</sup>	5,000	5,000
<b>Total Carryover Projects</b>	<b>191,540</b>	<b>83,890</b>
<b>TOTAL ALL PROJECTS</b>	<b>280,490</b>	<b>461,990</b>
Future costs of upgrade-Life Cycle <sup>(16)</sup>	38,700	51,300

See page 7a for notes



## SCADA NOTES

- 1) Increase activity for SCADA programming, network and server maintenance.
- 2) Current SCADA servers and associated equipment at Clintondale PS and Chapaton PS are currently 7 years old and have reached the end of their useful life. This system is critical to operations across all drainage districts and the cost will be split per the established allocation. Current total estimate is \$500,000. The plan is to utilize life-cycle funds that have been collected since the last replacement in 2015. This only reflects MIDDD portion.
- 3) Standardize all programming across all of the MIDDD billing flow meters. The current programming logic was put in without standards in place and requires more time to troubleshoot anything. This will also make any upgrades or replacements in the future less costly.
- 4) Increase in number of batteries being replaced.
- 5) NGI pump station currently has radio and cell modem for SCADA communications. The radio backbone is slowly being taken offline so we need to bring a redundant communication link into this site. Due to the location it is approximately \$20,000 to bring in a new Comcast line.
- 6) Radios are being converted to cell.
- 7) No longer used
- 8) The "lifecycle" equipment is still in good shape so it is more cost effective to extend the warranty rather than replacement. This comes with 24x7 support and free component replacement in the event of hardware failure. After purchase of the new equipment, this will become a three year renewal.
- 9) Several critical wireless links utilize 10-year old technology and can no longer be purchased. Since they have reached the end of their useful life, they are in need of replacement
- 10) Converted these sites to Cellular. Modems are functional, but still have ~ 24 hours from Colville to finish proper installation.
- 11) We currently own the base version of this software. The software support has not been kept up and this is to upgrade the software to a business format. This upgraded platform will help streamline communications support for our staff.
- 12) This will be used to start setting up redundant links for our main SCADA servers. We have had a few issues since the County fiber was installed that when it goes down we completely lose backup abilities between the two servers.
- 13) Security camera servers have reached the end of their useful life and are in need of replacement. Completed
- 14) The existing firewalls are being dual purposed to act as a security appliance and as an OSPF router. The routing capabilities of the existing firewalls are very limited and often times will cause outages simply due to their poor routing capabilities.
- 15) Training for SCADA personnel as recommended by the Tetra Tech evaluation
- 16) Used for future server upgrades

SYSTEM PROJECTS/STUDIES/CONSULTING

Project #	System Projects/Studies/Consulting	2021/2022 BUDGET	2022/2023 BUDGET
	Replenish reserve from CPS refunding-Year 3 <sup>(1)</sup>	618,680	618,680
	Drop Shaft Rehab Design <sup>(2)</sup>	0	1,600,000
	GLWA Assistance	40,000	30,000
	Metco as needed <sup>(3)</sup>	0	75,000
	Annual Meter Dye Testing <sup>(4)</sup>	0	50,000
	Data Review-Aquasight <sup>(5)</sup>	0	58,000
	As Needed Engineering <sup>(6)</sup>	0	250,000
	General Construction/Engineering Contingency-All projects <sup>(7)</sup>	0	225,000
	Odor and Corrosion Construction/CCA <sup>(8)</sup>	0	3,280,000
	<b>Total New Projects</b>	<b>658,680</b>	<b>6,186,680</b>
50	As Needed Applied Science	25,000	25,000
	As Needed FK Engineering	60,000	0
	As Needed Fishbeck	50,000	0
	As Needed Metco	90,000	60,000
	As Needed Wade Trim	70,000	0
	General Construction/Engineering Contingency-All projects <sup>(7)</sup>	225,000	225,000
	Repair work stemming from inspection repair program/Phase III Grouting <sup>(12)</sup>	3,200,000	0
	Level Sensors/Pressure/H2S-Meters <sup>(9)</sup>	214,200	214,200
	Meter Dye Testing	38,600	0
	Odor and Control-Construction <sup>(9)</sup>	7,000,000	7,010,000
	Odor and Corrosion Design <sup>(10)</sup>	375,260	0
	Phase II Grouting <sup>(11)</sup>	2,000,000	0
	Phase III Grouting <sup>(12)</sup>	325,000	0
	Segment 6 Construction Administration <sup>(13)</sup>	3,003,560	685,530
	SY-S-1, SY-S-2, & WA-S-1 Meter Const Admin/Rehab <sup>(14)</sup>	1,804,590	927,790
	Segment 5 Construction Administration <sup>(15)</sup>	0	972,500
	Segment 5 Construction <sup>(15)</sup>	0	611,240
	Wastewater Master Plan/Contract Capacity	330,050	0
	Data Review-Aquasight	199,090	0
	<b>Total Carryover Projects</b>	<b>19,010,350</b>	<b>10,731,260</b>
	<b>TOTAL ALL PROJECTS</b>	<b>19,669,030</b>	<b>16,917,940</b>

SYSTEM PROJECTS/STUDIES/CONSULTING  
NOTES

- 1) Replacing the \$3,093,401 in reserves over five years.
- 2) Upon completion of the current inspection program we will need to start design of the next round of possibly eight Drop Shaft Rehabilitations at our metering facilities. The locations and quantity will be dependent on the results of the current inspection program. The inspection of these facilities is expected to occur before April 1, 2022. This amount is first collection towards the \$3-\$4 million needed in 2024 for design, CCA, and construction.
- 3) The MIDD is required to use the services of the OMIDD flow control manager for use of the OMIDD controlled control structures. This flow control is performed by Metco and the MIDD has set up an as-needed agreement with them. This will allow them to provide services for another year as the MIDD continues to have various flow control for all of the active construction projects.
- 4) Contract which is up for renewal in July. This service is essential to ensure that all of the billing meters within the MIDD are accurately reporting. Budgeting one year at a time.
- 5) On-going maintenance fees and the addition of a rainfall intensity layer which will show rainfall return periods for our engineering analysis and will be available to the public.
- 6) In prior years have separated by specialty. Beginning in FY 2023 will now combine all as needed into one.
- 7) Contingency for possible overages for any of the many projects we have on-going.
- 8) Currently the MIDD system only has one flow meter (MC-S-1) and therefore there is a lack of control from an operational stand point. This work could include installing seven flow meters for flow control throughout the system. These sites would also have air pressure and H2S sensors to help monitor corrosion and pressure concerns and would be connected to SCADA.
- 9) There are 4 components to this project (NGI, CPS, Biofilter, and 21 Mile & Garfield).  
 NGI will be paid for out of remaining Phase 2 funds. 1,750,000 Remaining surplus funds 1,710,005 includes amount remaining on Wade Trm, Tetra Tech and Cortis Brothers contracts  
 21 Mile and Garfield is projected at 3,750,000  
 Biofilter 3,000,000  
 NGI 40,000  
 CPS 3,500,000  
 Total MIDD Cost 10,290,000 This number includes construction and CCA

Moved \$10,000 from NGI hydrant connection project here.  
 Construction of new Odor & Corrosion Control Facilities at the CPS and MA-S-2 locations. Modification of the existing Fraser Bio-Filter, converting to it to an engineered media system.  
 The NGI portion of this project will be funded with existing NGI Phase II funds. This represents the balance needed to fund the construction and CCA based on the current Engineer's Opinion of probable cost. Bids are due for this work on March 17, 2022.

10) Design of the recommendations provided by the system-wide odor and corrosion evaluation. MIDD portion originally budgeted for \$750,000. See below for awarded amount.  
 Tetra Tech 574,756 MIDD Completed  
 Tetra Tech 224,194 NGI portion to be paid by NGI  
 TOTAL 798,950

11) Phase II grouting is the Romeo Arm (North of 15 Mile), Garfield Interceptor, and Lakeshore Interceptor- Projected to be completed  
 12) Moved to inspections  
 13) Funds for Segment 6 construction administration that is not covered by SRF.  
 Funds for construction will be covered by SRF and a portion by an ARPA amount yet to be determined.

	Carry Over	Segment 6	Segment 6	FUNDING for SEG 6	Total	
			Engineering Design & CCA	Eng-FKE	Const-Ric Man	Other
Total Budget	2,188,210		2,188,210	1,000,000		1,000,000
Less			Other	875,000		875,000
2021 Actual	(605,810)		Construction	313,210	916,790	270,000
2022 Projected	(895,870)		TOTAL		12,757,420	1,500,000
Net	685,530					12,757,420
Amount for FY 2023 reflects new money collected in FY 2022 budget				2,188,210	13,674,210	270,000
14) Design and construction cost for meter pits.						16,132,420

HRC 65,850 Design(complete)  
 Weiss 857,159 Construction  
 HRC 149,200 CA  
 TOTAL 1,072,209

There are two components for this project that were not included in the awarded contract: Drop shafts for SY-S-1 and SY-S-2. Those are being inspected soon and if it is found that they are in need of repair then we are going to need a change order to the contract. The contractor is already on site to get them taken care of. The budget savings of about \$730,000 will be put towards the possible drop shaft change order.

15) Funds to pay for the costs of Segment 5 repairs and engineering. Carryover was not shown in FY 2022 because we had anticipated using all of funds for construction and engineering.  
 SRF will be used to pay for construction after funds on hand have been used. Possible ARPA funding will help offset SRF draws

	Source	Grouting	Eng	Const	Other	Total
Settlement			1,690,961	10,809,039		12,500,000
Budget 2019			1,000,000			1,000,000
Budget 2020	2,665,158		626,060	458,782	100,000	3,850,000
Budget 2021				1,150,000		1,150,000
SRF5659-03				14,186,427		14,186,427
2017 Bond				3,660,000		3,660,000
2010 Bond				408,000		408,000
Total	2,665,158		3,317,021	30,672,248	100,000	36,754,427

MIDDD LEGAL SERVICES

Legal Services	2021/2022 BUDGET	2022/2023 BUDGET
MIDDD Legal Services <sup>(1)</sup>	150,000	75,000
Total	150,000	75,000

**NOTE:**

1) Budget reduced to reflect continued legal savings.

**CLINTONDALE PUMP STATION  
OPERATIONS and MAINTENANCE**

Project #	Clintondale Pump Station O & M	2021/2022 BUDGET	2022/2023 BUDGET
	O&M	115,000	110,000
	Spare Parts	25,000	20,000
	Plug Valve Replacement <sup>(1)</sup>	0	100,000
	CPS Electrical Room AC <sup>(2)</sup>	0	200,000
	Utilities	240,000	240,000
	<b>Total New Projects</b>	<b>380,000</b>	<b>670,000</b>
	Drain Valve For Force Main <sup>(3)</sup>	100,000	100,000
	PLC Equipment Replacement <sup>(4)</sup>	100,000	100,000
	<b>Total Carryover Projects</b>	<b>200,000</b>	<b>200,000</b>
	<b>TOTAL ALL PROJECTS</b>	<b>580,000</b>	<b>870,000</b>
	Life Cycle/Future repairs <sup>(5)</sup>	75,000	75,000

**NOTES**

- 1) 1 of the 4 plug valves failed in FY 2022 at the Clintondale Pump Station. When these valves fail it eliminates the ability to run the pump that the valve is on. This collection is to replace the remaining three.
- 2) The electrical room at Clintondale Pump Station currently is not air conditioned. This room houses all of the main electrical switchgear and more importantly the VFD's which run the 4 pumps. This room during the summer months temperatures will rise above 100 degrees F. This is causing failures within the VFD equipment. If the VFD fails then the pump will not operate. Conversion of the manually operated drain valve to be operated within SCADA. The current setup creates a safety risk for MCPWO when opening manually due to the high levels of H2S that are present while opening.
- 3) Originally budgeted to replace the switchgear. It was determined by MCPWO staff that the switchgear is fine. However, the PLC equipment will need to be replaced.
- 4) Future replacement cost for impeller, pump shaft, discharge header, diffuser bowl, etc.

**NORTH GRATIOT INTERCEPTOR  
OPERATIONS and MAINTENANCE**

Project #	NGI O & M	2021/2022 BUDGET	2022/2023 BUDGET
	O&M	47,000	40,000
	NGI Forcemain Valve Actuators <sup>(1)</sup>	0	200,000
	Spare Parts	3,000	2,500
	Pigging	25,000	25,000
	Utilities	20,000	20,000
	<b>Total New Projects</b>	<b>95,000</b>	<b>287,500</b>
	Move Hydrant connection closer <sup>(2)</sup>	10,000	0
	Replace pressure transducers-sensors <sup>(3)</sup>	100,000	0
	Repave Parking Lot <sup>(4)</sup>	20,000	20,000
	<b>Total Carryover Projects</b>	<b>130,000</b>	<b>20,000</b>
	<b>TOTAL ALL PROJECTS</b>	<b>225,000</b>	<b>307,500</b>
	Life Cycle/Future repairs <sup>(5)</sup>	30,000	30,000

**NOTES**

- 1) The dual forcemains at the NGI pump station have three valves that are manually controlled. Several years ago we shut down one of the two forcemains on an annual basis as it was creating lethal levels of H2S in the downstream discharge chamber. Recent evaluation of the facility has found that in a large wet weather event, both forcemains are required to keep levels safe in the upstream interceptor. By automating those three valves, staff will have the ability to quickly open the valves to the proper configuration to activate both forcemains.
- 2) Moved to Odor and Corrosion project. See note 9 on page 8A
- 3) Sensors near end of useful life and the installation of new equipment. Will also be replacing downlookers and float arrays Project expected to be completed in FY 2022.
- 4) Repave existing pavement areas. Starting to develop large cracks. Waiting for odor and corrosion project to be completed.
- 5) Future replacement cost for pumps, HVAC, and force main.

**METERS  
OPERATION and MAINTENANCE**

Project #	METERS O & M	2021/2022 BUDGET	2022/2023 BUDGET
	Meter Maintenance (3rd yr of 3 yr contract) <sup>(1)</sup>	163,470	180,000
	Utilities <sup>(2)</sup>	7,500	8,400
	As Needed	20,000	15,000
	<b>Total New Projects</b>	<b>190,970</b>	<b>203,400</b>
	Replace Underground Light Fixtures <sup>(3)</sup>	0	25,000
	<b>Total Carryover Projects</b>	<b>0</b>	<b>25,000</b>
	<b>TOTAL ALL PROJECTS</b>	<b>190,970</b>	<b>228,400</b>

**NOTES**

- 1) Current contract will be ending so will be going out to bid for new one and the cost is projected to increase.
- 2) CS-3 charges were previously charged to this cost center. Going forward they will now be charged to CS-3.
- 3) Project was budgeted to be completed in FY 2021 but have carried over the unspent funds.

**MIDD CONTROL STRUCTURES and PUMP STATION  
OPERATION and MAINTENANCE**

Project #	Control Structures & Pump Station O&M <sup>(1)</sup>	2021/2022 BUDGET	2022/2023 BUDGET
	O&M-CS 3	15,000	10,000
	Spare Parts-CS 3	1,000	1,000
	Utilities-CS 3 <sup>(2)</sup>	0	600
	O&M-CS 12	0	40,000
	Spare Parts-CS 12	0	2,500
	Utilities-CS 12	0	20,000
	O&M-CS 13	0	20,000
	Spare Parts-CS 13	0	2,500
	Utilities-CS 13	0	20,000
	Total	16,000	116,600
	Improvement to Hydraulic Cylinder <sup>(3)</sup>	200,000	164,770
	<b>Total Carryover Projects</b>	<b>200,000</b>	<b>164,770</b>
	<b>TOTAL ALL PROJECTS</b>	<b>216,000</b>	<b>281,370</b>
	Life Cycle	5,000	5,000

**Notes:**

- 1) CS-3 utilities are tied to biofilter since they share same power feed. CS-12 is a new pump station that is being added to support the Segment 5 work. It is also going to be used for future inspections, maintenance, and repairs of the Romeo Arm and Garfield Interceptor. Six pumps are part of CS-12 so more maintenance is expected. CS-13 is being added to support the Segment 6 work. This control structure will be kept in place long-term to support any inspections, maintenance, and repairs downstream in the 15 Mile Interceptor and Romeo Arm.
- 2) Prior DTE invoices were charged to the meter cost center.
- 3) Project ongoing to replace the hydraulic cylinder which is at the end of its useful life and presents a safety concern.



**BIOFILTER  
OPERATIONS and MAINTENANCE**

Project #	BIOFILTER O & M	2021/2022 BUDGET	2022/2023 BUDGET
	O&M	15,000	15,000
	Spare Parts	1,000	1,000
	Water	10,000	9,500
	<b>Total New Projects</b>	<b>26,000</b>	<b>25,500</b>
	Life Cycle <sup>(1)</sup>	23,000	23,000

**NOTES**

- 1) Future replacement cost for media bed filter material, centrifugal fan, driveway, flow conditioner, etc.

**INTERCEPTOR  
OPERATIONS and MAINTENANCE**

Project #	Interceptor	2021/2022 BUDGET	2022/2023 BUDGET
	Annual Critical Area Inspections <sup>(1)</sup>	0	50,000
	Interceptor Cleaning/Sediment Removal <sup>(2)</sup>	0	3,550,000
	Grouting <sup>(3)</sup>	0	1,000,000
	<b>Total New Projects</b>	0	4,600,000
	Grouting <sup>(3 &amp; 4)</sup>	0	3,525,000
	Interceptor Inspections <sup>(5)</sup>	1,738,450	1,773,300
	<b>Total Carryover Project</b>	1,738,450	5,298,300
	<b>TOTAL ALL PROJECTS</b>	1,738,450	9,898,300

**NOTES**

- 1) Due to the high risk of areas such as where the Clinton River or Red Run drain cross over top of our interceptors, it is recommended to perform an inspection of these areas on an annual basis. MCPWO will setup an annual contract with a consultant/contractor to inspect these and ensure there are no issues.
- 2) First collection to start cleaning out the interceptors within the MIDD. This will be an activity that will occur on a 10-year basis and has not been done since the MIDD took over control from DWSD. The Lakeshore Interceptor and Romeo Arm/Garfield North of 15 Mile are top priority for this project in 2024. During the next inspection a plan will be developed for this cleaning program so that it can be competitively bid. Ultimately this is a \$10-\$20 million system wide cleaning project.
- 3) On-going grouting within the MID interceptors to seal any leaks or repairs that need to be made.
- 4) Moved from Engineering (Page 8).  
Repair work stemming from inspection repair program/Phase III Grouting 3,200,000  
Phase III Grouting 325,000  
TOTAL 3,525,000

5) Romeo Arm, 15 Mile Interceptor (forece remain included), Lakeshore Interceptor, Garfield Interceptor

Drop Shafts

CT-S-7 (if not repaired or inspected during segment 5), FR-S-2 (if not repaired or inspected during segment 5), ST-S-3, CT-S-4, CT-S-5, CT-S-6, CH-S-1, CH-S-2, CH-S-3, LX-S-2, NH-S-1, HR-S-1

Lenox Local inspection being paid from surplus bond funds. 704,337

Will likely be more expensive than the current program due to requiring full laser profile and sonar reports. This information will be critical for MCPWO staff to gauge the amount of work required to clear the debris from within the interceptors. We will also be able to compare the rate of rise of that debris since it was last checked in 2017.

Source	Amount
2020 Budget	1,000,000
2021 Budget	1,000,000
2020 Expenses	(61,555)
2021 Expenses	(86,149)
2022 Proj Exp	(79,000)
<b>TOTAL</b>	<b>1,773,296</b>

**PUMP STATIONS-STORMWATER  
OPERATIONS and MAINTENANCE**

Chapter	Community	Various Pump Stations	2021/2022 BUDGET	2022/2023 BUDGET
4	Chesterfield	Schmidt <sup>(2)</sup>	23,000	28,000
4	Clinton Twp	Bridgewood <sup>(2)</sup>	18,000	23,000
4	Sterling Heights	Hildebrandt <sup>(2)</sup>	20,000	25,000
4	Harrison Twp	Murdock Ballard <sup>(1 &amp; 2)</sup>	30,000	55,000
		Total	91,000	131,000

**NOTES**

- 1) The current inlet grate to the Murdock Ballard pump station is not functioning properly and is in need of replacement for \$20,000. Over the past year, large debris such as logs have made it through the existing grates and have then gone into the pumps causing damage to the impellers.
- 2) This project will build out standard cables and connections to the portable generator. The cost for CS-3 connection is separate and will be handled through O&M. The projected cost of \$20,000 is divided equally amongst all the pump stations. At \$5,000 per station.

**Revenue Bond  
and  
Projected SRF Calculation**

Payment Date	2021/2022 BUDGET	2022/2023 BUDGET
SRF 5487-01 <sup>(1)</sup>	545,020	545,140
SRF 5540-01 <sup>(1)</sup>	135,150	138,000
Projected Seg 5 SRF(5659-03) Debt <sup>(2)</sup>	400,000	850,000
Projected Seg 6 SRF(5693-01) Debt <sup>(3)</sup>	600,000	925,000
<b>Total</b>	<b>1,680,170</b>	<b>2,458,140</b>

**NOTE**

- 1) SRF 5540-01 and 5487-01 are classified as revenue bonds so they must be included in the rate calculation on page 4, unlike the debt shown on page 3. In prior years combined the two revenue bonds into one line item.
- 2) Segment 5 SRF loan closed in July of 2020. However, we anticipate using possible ARPA funds to cover a portion of the costs. Will collect the funds over a 12 month period instead of the semi annual basis due to the uncertainty of the amount that will be drawn. Will be using all proceeds from lawsuit settlement and surplus sinkhole funds towards Segment 5 construction to lower the amount of SRF funds required. New estimated SRF amount is \$14,186,427. Principal payments begin Spring 2023
- 3) Segment 6 SRF of \$12,757,420 closed in June 2021. However, we are anticipating using ARPA funds to cover a portion of the costs. Will collect the funds over a 12 month period instead of the semi annual basis due to the uncertainty of the amount that will be drawn. Principal payments estimated to start in 23/24. Segment 5 & 6 funds are earmarked for debt payment. Need funds on hand to pay debt twice a year, as cash is collected monthly. Segment 5 and 6 will be allocated using the below percentages. Based on average flow when each SRF project closed. Once Segment 5 and 6 are completed, the SRF loans will be trued up so that the communities will receive proper credit for the amounts they have paid.

**6**

	Fall 2022	Spring 2023
5540-01(Biofilter) Interest	14,550	13,450
5540-01(Biofilter) Principal	110,000	64,125
5659-03(Segment 5) Interest	64,125	1,215,000
5693-01(Segment 6) Interest	30,400	405,000
5487-01(Meter Rehab) Interest	70,072	70,072
<b>Total</b>	<b>289,147</b>	<b>2,398,047</b>
	<b>Grand Total</b>	<b>2,687,194</b>

Debt #	Projected Debt Reserve 6/30/23	
	7/1/2022	6/30/2023
SRF 5540-01	27,366	(138,000)
SRF 5487-01	109,463	(545,144)
SRF 5659-03	1,494,822	(1,343,250)
SRF 5693-01	600,000	(660,800)
<b>TOTAL</b>	<b>2,231,651</b>	<b>(2,687,194)</b>

SRF	Chester Twp	Clinton Twp	Fraser	Harrison Twp	Lenox Twp	Macomb Twp	New Haven	Shelby Twp	St.Hts	Utica	Wash Twp	Total
Seg 5 (20/21)	7,2499%	21,2506%	4,0512%	6,4207%	1,0638%	13,9606%	0,8226%	9,9057%	30,9081%	1,5918%	2,7751%	100,00%
Seg 6 (21/22)	7,3432%	21,3460%	4,1370%	6,4221%	1,0652%	13,9284%	0,8271%	9,7757%	30,7833%	1,6268%	2,7451%	100,00%
<b>TOTAL</b>	<b>129,549</b>	<b>378,081</b>	<b>72,702</b>	<b>113,980</b>	<b>18,895</b>	<b>247,503</b>	<b>14,643</b>	<b>174,624</b>	<b>547,464</b>	<b>28,578</b>	<b>48,981</b>	<b>1,775,000</b>
												<b>1,775,000</b>
												<b>Total Seg 5 and 6</b>

Revenue Detail

Revenue	2021/2022 BUDGET	2022/2023 BUDGET
Reimbursements <sup>(1)</sup>	200,000	225,000
Settlements <sup>(2)</sup>	100,000	100,000
Carryforward <sup>(3)</sup>	10,370,340	16,523,220
MIDD O&M/Charge Required Revenue	16,476,210	17,159,080
Washington Twp Meter Project	47,470	0
Use of SCADA Reserve(see Page 7)	0	215,000
Interest	60,000	50,000
<b>Total</b>	<b>27,254,020</b>	<b>34,272,300</b>

NOTES

1) Reimbursement from OMID for personnel, SCADA, other and engineering. Also from other drainage districts for SCADA and engineering assistance

2) As part of the bankruptcy settlement, MIDD as part of class 14 has been issued Class B notes that mature in 2044.

There was a delay in settling with other claimants.

3) Remaining projects that were charged in prior years and need to be carried forward for completion in 22/23

Obsolete Wireless backhaul replacement links	SCADA	21,500
3.6GHz Replacement Radios at MPSCS2705	SCADA	18,690
SolarWinds - Network Management Software	SCADA	12,900
Fiber Optic Improvements	SCADA	21,500
Firewall Hardware Design/Config	SCADA	4,300
Training - Radios/Switches/MMWare	SCADA	5,000
As Needed Applied Science	Eng	25,000
As Needed Metco	Eng	60,000
Level Sensors/Pressure/H2S-Meters	Eng	214,200
General Construction/Engineering Contingency-All projects	Eng	225,000
Odor and Control-Construction	Eng	7,010,000
Segment 5 Construction and Construction Admin	Eng	1,583,740
Segment 6 Construction Administration	Eng	685,530
SY-S-1, SY-S-2, & WA-S-1 Meter Const Admin/Rehab	Eng	927,790
Drain Valve For Force Main	CPS	100,000
Clintondale Generator Switchgear Replacement Study	CPS	100,000
Repave Parking Lot	NGI	20,000
Improvement to Hydraulic Cylinder	CS-3	164,770
Replace Underground Light Fixtures	Meters	25,000
Interceptor Cleaning	Intercept	3,525,000
Inspection Program	Intercept	1,773,300
<b>TOTAL</b>	<b>TOTAL</b>	<b>16,523,220</b>

Additional Funds from Sinkhole Lawsuit to be used for Segment 5 Engineering -

Additional Funds from Sinkhole Lawsuit to be used for Segment 5 Construction -

16,523,220

Effective July 1, 2022

# Exhibit A

Annual Operating Charges

	Current 2022		2023		COSDS		MIDD		Annual		Monthly	
	Budget		Budget		%		%		COSDS	Macomb	COSDS	MIDD
<b>GLWA</b>												
Common-to-all and OMIDDD Charges	\$ 68,038,100	\$	70,241,700		31.77%		68.23%		\$ 22,315,788	\$ 47,925,912		
CSO Program	1,671,700		1,692,300		39.48%		60.52%		668,120	1,024,180		
Total	69,709,800		71,934,000						22,983,908	48,950,092		\$ 1,915,325.67 \$ 4,079,174.33
<b>OMIDDD</b>												
Operations and Maintenance Expense												
Sewer System Maintenance	1,078,400		595,360		31.77%		68.23%		169,146	406,214		
Sewer System Engineering	52,210		68,220		31.77%		68.23%		21,673	46,547		
Pump Maintenance Unit	2,191,860		2,237,780		31.77%		68.23%		710,943	1,526,837		
Systems Control Unit	260		410		31.77%		68.23%		130	280		
Mapping Unit	2,070		1,300		31.77%		68.23%		413	887		
Miss Dig	360		110		31.77%		68.23%		35	75		
General and Administrative	63,090		1,261,030		31.77%		68.23%		400,629	860,401		
Subtotal	3,388,250		4,164,210						1,322,969	2,841,241		236,770.08
Non Operating												
Major Maintenance	1,150,000		1,150,000		31.77%		68.23%					
Emergency Maintenance	500,000		500,000		31.77%		68.23%		365,355	784,645		65,387.08
Capital Improvement	802,400		800,000		33.10%		66.90%		158,850	341,150		28,429.17
Subtotal	2,452,400		2,450,000						264,800	535,200		44,600.00
O&M Non-Rate Revenue	(200,420)		(210,060)		31.77%		68.23%		(66,736)	(143,324)		(11,943.67)
<b>FY 2023 Total Fixed Charges</b>	<b>\$ 75,350,030</b>	<b>\$</b>	<b>78,338,150</b>						<b>\$ 25,029,146</b>	<b>\$ 53,309,004</b>		<b>4,442,416.99</b>

Capital Improvements are defined as investments that are made to assets that exceed \$5,000 and increase the useful life of assets by five years or more.

	2010A		2010B		2011A		2013A		2014A		2015A		2019		2020A		2022		Total	
	mta		mta		mta		mta		mta		mta		revenue		revenue		Issuance		Debt Service	Debt Service
Debt Service*	1,671,500		1,673,875		1,624,750		3,954,400		468,344		543,625		437,280		1,069,018		3,278,650		392,900	887,750
2010A mta 5368-02																				
2010B																				
2011A mta 5368-02																				
2013A mta 5368-03																				
2014A																				
2015A mta 2001-01																				
2019 refunding																				
2019 revenue																				
2020A																				
2022 Issuance Projected Debt**																				
Total Debt Service	13,440,466		13,377,549		88,790,496		91,715,699													
<b>Total OMIDDD Related Revenue Requirements</b>	<b>88,790,496</b>		<b>91,715,699</b>																	

\* Estimated annual debt service for the 2023 budget updated February 2022

\*\* 2022 issuance projected debt for 2023 using dated date of 9/1/2022, funding of approximately \$15 million, final maturity 7/1/2042, and true interest cost of approximately 2.6%.

# Exhibit B

## Flow Data

Year	Fiscal Year	OMID FMWG Flows		DWSD Rate Simplification Flows		OMIDDD Allocation Flows	
		COSDS (cfs)	Macomb (cfs)	COSDS (cfs)	Macomb (cfs)	COSDS (cfs)	Macomb (cfs)
1	FY2011/12	33.25	71.00	32.44	68.00	32.85	69.50
2	FY2012/13	29.89	62.82	NA	NA	29.89	62.82
3	FY2013/14	30.74	64.80	NA	NA	30.74	64.80
4	FY2014/15	29.74	64.76	NA	NA	29.74	64.76
5	FY2015/16	29.36	65.08	NA	NA	29.36	65.08
6	FY2016/17	30.63	66.50	NA	NA	30.63	66.50
7	FY2017/18	34.05	69.60	NA	NA	34.05	69.60
8	FY2018/19	34.05	69.60	NA	NA	34.05	69.60
9	FY2019/20	32.51	70.79	NA	NA	32.51	70.79
10	FY2020/21	27.02	64.16	NA	NA	27.02	64.16
Current FY2021/22 (9-Yr Average)						31.54	67.05
Current FY2021/22 Percent						31.99%	68.01%
Prop. FY2022/23 (10-Yr Average)						31.08	66.76
Prop. FY2022/23 Percent						31.77%	68.23%

- All annual flows are based on the average monthly flow rates, proportioned based on the number of days in each month.
- COSDS Flows for fiscal years FY2011/12 thru FY2014/15 include a 30% adjustment to account for diversion to the Clinton River Wastewater Resource Reclamation Facility (CRWRRF).
- Due to a catastrophic failure at the CRWRRF (COSDS's non-OMID outlet), COSDS delivered more than 70% of its flow to OMID in FY2017/18. For the FY1920 calculations, the actual FY2017/18 COSDS-to-OMID flow was replaced with a COSDS-to-OMID flow adjusted to equal 70% of the total COSDS flow. The adjustment was made to reflect the intent to deliver 70% of COSDS flow and minimize rate volatility. In FY2018/19, COSDS offset the high FY2017/18 COSDS-to-OMID flow with a low FY2018/19 COSDS-to-OMID flow. With the actual flows from these two years paired, volatility is minimized and the intent to deliver 70% of COSS flow is reflected. Therefore, the FY2017/18 actual COSDS-to-OMID flow is used for the FY2020/21 calculations instead of the FY2017/18 adjusted COSDS-to-OMID flow.
- In FY2017/18 and FY2018/19, there was volatility in the flow delivered from COSDS to OMID (see note 3 for details). When paired, these two years offset each other and the volatility is mitigated. The OMID rates are based on a rolling 9-year average flow rate. In Rate Years 2829 and 2930, these volatile years will roll off the average, which will create volatility in the average. To reduce this future volatility, the COSDS-to-OMID flows and MIDDD flows for FY2017/18 (COSDS = 37.74 cfs, MIDDD = 67.29 cfs) and FY2018/19 (COSDS = 30.35 cfs, MIDDD = 71.90 cfs) have both been replaced with the average for these two years (COSDS = 34.045 cfs, Macomb = 69.595 cfs).
- Except as noted above, COSDS fiscal year flows are based on measured flow, which includes actual diversion to CRWRRF.

EXHIBIT C  
OAKLAND MACOMB INTERCEPTOR DRAIN DRAINAGE DISTRICT  
CAPITAL IMPROVEMENT PROGRAM  
February 11, 2022

**Maintenance Reserve (Fund 82912)**

Project No.	Project Description	2021 Actual	2022 Updated	2023 Proposed
	<b>MAINTENANCE RESERVE BALANCE BEGIN OF YEAR</b>	<b>\$2,848,992</b>	<b>\$1,808,945</b>	<b>\$1,628,945</b>
	<b>Total Maintenance Reserve Revenue</b>	<b>\$1,037,500</b>	<b>\$1,150,000</b>	<b>\$1,150,000</b>
1-2842	NESPS Operational Transition (Includes NEXGEN AM)	\$47,829	\$60,000	\$0
1-3014	NESPS Emergency Contingencies Project	\$188,690	\$70,000	\$0
1-3015	OMID Immediate Repairs Project	\$1,432,617	\$150,000	\$0
1-3275	OMID Odor-Corrosion Study 2	\$201,580		
N/A	Major Maintenance General	\$204,892		
N/A	P4 VFD Replacement		\$300,000	\$300,000
N/A	CCTV Inspection	\$1,940	\$250,000	\$250,000
N/A	PLC Replacement at NESPS Generator		\$0	\$0
<b>NEW</b>	Wet Well Cleaning-Check (Note 2021 in Immediate Repairs)		\$500,000	\$500,000
	<b>Total Maintenance Reserve Expenses</b>	<b>\$2,077,548</b>	<b>\$1,330,000</b>	<b>\$1,050,000</b>
	<b>MAINTENANCE RESERVE BALANCE END OF YEAR</b>	<b>\$1,808,945</b>	<b>\$1,628,945</b>	<b>\$1,728,945</b>

**Capital Reserve (Fund 82912)**

Project No.	Project Description	2021 Actual	2022 Updated	2023 Proposed
		<b>\$2,413,875</b>	<b>\$3,287,994</b>	<b>\$7,858,278</b>
	<b>Total Capital Reserve Revenue</b>	<b>\$1,082,984</b>	<b>\$802,400</b>	<b>\$800,000</b>
1-3016	OMID Flow Control Improvements (Gates)	-\$10,988	\$400,000	\$5,600,000
1-3017	NESPS Security Upgrades	\$1,735		
1-3018	OMID NESPS Elevator	\$218,801		
1-3019	OMID NIEA Sewer Rehabilitation Design	\$81,216	-\$2,236,912.57	\$0
1-3020	NESPS Mechanical and Electrical Upgr/Design	-\$83,655	-\$3,905,971.57	\$0
N/A	Capital General	\$1,756		
XX	ITC Bypass			\$1,000,000
XX	NESPS Discharge Chamber Correction		\$500,000	\$1,500,000
XX	OMID Odor and Corrosion Facility Design		\$700,000	\$300,000
XX	NESPS Wet Well Heaters		\$275,000	\$300,000
N/A	OMID PCI-7 Bypass Feasibility Analysis		\$0	\$450,000
N/A	Pipe Lining PCI-7		\$0	\$500,000
N/A	Hydrogen Sulfide Mitigation in OMID/NI-EA		\$500,000	\$500,000
<b>NEW</b>	MIDDD Segment 5-OMID Portion		\$0	\$562,500
<b>NEW</b>	Macomb SCADA Upgrades OMIDDD Portion		\$0	\$70,000
	<b>Total Capital Reserve Expense</b>	<b>\$208,865</b>	<b>-\$3,767,884</b>	<b>\$10,782,500</b>
	<b>CAPITAL RESERVE BALANCE</b>	<b>\$3,287,994</b>	<b>\$7,858,278</b>	<b>-\$2,124,222</b>

**Emergency Maintenance (Fund 82912)**

Project No.	Project Description	2021 Actual	2022 Updated	2023 Proposed
	Beginning Emergency Reserve Balance	<b>\$1,000,000</b>	<b>\$1,500,000</b>	<b>\$2,000,000</b>
	<b>Total Emergency Reserve Revenue</b>	<b>\$500,000</b>	<b>\$500,000</b>	<b>\$500,000</b>
	No Planned Work			
	<b>Total Emergency Reserve Expenses</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
	Ending Emergency Reserve Balance	<b>\$1,500,000</b>	<b>\$2,000,000</b>	<b>\$2,500,000</b>

**Summary of Reserve Balances (Fund 82912)**

Reserve	2021 Actual	2022 Updated	2023 Proposed
Undesignated	\$7,804,956	\$7,804,956	\$7,804,956
Major Maintenance	\$1,808,945	\$1,628,945	\$1,728,945
Emergency Maintenance	\$1,500,000	\$2,000,000	\$2,500,000
Capital	\$3,287,994	\$7,858,278	-\$2,124,222
<b>Net Position</b>	<b>\$14,401,894</b>	<b>\$19,292,179</b>	<b>\$9,909,679</b>
<i>12.5% of the Operations and Maintenance Budget</i>		<i>\$9,137,256</i>	<i>\$9,466,933</i>



### Current Construction Funds 2/11/22

Project No.	Project Description	Funds Committed for Capital Projects (In- progress)
<b>1-3308</b>	NESPS Mechanical and Electrical Construction	\$54,086,000
<b>1-3309</b>	NIEA Phase I First Bond	\$28,395,600
<b>Total Remaining Expense in Construction Funds</b>		<b>\$82,481,600</b>

### Future Bonded Projects Through 2023

Project No.	Project Description	Project Estimate
<b>NEW</b>	NIEA Phase II Bond	\$15,000,000
<b>NEW</b>	OMID Odor/Corrosion Facility Construction	\$9,000,000
<b>Total Bonded Projects</b>		<b>\$24,000,000</b>



**Candice S. Miller**

Public Works Commissioner  
Macomb County

**To: Macomb Interceptor Drain Drainage District Board Members**

**CC: FILE**

**From: Stephen Downing, Construction & Maintenance Manager**

**Date: March 14, 2022**

**Subject: Grouting Change Order – Doetsch Change Order No. 3 and AEW Change Order No. 1**

The MIDDD engaged with Doetsch Environmental Services in August 2019 to perform chemical grouting and maintenance in the Segment 5 reach of the Romeo Arm Interceptor along 15 Mile Road between the ITC Corridor and Fontana Dr. in Sterling Heights, MI. The Segment 5 Grouting was completed in September 2020 just prior to the start of the Segment 5 Rehabilitation Project. The total volume of grout injected in Segment 5 was approximately 88,500 gallons for a total cost of \$2,665,157.65. The CCA and Field Observation was performed by FK Engineering within their existing As-needed Engineering contract. The total cost for FK Engineering's services was approximately \$250,000.

In June 2020 during a pause on grouting in Segment 5, Change Order No. 1 was executed which increased the Doetsch budget by \$3,000,000 to start chemical grouting operations in the Lakeshore and Garfield Interceptors. Since that time, Doetsch has continued grouting operations within the \$3,000,000. Their unit pricing compared very favorably to prices paid on similar work and their pricing has not increased. The CCA and Field Observation services were assigned to AEW with an initial contract value of \$438,009.50.

The 2021/2022 Budget allocated \$3,525,000 for continued chemical grouting and engineering oversight. As of February 28<sup>th</sup>, 2022, Doetsch has exceeded their current contract value and AEW is nearing their initial contract value. There are still many locations throughout the Lakeshore and Garfield Interceptors that require chemical grouting so an increase to the existing contract values is required. The attached drawing illustrates the areas that Doetsch has injected chemical grout in the Lakeshore and Garfield Interceptors. They have injected a total of 102,212.24 gallons of grout from May 13, 2020, to February 16, 2022, for a total cost of \$3,298.238. In addition, AEW has expended approximately \$408,000 of their initial contract amount during this time.

The recommendation is to increase the Doetsch contract by \$3,000,000 which will cover approximately the next 12 months based on a monthly average of \$250,000 and to increase the AEW contract by \$300,000 will cover the next 12 months based on a monthly average of \$25,000. There are fluctuations in the monthly invoices due to the crew's ability to access the Interceptor due to rain or maintenance within the system.

**OFFICE LOCATION:** 21777 Dunham Road, Clinton Township, Michigan 48036 • Phone: 586-469-5325 • Fax: 586-469-5933

**MAILING ADDRESS:** P. O. Box 806, Mt. Clemens, Michigan 48046-0806

**ENGINEERING** • Phone: 586-469-5910 • Fax: 586-469-7693 • **SOIL EROSION** • Phone: 586-469-5327 • Fax 586-307-8264

The recommendation is that the Macomb Interceptor Drain Drainage District Board approve Change Order No. 3 for Doetsch Environmental Services to continue the Segment 5 Chemical Grouting efforts for the total add of \$3,000,000.

The recommendation is that the Macomb Interceptor Drain Drainage District Board approve Change Order No. 1 for AEW to continue CCA and Field Observation for the total add of \$300,000.

Attachments: Grouting Plan Drawing  
Doetsch Change Order No. 3  
AEW Change Order No. 1

**OFFICE LOCATION:** 21777 Dunham Road, Clinton Township, Michigan 48036 • Phone: 586-469-5325 • Fax: 586-469-5933

**MAILING ADDRESS:** P. O. Box 806, Mt. Clemens, Michigan 48046-0806

**ENGINEERING** • Phone: 586-469-5910 • Fax: 586-469-7693 ♦ **SOIL EROSION** • Phone: 586-469-5327 • Fax 586-307-8264

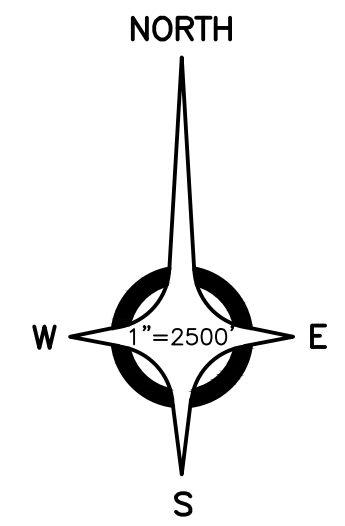
**LEGEND**

- METERING FACILITY
- PUMP STATION
- CONTROL STRUCTURE
- FUTURE CORROSION CONTROL FACILITY
- BIOFILTER VENTILATION SYSTEM
- SHEET NUMBER
- ITC PROPERTY
- DRAINS / WATERBODIES
- RAILROADS
- MATCH LINES
- SANITARY SEWER - NO INSPECT

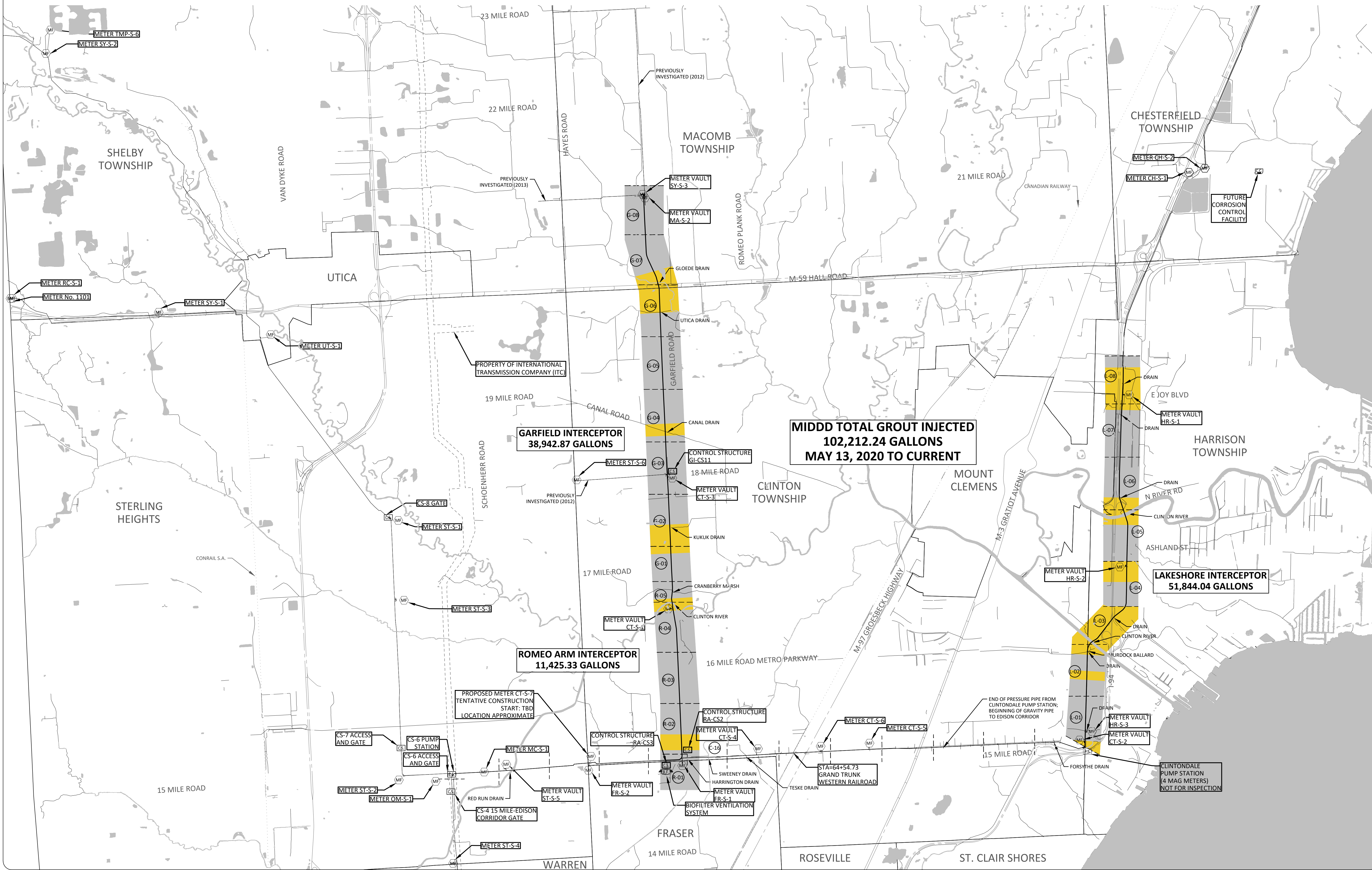
**GROUTING COMPLETED**



**PROJECT LIMITS**



**ANDERSON, ECKSTEIN AND WESTRICK, INC.**  
 CIVIL ENGINEERS SURVEYORS ARCHITECTS  
 51301 Schoenherr Road Phone 586 726 1234  
 Shelby Township Fax 586 726 8780  
 Michigan 48315  
 www.aewinc.com  
 ENGINEERING STRONG COMMUNITIES



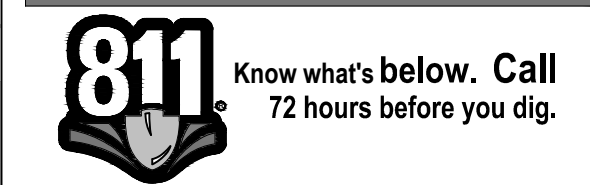
5-11-20	ISSUED FOR CONSTRUCTION
DATE	SUBMITTALS/REVISIONS
PROJECT NAME:	

**MCPWO WWS-2020-01  
 MID GROUTING  
 PROGRAM**

**OVERALL PLAN  
 MACOMB COUNTY  
 SANITARY SEWER SYSTEM**

CLIENT:  
 MACOMB COUNTY PUBLIC WORKS

<input checked="" type="checkbox"/> PRELIMINARY	<input checked="" type="checkbox"/> CONSTRUCTION	<input type="checkbox"/> RECORD
DRAWN BY: MJS	CHECKED BY: LIU	DATE: MAY 2020
SCALE: 1" = 2500'		
0 1250 2500 5000		



UTILITY INFORMATION, AS SHOWN, INDICATES APPROXIMATE LOCATIONS AND TYPES OF EXISTING FACILITIES ONLY, AS DISCLOSED BY RECORDS PROVIDED TO THIS FIRM FROM THE VARIOUS UTILITY COMPANIES. NO GUARANTEE IS GIVEN OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF.

PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING OVERHEAD AND UNDERGROUND UTILITIES (IN CONFLICT WITH THE CONSTRUCTION OF THESE PROPOSED IMPROVEMENTS) SHALL BE VERIFIED IN THE FIELD. DURING THE CONSTRUCTION, THE CONTRACTOR SHALL PROTECT AND SUPPORT ALL UTILITIES THAT ARE ENCOUNTERED. (ALL COSTS FOR UTILITY LOCATION VERIFICATION, SUPPORT AND PROTECTION SHALL BE INCLUDED IN THE PROPOSED PAY ITEM CONFLICTING WITH THAT UTILITY).

DURING CONSTRUCTION, THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN OPERATING NEAR ANY AND ALL OVERHEAD AND / OR BURIED UTILITIES.

PROJECT NO. 0211-0207

M:\0211\0211-0207\DWG\CIVIL\DESIGN\C-02 OVERALL PLAN.DWG  
 02 - C-02 Overall Plan - 2/16/2022 11:35:56 AM

SHEET NO.

**C-02**

Date of Issuance: 3/14/2022  
Owner: Macomb Interceptor Drain  
Drainage District  
Engineer: FKE / AEW

Effective Date: 3/14/2022  
Owner's Contract No.: WWS-2019-011 & WWS-2020-001  
Engineer Contract No.: 17-134 (FKE) & 0211-0207-0 (AEW)  
Contract Name: MID Grouting Project

The Contract is modified as follows upon execution of this Change Order:

Add \$3,000,000 to the existing contract to continue chemical grouting in the Lakeshore and Garfield Interceptors.

The original Contract Sum was:	<u>N/A - Time &amp; Materials</u>
The net change from previously approved Change Orders No. 1 to No: 2	<u>\$3,068,542.05</u>
The Contract Sum prior to this Change Order:	<u>\$ 5,665,157.65</u>
The Contract Sum prior to this Change Order will be increased by:	<u>\$ 3,000,000.00</u>
The new Contract Sum, including this Change Order, will be:	<u>\$ 8,665,157.65</u>
The Contract Time will be changed by:	0 (days)
The date of Substantial Completion as of the date of this Change Order, therefore, is: N/A	

ACCEPTED:	ACCEPTED:
By: _____	By: _____
Owner (Authorized Signature)	Contractor (Authorized Signature)
Title _____	Title _____
Date _____	Date _____

Date of Issuance: 3/14/2022  
Owner: Macomb Interceptor Drain  
Drainage District  
Engineer: AEW

Effective Date: 3/14/2022  
Owner's Contract No.: WWS-2020-001  
Engineer Contract No.: 0211-0207-0  
Contract Name: MID Grouting

The Contract is modified as follows upon execution of this Change Order:

Add \$300,000 to the existing contract to continue CCA and Field Observation for the MID Grouting Project.

The original Contract Sum was: \$ 438,009.50

The net change from previously approved Change Orders No.1 to No. 2: \$ 0

The Contract Sum prior to this Change Order: \$ 438,009.50

The Contract Sum prior to this Change Order will be increased by: \$ 300,000.00

The new Contract Sum, including this Change Order, will be: \$ 738,009.50

The Contract Time will be unchanged by: 0 (days)

The date of Substantial Completion as of the date of this Change Order, therefore, is: N/A

ACCEPTED:

By: \_\_\_\_\_  
Owner (Authorized Signature)

ACCEPTED:

By: \_\_\_\_\_  
Engineer (Authorized Signature)

Title \_\_\_\_\_

Date \_\_\_\_\_

Title \_\_\_\_\_

Date \_\_\_\_\_



**Candice S. Miller**

Public Works Commissioner  
Macomb County

To: Macomb Interceptor Drain District & 8 ½ Mile Relief Drain District Board Members

From: Stephen Downing, Construction & Maintenance Manager

Date: March 14, 2022

Subject: Owner Controlled Insurance Program (OCIP) Update

The intent of this memorandum is to update the respective Boards on the status of the OCIP Program and obtain authorization for the Board Chair to authorize the binding of the policies if required prior to the April 2022 Board meeting. A follow-up memorandum will be submitted to the respective Boards to update on the premium costs and the allocation for each project.

The Macomb County Public Works Office has been working with Meadowbrook Insurance Agency on behalf of the Macomb Interceptor Drain Drainage District and 8 ½ Mile Relief Drain Boards to manage the current OCIP Program. This includes analyzing other projects for inclusion in the current program to maximize the savings on premiums.

The table below summarizes the current policies for the program:

		Seg 5	Seg 6	8 1/2 ISS
<b>Cost Allocation / Project</b>		100%	100%	TBD
Primary General Liability		\$124,222	\$103,278	
5M x P		\$84,145	\$78,412	
5M x 5M		\$49,092	\$47,509	
10M x 10M		\$70,216	\$73,772	
15M x 20M		\$67,957	\$75,573	
15M x 35M		\$51,250	\$56,375	
<b>Liability Subtotal</b>		<b>\$446,882</b>	<b>\$434,920</b>	
<b>Cost Allocation / Project</b>	Premiums	45%	36%	19%
Builder's Risk	\$199,957	\$102,705	\$82,164	\$43,364
Comp. Personal Liability	\$57,254	\$25,764	\$20,611	\$10,878
Owners Protective Indemnity	\$131,968	\$59,386	\$47,508	\$25,074
<b>BR, CPL &amp; OPPI Subtotal</b>	<b>\$389,179</b>	<b>\$175,131</b>	<b>\$140,104</b>	<b>\$73,944</b>
<b>Grand Total</b>		<b>\$622,013</b>	<b>\$575,024</b>	<b>\$73,944</b>

**OFFICE LOCATION:** 21777 Dunham Road, Clinton Township, Michigan 48036 • Phone: 586-469-5325 • Fax: 586-469-5933

**MAILING ADDRESS:** P. O. Box 806, Mt. Clemens, Michigan 48046-0806

**ENGINEERING** • Phone: 586-469-5910 • Fax: 586-469-7693 ♦ **SOIL EROSION** • Phone: 586-469-5327 • Fax 586-307-8264

As we approach the start of Construction on the 8 ½ Mile Relief In-system Storage Project we need to bind the liability coverage for this work. Additionally, we have identified an opportunity to add additional projects to this program. The following projects are eligible to be added to the program:

- MID Odor & Corrosion Control
- 9 Mile Pump Station
- Chapaton Canal Upgrades
- Martin In-System Storage

Meadowbrook conducted a market analysis to evaluate the benefits of binding the liability coverage in a single wrap up instead of separate liability policies as was done with the MID Segment 5 and Segment 6 projects. The market analysis evaluated the cost savings by wrapping up the liability coverages for the 8 ½ Mile Relief In-System Storage, 9 Mile Pump Station and MID Odor & Corrosion Control projects, it has not yet factored in the Chapaton Canal Upgrades and Martin In-System Storage projects. The market analysis identified a potential savings of nearly \$700,000.

**The action is that the Board authorize the Board Chair to bind the required coverages if required prior to the April 2022 Board meeting, subject to the Board receiving an update on premium costs and allocation by project.**

Attachments: Meadowbrook Insurance Agency Market Analysis

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Policy Description	13.5M Project	25.4M Project	10M Project	40M Project	15M Project	65M Project
	Actual	Actual	Estimated	Estimated	Estimated	Estimated
GL Rate	7.39	4.73	10.00	4.00	6.70	4.00
General Liability	\$ 103,277	\$ 123,913	\$ 103,277	\$ 160,000	\$ 103,277	\$ 276,000
Excess Liability (1st Layer)						
5M X Primary	\$ 78,412	\$ 83,117				N/A
8M X Primary	N/A	N/A	\$ 100,000	\$ 200,000	\$ 105,000	\$ 221,000
Excess Liability (2nd Layer)						
5M x 5M	\$ 47,508	\$ 49,092				N/A
15M x 8M	N/A	N/A	\$ 125,000	\$ 150,000	\$ 130,000	\$ 165,000
Excess Liability (3rd Layer)						
10M x 10M	\$ 75,573	\$ 69,252				N/A
25M x 23M	N/A	N/A	\$ 75,000	\$ 155,000	\$ 95,000	\$ 165,000
Excess Liability (4th Layer)						
15M x 20M	\$ 71,260	\$ 67,291				N/A
Excess Liability (5th Layer)						
15M x 35M	\$ 56,375	\$ 51,250				N/A
<b>Total Liability Premiums</b>	<b>\$ 432,405</b>	<b>\$ 443,915</b>	<b>\$ 403,277</b>	<b>\$ 665,000</b>	<b>\$ 433,277</b>	<b>\$ 827,000</b>
<b>Total Limit of Liability</b>	<b>\$52M</b>	<b>\$52M</b>	<b>\$52M</b>	<b>\$52M</b>	<b>\$52M</b>	<b>\$52M</b>
<b>Total Liability Cost per \$1000 of CV</b>	<b>\$ 32.03</b>	<b>\$ 17.48</b>	<b>\$ 40.30</b>	<b>\$ 16.62</b>	<b>\$ 28.88</b>	<b>\$ 12.7</b>



**Candice S. Miller**

Public Works Commissioner  
Macomb County

To: Macomb Interceptor Drain Drainage District Board Members

CC: FILE

From: Stephen Downing, Construction & Maintenance Manager

Date: March 14, 2022

Subject: Drop Shaft Rehabilitation Change Order Request – NTH Design

On November 14, 2029, the Board authorized entering a contract with Inland Waters Pollution Control for the lump sum of \$918,475 for the rehabilitation of the MA-S-2, CT-S-2 and HR-S-2 Drop Shafts and Connecting Sewers designed by NTH Consultants. The project was originally scheduled to start in February of 2020 which coincides with the beginning of the COVID-19 Pandemic. As a result, this project experienced multiple delays for various reasons related to the COVID-19 Pandemic. The Contractor achieved substantial completion in June 2021 which was approximately 1-year after the originally schedule date.

The IWPC Change Order No. 1 is a deduct change order to zero out unused allowances and to remove the 2-year warranty inspections from their contract. The attached change order summarizes the deducts which total \$117,000.

The IWPC Change Order No. 2 is an add change order related a claim submitted by Contractor for additional compensation for several reasons, some of which were valid additional costs and some of which were reviewed and denied. The NTH Memo revised October 28, 2021, provides a full description of these claims.

The NTH Change Order No. 1 stems from the extended construction schedule and added scope during the design phase related to the Drop Bowls. The attached NTH Memo provides a detailed breakdown of the additional costs incurred.

At the time of award for this project and the AEW designed project we were \$3,233,403.00 under the budgeted amount. The recommended change orders result in a net increase in cost to the MID of \$5,660.39.

The recommendation is that the Macomb Interceptor Drain Drainage District Board approve Inland Waters Pollution Control Change Order No. 1 for the net decrease of \$117,000.

The recommendation is that the Macomb Interceptor Drain Drainage District Board approve Inland Waters Pollution Control Change Order No. 2 for the net increase of \$64,740.39.

The recommendation is that the Macomb Interceptor Drain Drainage District Board approve NTH Consultants Change Order No. 1 for the net increase of \$57,920.00

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**ENGINEERING** • Phone: 586-469-5910 • Fax: 586-469-7693 ♦ **SOIL EROSION** • Phone: 586-469-5327 • Fax 586-307-8264

Attachments: Drop Shaft Rehabilitation Award Recommendation Memo 11-14-19  
IWPC Change Order No. 1  
IWPC Change Order No. 2  
NTH Change Order No. 1

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**Candice S. Miller**

Public Works Commissioner  
Macomb County

**To: Macomb Interceptor Drain Drainage District Board Members**

**CC: FILE**

**From: Stephen Downing, Construction & Maintenance Manager**

**Date: November 14, 2019**

**Subject: Drop Shaft Rehabilitation Award Recommendation – NTH Design**

The MIDDD budgeted in 2017/2018 and 2018/2019 for the rehabilitation of the six meter facilities that were rated as critical in the 2015 SAW Grant inspection. The budget for the design, construction and engineering oversight for the rehabilitation of the six meter facility drop shafts and connecting sewers is \$6,000,000. The design and construction administration was awarded in 2018 to two consultants, splitting the project into three sites each. The total cost for the engineering and construction administration is \$690,975, which leaves a remaining budget of \$5,309,025 for construction costs.

The Macomb County Public Works Office (MCPWO) solicited bids on the Michigan Inter-governmental Trade Network (MITN) for the rehabilitation of the drop shaft and connecting sewer at metering facilities MA-S-2, CT-S-2 and HR-S-2. The rehabilitation work includes cleaning and lining the drop manhole and connecting sewer, installation of new access hatches, installation of an energy dissipation unit to reduce H<sub>2</sub>S Gas generation and temporary by-pass pumping to facilitate the work.

The Request for Bid (RFB) was issued on MITN from 10-15-19 to 11-4-19 to 1561 Suppliers. A total of 57 suppliers downloaded the project documents. On 11-4-19 a bid was received from Inland Waters Pollution Control for a total of \$918,475. The design engineer, NTH, has reviewed and discussed the bid tabulation with Inland Waters Pollution Control to verify the full scope of services was considered in the bid. NTH has confirmed the bid is reasonable for the scope of services described in the construction drawings and specifications. The NTH construction cost estimate was \$1,550,249.36 which calculates an initial difference of \$634,774.36, a bid summary is attached for reference.

Upon approval of the award recommendation of both Drop Shaft Rehabilitation projects to Inland Waters Pollution Control, we will be \$3,233,403 under budget. The award recommendation for the AEW design is submitted in a separate memo.

**The recommendation is that the Macomb Interceptor Drain Drainage District Board accept the bid and enter an agreement with Inland Water Pollution Control to rehabilitate the meter facility drop shaft and connecting sewer at the above noted facilities for a total of \$918,475.**

Attachments: NTH Award Recommendation  
Bid Tabulation Summary

**OFFICE LOCATION:** 21777 Dunham Road, Clinton Township, Michigan 48036 • Phone: 586-469-5325 • Fax: 586-469-5933

**MAILING ADDRESS:** P. O. Box 806, Mt. Clemens, Michigan 48046-0806

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**NTH Consultants, Ltd.**

Infrastructure Engineering  
and Environmental Services

41780 Six Mile Road, Suite 200  
Northville, MI 48168  
248.553.6300  
248.324.5179 Fax

Mr. Stephen Downing  
Construction and Maintenance Manager  
Macomb County Department of Public Works  
21777 Dunham Road  
Clinton Township, MI 48043

November 13, 2019  
NTH Project No. 61-180042-300

**Re: Recommendation for Award of Construction Contract  
Metering Facility Drop Shaft and Connecting Sewer Rehabilitation  
Macomb County Project Number WWS-2019-020**

Dear Mr. Downing:

NTH Consultants, Ltd. has reviewed the bid submitted by Inland Waters Pollution Control, Inc. (IWPC) on Monday, November 4, 2019 to the Macomb County Public Works Office for the repairs to Drop Structures CT-S-2, HR-S-2 and MA-S-2 in response to the solicitation for Contract Number WWS-2019-020. In our opinion, the submitted bid is responsive and responsible, and address the items required in the bidding documents, including Addendum Number 1.

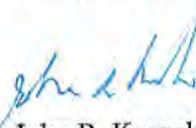
IWPC has provided confirmation that the entire scope of work as specified in the bidding documents is included in their bid price. The bid price provided by IWPC is below the engineer's estimate of probable construction costs.

As such, we recommend award of Contract Number WWS-2019-020 to IWPC for a Total Base Bid Price of \$918,475.00.

If you have any questions about the information provided, please contact me at 248.662.2725 or [jkosnak@nthconsultants.com](mailto:jkosnak@nthconsultants.com).

Sincerely,

NTH Consultants, Ltd.

  
John R. Kosnak, P.E.  
Principal Engineer

  
Jason R. Edberg, P.E.  
Senior Vice President

JRK/JRE/mlk

Macomb Drop Structure Rehabilitation - IWPC Bid Analysis

Item No.	Description	Estimated Quantity	Inland Proposal		NTH Estimate		Difference (Inland - NTH)	
			Unit	Bid Unit Price (\$/Unit)	Bid Amount (\$)	Unit	Bid Unit Price (\$/Unit)	Bid Amount (\$)
1	Mobilization/Demobilization	1	LS	\$ 40,000.00	\$ 40,000.00	\$ 70,000.00	\$ (30,000.00)	-42.5%
2	Permit Allowance	1	EA	\$ 45,000.00	\$ 45,000.00	\$ 15,000.00	\$ 30,000.00	200.0%
3	Videos - Surfaces, Progress Videos in Work Areas (3 sites)	3	EA	\$ 800.00	\$ 1,800.00	\$ 5,000.00	\$ (4,400.00)	-88.0%
4	Traffic Control (3 sites)	3	EA	\$ 2,500.00	\$ 7,500.00	\$ 3,000.00	\$ (600.00)	-18.7%
5A	Bypass Pumping Operations, Site CT-S-2	1	LS	\$ 100,000.00	\$ 100,000.00	\$ 179,300.00	\$ (79,300.00)	-44.2%
5B	Bypass Pumping Operations, Site HR-S-2	1	LS	\$ 72,000.00	\$ 72,000.00	\$ 146,850.00	\$ (74,850.00)	-51.0%
5C	Bypass Pumping Operations, Site MA-S-2	1	LS	\$ 185,000.00	\$ 185,000.00	\$ 271,150.00	\$ (86,150.00)	-31.8%
6A	Drop Manhole Reconstruction, Site CT-S-2 (Geopolymer)	1	LS	\$ 79,500.00	\$ 79,500.00	\$ 164,066.33	\$ (84,566.33)	-51.5%
6B	Drop Manhole Reconstruction, Site HR-S-2 (Geopolymer)	1	LS	\$ 78,500.00	\$ 78,500.00	\$ 164,498.51	\$ (85,998.51)	-52.3%
6C	Drop Manhole Reconstruction, Site MA-S-2 (Geopolymer)	1	LS	\$ 77,500.00	\$ 77,500.00	\$ 151,821.23	\$ (74,321.23)	-49.0%
7A	Adit Sewer Restoration/Lining, Site CT-S-2 (Geopolymer)	1	LS	\$ 31,000.00	\$ 31,000.00	\$ 45,883.11	\$ (14,883.11)	-32.4%
7B	Adit Sewer Restoration/Lining, Site HR-S-2 (Geopolymer)	1	LS	\$ 37,500.00	\$ 37,500.00	\$ 66,255.43	\$ (28,755.43)	-33.3%
7C	Adit Sewer Restoration/Lining, Site MA-S-2 (Geopolymer)	1	LS	\$ 44,000.00	\$ 44,000.00	\$ 59,424.75	\$ (15,424.75)	-26.0%
8A	Engineer Directed Concrete Repairs (Estimated)	50	SQFT	\$ 300.00	\$ 15,000.00	\$ 500.00	\$ (200.00)	-40.0%
8B	Engineer Directed Chemical Grouting (Estimated)	300	GAL	\$ 125.00	\$ 37,500.00	\$ 27,000.00	\$ 10,500.00	38.9%
9	Site Restoration at Existing Manholes	1	LS	\$ 17,000.00	\$ 17,000.00	\$ 30,000.00	\$ (13,000.00)	-43.3%
10A	2-Year Warranty Inspection, Site CT-S-2 (include bypass pumping)	1	LS	\$ 13,500.00	\$ 13,500.00	\$ 34,708.09	\$ (21,208.09)	-51.1%
10B	2-Year Warranty Inspection, Site HR-S-2 (include bypass pumping)	1	LS	\$ 10,500.00	\$ 10,500.00	\$ 26,995.18	\$ (16,495.18)	-51.1%
10C	2-Year Warranty Inspection, Site MA-S-2 (include bypass pumping)	1	LS	\$ 22,875.00	\$ 22,875.00	\$ 50,296.73	\$ (27,421.73)	-51.1%
11	CCTV under 21 Mile Road at MA-S-2	1	LS	\$ 3,000.00	\$ 3,000.00			
A1	Drop Manhole Reconstruction, Site MA-S-2 (including Option B Energy Dissipation (with deduct to exclude Option A Energy Dissipation))	1	LS	\$ 75,000.00	\$ 75,000.00			
				TOTALS (includes option A1)	\$ 989,475.00	\$ 1,550,249.36	\$ (634,774.36)	
				TOTAL without option A1	\$ 918,475.00	\$ 1,550,249.36	\$ (634,774.36)	

\*\* Includes energy dissipation and manhole access hatch precast cost, \$54,400 + \$41,250 per location, along with coating cost of \$72.00/SF

\*\* NTH assumed \$72.00/SF for Option A silt coating

\*\*\* For comparison, NTH LLS estimates for overall warranty was distributed per ratio of Inland 10A - 10C price

\*\*\*\* Permit allowance was listed in the Bid Documents at \$45,000 we did not update the Engineer's Estimate to reflect the difference.

† CCTV under 21 Mile Road at MA-S-2 was not included in Engineer's Estimate by NTH; it is considered as an additional work item

‡ Item A1 is an alternative option for Item 6C; Engineer's Estimate did not include a cost for this item

**CHANGE ORDER NO.: 1**

Owner: Macomb Interceptor Drain Drainage District      Owner's Project No.: WWS-2019-020  
 Engineer: NTH Consultants, Ltd      Engineer's Project No.: 61-180042-400  
 Contractor: Inland Waters Pollution Control      Contractor's Project No.:  
 Project: Metering Facility Drop Shaft and Connecting Sewer Rehabilitation  
 Contract Name:  
 Date Issued: December 1, 2021      Effective Date of Change Order: December 1, 2021

The Contract is modified as follows upon execution of this Change Order:

Description: **Revision of Contract Price to deduct unused allowance items and remove the 2-year warranty inspection. The items include deducting \$33,450 from Item #3 Permit Allowance and \$36,875 from item #8b Chemical Grouting and removal of Warranty Inspection Items 10A - \$13,500, 10B - \$10,500 and 10C - \$22,675.**

Attachments: N/A

N/A Change in Contract Price	Change in Contract Times [State Contract Times as either a specific date or a number of days]
Original Contract Price: \$ 915,975.00	Original Contract Times: Substantial Completion: _____ Ready for final payment: _____
<b>Increase /Decrease</b> from previously approved Change Orders No. 0 to No. 1: \$ 0.00	<b>[Increase] [Decrease]</b> from previously approved Change Orders No.1 to No. <b>[Number of previous Change Order]</b> : Substantial Completion: _____ Ready for final payment: _____
Contract Price prior to this Change Order: \$ 915,975.00	Contract Times prior to this Change Order: Substantial Completion: _____ Ready for final payment: _____
<b>Decrease from</b> this Change Order: \$ 117,000.00	<b>[Increase] [Decrease]</b> this Change Order: Substantial Completion: _____ Ready for final payment: _____
Contract Price incorporating this Change Order: \$ 798,975.00	Contract Times with all approved Change Orders: Substantial Completion: _____ Ready for final payment: _____

**Recommended by Engineer (if required)**

By: John Koznak  
 Title: Principal Engineer  
 Date: November 3, 2021

**Authorized by Owner**

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Authorized by Owner**

By: \_\_\_\_\_  
 Title: \_\_\_\_\_  
 Date: \_\_\_\_\_

**Approved by Funding Agency (if applicable)**

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_





**CHANGE ORDER NO.: 2**

Owner: Macomb Interceptor Drain Drainage District      Owner's Project No.: WWS-2019-020  
 Engineer: NTH Consultants, Ltd      Engineer's Project No.: 61-180042-400  
 Contractor: Inland Waters Pollution Control      Contractor's Project No.:  
 Project: Metering Facility Drop Shaft and Connecting Sewer Rehabilitation  
 Contract Name:  
 Date Issued: December 1, 2021      Effective Date of Change Order: December 1, 2021

The Contract is modified as follows upon execution of this Change Order:

Description: **Revisions in Contract Price based on NTH letter dated (revised) October 28, 2021**

Attachments: **NTH Letter: Reply to IWPC dated October 28, 2021**

Change in Contract Price	Change in Contract Times [State Contract Times as either a specific date or a number of days]
Original Contract Price: \$ <u>915,975.00</u>	Original Contract Times: Substantial Completion: _____ Ready for final payment: _____
<b>Decrease</b> from previously approved Change Orders No. 0 to No. 1: \$ <u>117,000.00</u>	<b>[Increase] [Decrease]</b> from previously approved Change Orders No.1 to No. <b>[Number of previous Change Order]</b> : Substantial Completion: _____ Ready for final payment: _____
Contract Price prior to this Change Order: \$ <u>798,975.00</u>	Contract Times prior to this Change Order: Substantial Completion: _____ Ready for final payment: _____
<b>Increase</b> this Change Order: \$ <u>64,740.39</u>	<b>[Increase] [Decrease]</b> this Change Order: Substantial Completion: _____ Ready for final payment: _____
Contract Price incorporating this Change Order: \$ <u>863,715.39</u>	Contract Times with all approved Change Orders: Substantial Completion: _____ Ready for final payment: _____

<b>Recommended by Engineer (if required)</b>	<b>Authorized by Owner</b>
By: <u>John Koznak</u>	_____
Title: <u>Principal Engineer</u>	_____
Date: _____	_____
<b>Authorized by Owner</b>	<b>Approved by Funding Agency (if applicable)</b>
By: _____	_____
Title: _____	_____
Date: _____	_____



**NTH Consultants, Ltd.**

Infrastructure Engineering  
and Environmental Services

41780 Six Mile Road, Suite 200  
Northville, MI 48168  
248.553.6300  
248.324.5179 Fax

Mr. Stephen Downing  
Construction and Maintenance Manager  
Macomb County Department of Public Works  
21777 Dunham Road  
Clinton Township, MI 48043

July 23, 2021  
NTH Project No. 61-180042-400  
*(Revised October 28, 2021)*

**Re: Reply to Inland Waters Pollution Control  
Metering Facility Drop Shaft and Connecting Sewer Rehabilitation  
Macomb County Project Number WWS-2019-020**

Dear Mr. Downing:

NTH Consultants, Ltd. reviewed the Contract Change Order Request and supplemental data provided by Inland Waters Pollution Control (IPR) and supplemental data provided by IPR with you on Tuesday, July 20, 2021. This letter documents the conversation regarding the materials presented and our analysis of the data during the repairs to the Drop Shafts and Connecting Sewer Rehabilitation for Structures CT-S-2, HR-S-2 and MA-S-2. The following sections are separated by structure and follow the item numbers provided by Justin Lonsway (IPR) via e-mail on June 29, 2021. *Note, the revisions are highlighted in bold and italic text.*

#### **Structure CT-S-2:**

##### **Item 1: Platform Removal**

IPR claimed that the platform in structure CT-S-2B was not indicated on the project drawings and the platform required removal to install the bypass pumping suction lines.

Response: CT-S-2 was listed as a 6-foot manhole on the Historical Drawing HD-1 included in the Contract Drawings set. The detail on Sheet HD-2 does not show a platform in the historical drawings. IPR removed an 18-inch-thick reinforced concrete platform to proceed with the scheduled Work. **We recommend approval of the \$5,557.50 change request.**

##### **Item 2: Energy Dissipation Drop Bowl**

IPR claimed they priced the Energy Dissipation Drop Bowl based on a standard drop bowl cost with the assumption that fabrication would not be required. In addition, they are claiming an increase in materials costs due to the spike in costs caused by the COVID-19 Pandemic in 2020.

Response: A standard drop bowl does not exist with the dimensions required for this project. However, during the design phase of the project, Mr. Larry Gilbert (NTH) located several fabricators of steel “domed shape” collector bowls that could be fabricated per the plan sheets to create the oversized energy dissipation bowl. One of the suppliers he initially contacted was the eventual supplier of the dome that IPR used for the unit. Mr. Gilbert also met with local fabricators to confirm they would be able to convert the stainless-steel sphere or dome to the project requirements including the



Mr. Stephen Downing  
July 23, 2021  
(Revised October 28, 2021)

hangers and flanges necessary for installation. This cost information Mr. Gilbert obtained was utilized in the Engineers' estimate of probable construction costs prior to bid. As you are aware, it is typical during the bidding process to omit specific suppliers such that the bidding team can obtain equivalent products from a variety of suppliers.

During the construction phase, Mr. Gilbert worked with IPR to aid them in acquiring the materials for the energy dissipation units. In addition, the change in materials costs was a direct result in the delay for the project by the Contractor and should not be the responsibility of the Owner. ***However, based on conversations with the project team, we understand there was some confusion in the requirements for the height of the bowl which may have caused an increase in fabrication costs. We recommend approval of \$5,000.00 for this request.***

### **Item 3: Permanent Bypass Structure Modifications**

IPR claimed that they were required to perform additional Work to the permanent bypass manholes to complete the bypass pipe configuration.

Response: The Contractor was required to excavate to remove the lids, pump out the manholes and construct temporary safety covers to utilize the structures for the Work. **We recommend approval of the \$5,000.00 change request.**

### **Item 4: Additional EcoCast Geopolymer Application**

During the repairs to CT-S-2, the inlet sewer section from the meter pit to the drop manhole was observed to contain concrete surface damage and projecting reinforcing steel. IPR was directed to perform additional cleaning and repair services for this section of sewer pipe.

Response: **We recommend approval of the \$12,954.00 change request.**

## **Structure HR-S-2**

### **Item 5: Platform removal**

IPR claimed that the platform in structure HR-S-2B was not included for removal on the Contract Drawings as the bypass plugs were to be installed in the suction manhole. However, for safety reasons, the plugs were moved to manhole HR-S-2B which resulted in the removal of an 18-inch-thick concrete platform.

Response: The platform removal was necessary for safety of the workers within the sewer system. **We recommend approval of the \$11,812.21 change request.**

### **Item 6: Energy Dissipation Drop Bowl**

IPR claimed they priced the Energy Dissipation Drop Bowl based on a standard drop bowl cost with the assumption that fabrication would not be required. In addition, they are claiming an increase in materials costs due to the spike in costs caused by the COVID-19 Pandemic in 2020.



Response: A standard drop bowl does not exist with the dimensions required for this project. However, during the design phase of the project, Mr. Larry Gilbert (NTH) located several fabricators of steel “domed shape” collector bowls that could be fabricated per the plan sheets to create the oversized energy dissipation bowl. One of the suppliers he initially contacted was the eventual supplier of the dome that IPR used for the unit. Mr. Gilbert also met with local fabricators to confirm they would be able to convert the stainless-steel sphere or dome to the project requirements including the hangers and flanges necessary for installation. This cost information Mr. Gilbert obtained was utilized in the Engineers’ estimate of probable construction costs prior to bid. As you are aware, it is typical during the bidding process to omit the suppliers such that the bidding team can obtain equivalent products from a variety of suppliers.

During the construction phase, Mr. Gilbert worked with IPR to aid them in acquiring the materials for the energy dissipation units. In addition, the change in materials costs was a direct result in the delay for the project by the Contractor and should not be the responsibility of the Owner. *However, based on conversations with the project team, we understand there was some confusion in the requirements for the height of the bowl which may have caused an increase in fabrication costs. We recommend approval of \$5,000.00 for this request.*

**Item 7: Stabilization around Drop Manhole for installation of new hatch cover**

During the installation of the sleeper slab required for the new hatch cover, it was observed that there was unstable soil and groundwater at the drop manhole. IPR was directed to undercut the soil and place a layer of aggregate and a concrete mud mat to stabilize the installation.

Response: **We recommend approval of the \$5,390.70 change request.**

**Structure MA-S-2**

**Item 8: Permanent Bypass Structural Modifications**

IPR claimed the permanent bypass structures required removal of the concrete covers in order to install the bypass piping to the stubs within the manholes.

Response: The Contract drawings clearly indicate the offset of the inlet bypass pipe at the bottom of the manhole and the opening, frame and cover on the top of the manhole. As such, the manhole cover would require removal for installation of the bypass line.  
**We recommend denial of this claim.**

**Item 9: Chipping epoxy and Additional Cleaning required for insertion of bypass plugs.**

IPR claimed there was additional time and effort required to chip an unknown epoxy coating from the sewer upstream of the meter pit to install their bypass plugs for safe sewer entry.

Response: The back-up documentation supplied by IPR was for a time period from November 2 through November 6, 2020 during daytime hours. However, the Daily Field Reports from the Engineer’s Construction Observer during the same time period indicate the Contractor was working 24-hours per day in this time period to perform the



Mr. Stephen Downing  
July 23, 2021  
(Revised October 28, 2021)

contract required cleaning and installation of the EcoCast Geopolymer liner in the adit pipe. *While there was a mention of epoxy on the time ticket on 11/5/21, there also was comments that the crew had to stop working and deflate the plus due to high water levels. In addition, IPR did not notify the contract team that there was potentially out-of-scope work such that it could be verified by the oversight team. We recommend denial of this claim.*

**Item 10: Vertical Fuse on Bypass Structure**

During installation of the bypass pipe system, IPR noted the stub pipe in the permanent bypass manhole on the north side of Garfield Road did not have the required flange to connect the bypass pipes. A special vertical fuse machine was rented, and the connection established.

*Response: We recommend approval of the \$5,400.98 change request.*

**Item 11: New Hatch and Cover**

During excavation for the sleeper slab at the drop structure for the new hatch and cover, existing utilities were encroaching in the location of the concrete sleeper slab. IPR was directed to cancel the installation of the new hatch and cover and install a new flat top precast manhole cover and rim and cover instead. As the new hatch and cover were purchased and fabricated, the Contractor was directed to deliver the materials to Macomb County at a location to be determined.

Response: the new hatch and cover were covered in the manhole bid items. Other than the cost for labor and delivery to a future location, there should be no additional charges for this item. **We recommend denial of this claim.**

**Item 12: Procurement and installation of the standard flat top**

IPR provided costs for additional excavation and material to provide the flat top for the drop manhole.

Response: The excavation was covered by the contract price for the modifications to the manhole. In addition, the installation of the flat top was offset by the bid price for the installation of the hatch cover. The only additional costs should be the replacement materials and delivery off site of the original flat top frame and cover. **We recommend approval of the materials costs per the backup documents of \$8,625.00**

Based on the above responses and the backup provided by IPR, *we recommend award of a Contract Change Order for Total Price of \$64,740.39.*




Mr. Stephen Downing  
July 23, 2021  
*(Revised October 28, 2021)*


If you have any questions about the information provided, please contact me at 248.662.2725 or [jkosnak@nthconsultants.com](mailto:jkosnak@nthconsultants.com).

Sincerely,

NTH Consultants, Ltd.

DocuSigned by:  
  
08D80029F4504E2...  
John R. Kosnak, P.E.  
Principal Engineer

JRK/LTG/mam

DocuSigned by:  
  
CC824AA61BE2419...  
Lawrence T. Gilbert, P.E.  
Senior Principal Engineer

Date of Issuance: 12/1/2021  
Owner: Macomb Interceptor Drain  
Drainage District  
Engineer: NTH Consultants

Effective Date: 12/1/2021  
Owner's Contract No.: WWS-2018-005B  
Engineer Contract No.: N/A  
Contract Name: Drop Shaft Rehabilitation

The Contract is modified as follows upon execution of this Change Order:

Increase the contract value by \$57,920.00 because delays to the construction schedule and additional design related scope additions. The cost is summarized in the attached NTH Consultants memo.

The original Contract Sum was: \$ 393,975.00

The net change from previously approved Change Orders No.1 to No. 1: \$ 0

The Contract Sum prior to this Change Order: \$ 393,975.00

The Contract Sum prior to this Change Order will be increased by: \$ 57,920.00

The new Contract Sum, including this Change Order, will be: \$ 451,895.00

The Contract Time will be unchanged by: 0 (days)

The date of Substantial Completion as of the date of this Change Order, therefore, is: N/A

ACCEPTED:

By: \_\_\_\_\_  
Owner (Authorized Signature)

ACCEPTED:

By: \_\_\_\_\_  
Engineer (Authorized Signature)

Title \_\_\_\_\_  
Date \_\_\_\_\_

Title \_\_\_\_\_  
Date \_\_\_\_\_



**NTH Consultants, Ltd.**

Infrastructure Engineering  
and Environmental Services

41780 Six Mile Road, Suite 200  
Northville, MI 48168  
248.553.6300  
248.324.5179 Fax

Mr. Stephen Downing  
Construction and Maintenance Manager  
Macomb County Department of Public Works  
21777 Dunham Road  
Clinton Township, MI 48043

April 1, 2021  
NTH Project No. 61-180042-400  
**REVISED Nov. 15, 2021**

**Re: Request for Budget Increase via Change Order  
Metering Facility Drop Shaft and Connecting Sewer Rehabilitation  
Macomb County Project Number WWS-2019-020**

Dear Mr. Downing:

In accordance with our recent discussions, NTH Consultants, Ltd. requests an increase to our existing contract budget to continue field observation and engineering services to complete the rehabilitation of the Drop Shafts and Connecting Sewers at Metering Facilities CT-S-2, MA-S-2 and HR-S-2. As you are aware, Inland Waters Pollution Control (IWPC) has recently submitted a final revised construction schedule indicating their plan to complete the remaining construction items including, but not limited to, fabrication and installation of the energy dissipation units for CT-S-2 and HR-S-2, installation of the new access hatches and concrete sleeper slabs at all three sites, site restoration, and project close out. After completion of their work, NTH will complete the project as-built drawings and project report detailing the work performed by IWPC for your records.

During the design portion of this project, NTH was asked by your staff to perform additional design components which were outside our original project scope including aid in formatting the Contract Front End Documents for use on multiple Macomb County Department of Public Works projects, design of a new entry hatch system which could be used on multiple projects, and design of a specialized energy dissipation system due to the size and configuration of the drop structures. To allow us to invoice for these additional design services, you authorized a transfer of \$10,000 on November 22, 2019 from our construction administration budget with the understanding that we would be eligible for a contract adjustment later in the project if required. As we have discussed over the past few months, NTH has continued to provide the necessary field observation and engineering support, even though we have exhausted our approved budget for this task.

This project has been challenged with many items that have affected our ability to perform the required construction contract administration (CCA) duties within our original budget. Even though we spoke to fabricators during the design of the energy dissipation units, there were delays in the actual fabrication of the units to resolve material issues. The modifications resulted in review of multiple submittals and additional meetings with the contractor and discussions with the fabricator to mitigate potential maintenance issues. In addition, changes to the existing field condition, such as the new Macomb Township sidewalk at MA-S-2 and the requirements to modify the manhole near HR-S-2 to protect a homeowner, have affected the contractor's overall production which has also added to our field oversight schedule.





Mr. Stephen Downing  
April 1, 2021  
*REVISED Nov. 15, 2021*

Based on this information, and the revised schedule from IWPC, **we request an increase of \$57,920.00 to our contract as follows.**

Restoration of the budget transferred to design and increase for services performed through Friday, March 26, 2020	\$14,600.00
Additional CCA duties to complete the project (based on IWPC Schedule)	\$43,320.00

**TOTAL REQUESTED INCREASE \$57,920.00**

We have attached a Custom Fee Schedule spread sheet to show the estimated effort to complete our CCA and engineering support services for this project.

If you have any questions about the information provided, please contact me at 248.662.2725 or [jkosnak@nthconsultants.com](mailto:jkosnak@nthconsultants.com).

Sincerely,

NTH Consultants, Ltd.

John R. Kosnak, P.E.  
Principal Engineer

Jason R. Edberg, P.E.  
Senior Vice President

JRK/JRE/dc  
Attachment

MACOMB INTERCEPTOR DRAIN  
02.15.22 - 03.08.22

<u>Funding Source</u>	<u>Apportionment</u>	<u>Manager</u>	<u>Vendor</u>	<u>Amount</u>	<u>Invoice Detail</u>	<u>Project Summary</u>	<u>Project Balance</u>	
<b>Macomb Interceptor Drain</b>	Chapter 20							
	Chesterfield – 7.3432%							
	Clinton – 21.3460%							
	Fraser – 4.1370%							
	Harrison – 6.4221%							
	Lenox – 1.0652%							
	Macomb – 13.9284%							
	New Haven – .8271%							
	Shelby – 9.7757%							
	Sterling Heights – 30.7833%							
	Utica – 1.6268%							
	Washington – 2.7451%							
			Baker	Aloia & Associates, P.C.	\$ 769.50	Invoice #25510 - 01.01.22	Sale of 45345 Garfield Road - December 2021	
			Downing	Anderson, Eckstein & Westrick	\$ 25,315.10	Invoice #135867 - 02.22.22	MID Grouting Program	\$ 30,536.10
			Astorino	Aquasight	\$ 119,530.00	Invoice #000680 - 02.09.22	COVID-19 Monitoring - (Grant Funded)	\$ 797,222.00
			Astorino	Aquasight	\$ 119,530.00	Invoice #000686 - 03.03.22	Covid-19 Monitoring - Grant	\$ 677,692.00
			Astorino	City of Mt. Clemens	\$ 16,991.19	Invoice #28004029 - 02.03.22	Monthly Utilities - December 2021	
			Manning	County of Macomb	\$ 430,443.63	Invoice #AR220208 - 02.08.22	4th Quarter Personnel and Operating Expenses	
			Astorino	Fishbeck	\$ 632.00	Invoice #408917 - 02.23.22	GLWA Assistance through 02.18.22	
			Astorino	Fishbeck	\$ 5,486.00	Invoice #408990 - 02.18.22	Inspector/Confined Space/SCADA RFP	\$ 40,673.38
			Astorino	Fishbeck	\$ 8,154.00	Invoice #408918 - 02.23.22	Wastewater Master Plan through 02.18.22	\$ 378,451.49
			Downing	Fishbeck	\$ 21,716.12	Invoice #408921 - 02.23.22	Inspection Program	\$ 166,479.12
			Astorino	Hamlett dba HESCO	\$ 5,000.00	Invoice #2213397 - 01.26.22	Meter Pit Inspection	
			Astorino	KHVPE PLC	\$ 652.50	Invoice #47823 - 02.01.22	General Matters - January 2022	
			Astorino	Macomb County Treasurer	\$ 2,038.99	Invoice #22-034 - 01.21.22	Emergency Truck Signal Lights (21-486 & New Truck - Jarinski)	
			Astorino	METCO Consulting Services	\$ 5,467.96	Invoice #1717-31 - 02.27.22	Flow Control Services	\$ 50,304.50
		Downing	Oscar Renda Contracting	\$ 494,685.00	Invoice #WO19024 - EST#18 - 02.28.22	Romeo Arm Segment 5 Lining through 02.28.22	\$ 19,590,734.21	
		Downing	Ric-Man Construction	\$ 72,518.92	Invoice #WO21026 EST 6 - 02.28.22	Segment 6 Services 02.01.22 - 02.28.22	\$ 11,274,837.64	
		Downing	Tetra Tech, Inc.	\$ 72,144.75	Invoice #51851504 - 02.01.22	Odor & Corrosion Control through 01.28.22	\$ 121,263.63	
		Downing	Tetra Tech, Inc.	\$ 35,147.06	Invoice #51863575 - 02.25.22	Odor & Corrosion Control through 02.25.22	\$ 71,658.52	
<u>CPS</u>		Astorino	Clinton Township Treasurer	\$ 2,481.12	Invoice #22-029 - 02.01.22	Monthly Electric - 12.27.21 - 01.25.22		
		Astorino	DTE Energy	\$ 25,124.36	Invoice #SFSBX-NK390 - 02.03.22	Monthly Electric - 01.04.22 - 02.01.22		
		Astorino	Hamlett dba HESCO	\$ 4,740.00	Invoice #2213382 - 01.17.22	Gate Maintenance		
		Manning	Huntington Nation Bank	\$ 500.00	Invoice #41564 - 01.03.22	Series 2020 Bond Fee		
		Astorino	Spencer Oil Company	\$ 579.80	Invoice #697625 - 01.27.22	Diesel Fuel - Generator		
<u>NGI</u>		Astorino	DTE Energy	\$ 1,297.74	Invoice #SFSBX-NLQK2 - 01.31.22	Monthly Electric - 12.30.21 - 01.28.22		
<b>Total</b>				\$ 1,470,945.74				

**Budget to Actual**  
**MIDD**  
**As of Feb 28, 2022 = 67%**

DESCRIPTION	2022 FINAL BUDGET	ENCUMBERED	ACTUAL	REMAINING BUDGET	PCT UTILIZED
<b>REVENUE ACCOUNTS</b>					
GLWA-OMID	47,284,425		31,525,781	15,758,644	66.7%
OMID O&M	3,827,015		2,551,343	1,275,672	66.7%
Settlement	100,000		427,693	(327,693)	427.7%
Reimbursements	200,000		67,291	132,709	33.6%
PY Revenue-Fund Balance	10,370,340			10,370,340	0.0%
Washington Twp Meter Project	47,470			47,470	0.0%
Reimb-Local Communities	16,476,210		10,984,140	5,492,070	66.7%
COVID Grant	-		889,726		
Interest	60,000		11,544	48,456	19.2%
<b>Total Revenue Accounts</b>	<b>78,365,460</b>	<b>-</b>	<b>46,457,518</b>	<b>32,797,668</b>	<b>59.3%</b>
<b>EXPENSE ACCOUNTS</b>					
GLWA-OMID	47,284,425		31,525,781	15,758,644	66.7%
OMID O&M	3,827,015		2,551,343	1,275,672	66.7%
Public Works Wastewater Disposal Division	1,702,960		1,231,625	471,335	72.3%
Office Operations/Insurance	332,250		124,016	208,234	37.3%
SCADA	280,490		51,715	228,775	18.4%
<b>Engineering</b>					
Replenish reserve from CPS refunding	618,680			618,680	0.0%
Segment 5(Paid from const/ eng reserve)	-		3,918,138	(3,918,138)	0.0%
Segment 6(lawsuit Settlement)	-		2,231,469	(2,231,469)	
GLWA Assistance	40,000		15,525	24,475	38.8%
Repair work stemming from inspection program/Phase III Grout	3,200,000			3,200,000	0.0%
Segment 6 Construction Admin	1,500,000		492,446	1,007,554	32.8%
Odor and Control Construction	6,000,000			6,000,000	0.0%
General Construction/Engineering Contingency-All Projects	225,000			225,000	0.0%
Aquasight-On going improvements to program	175,000		125,884	49,116	71.9%
As Needed Applied Science	25,000			25,000	0.0%
As Needed FK Engineering	60,000			60,000	0.0%
As Needed FTCH	50,000		22,815	27,185	45.6%
As Needed Metco	90,000		38,012	51,988	42.2%
As Needed Wade Trim	70,000		674	69,326	1.0%
Level Sensors/Pressure/H2S-Meters	214,200			214,200	0.0%
Meter Dye Testing(Part of carryforward below)	38,600		69,996	(31,396)	181.3%
Odor and Control-Construction	1,000,000			1,000,000	0.0%
Odor and Corrosion Design	375,260		375,375	(115)	100.0%
COVID Monitoring -Reimburse from grant	-		889,726	(889,726)	100.0%
Phase II Grouting	2,000,000		958,525	1,041,475	47.9%
Phase III Grouting	325,000			325,000	0.0%
Segment 6 Construction Administration	1,503,560			1,503,560	0.0%
SY-S-1, SY-S-2, & WA-S-1 Meter Const Admin/Rehab	1,804,590		565,359	1,239,231	31.3%
Wastewater Master Plan/Contract Capacity	330,050		23,001	307,049	7.0%
Data Review-Aquasight	24,090		22,596	1,494	93.8%
Legal Services	150,000		7,905	142,095	5.3%
Clintondale PS O&M	580,000		171,337	408,663	29.5%
NGI O&M	225,000		65,211	159,789	29.0%
Meters O&M	190,970		43,895	147,075	23.0%
CS-3 O&M	216,000		4,606	211,394	2.1%
Biofilter O&M	26,000		8,349	17,651	32.1%
Contribution Life Cycle Reserve	171,700			171,700	0.0%
Interceptor O&M	1,738,450		41,178	1,697,272	2.4%
Stormwater Pump Stations	91,000		60,667	30,333	66.7%
Sewage Disposal Charges - Mt. Clemens	200,000		109,845	90,155	54.9%
Debt Service - Revenue Bonds	1,680,170		1,120,113	560,057	66.7%
<b>Total Expense Accounts</b>	<b>78,365,460</b>	<b>-</b>	<b>46,867,127</b>	<b>31,498,333</b>	<b>59.8%</b>

	O&M Balance 6/30/2021	O&M	Total 2/28/2022
Cash - Operating	37,753,257	(409,609)	37,343,648
Accounts Receivable			0
Assets			0
Liabilities			0
Revenues		46,457,518	46,457,518
Expenditures		46,867,127	46,867,127
			0
Equity*	37,753,257		37,343,648

**Detail of 2021 Equity\***

Projected reserve at 6/30/2021	8,749,004
Projected Construction/ Engineering Reserve	28,001,153
Life Cycle Reserve	1,003,100