

EIGHT AND ONE-HALF MILE RELIEF DRAIN
INTRA-COUNTY DRAINAGE BOARD
NOVEMBER 14, 2022
10:30 A.M.
AGENDA

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

**Call in Number: 1-307-314-3902
Access Code: 199 831 865**

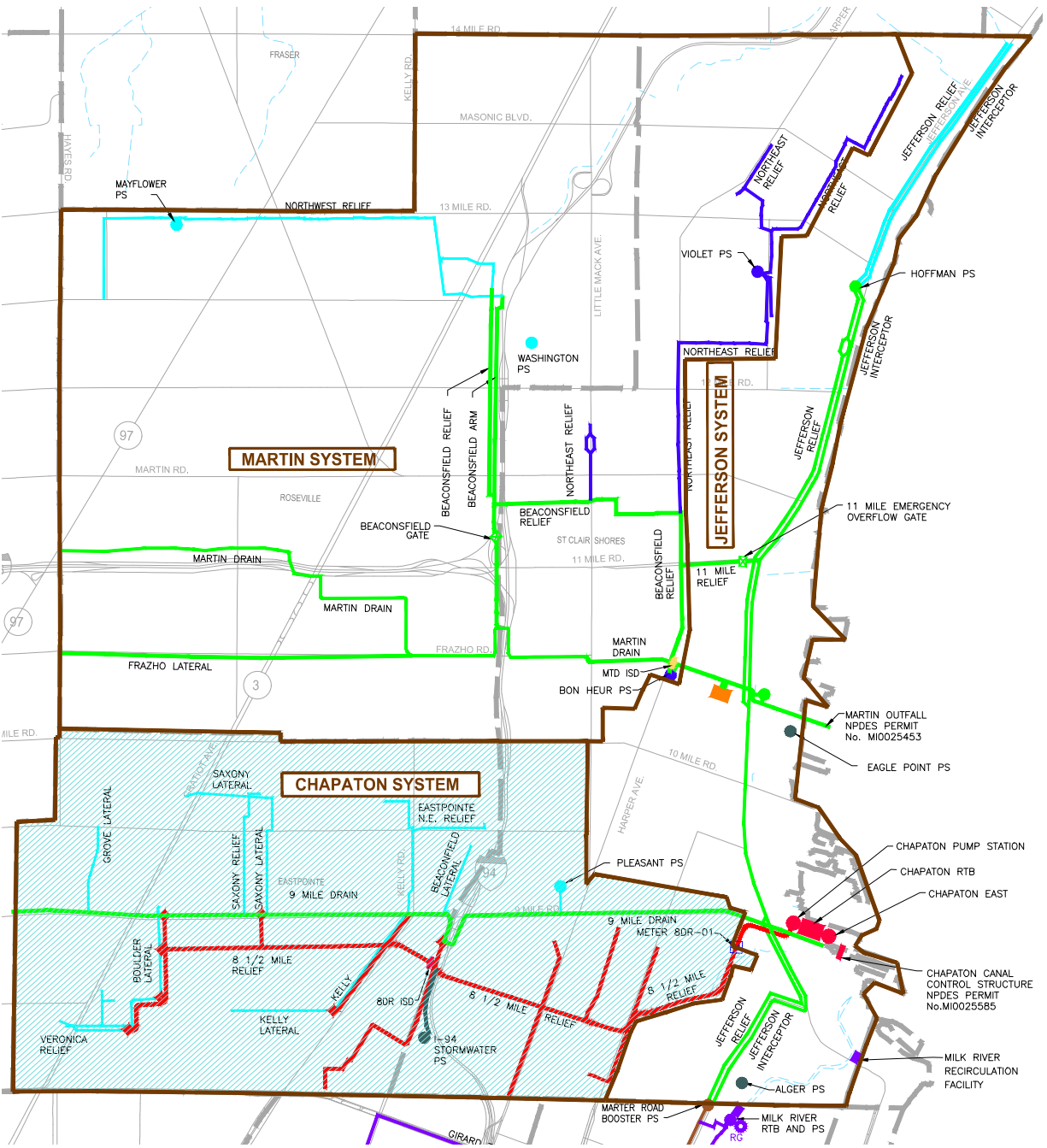
	Page
1. Call of meeting to order and roll call	
2. Approval of Agenda for November 14, 2022	
3. Approval of Minutes for September 12, 2022	3
4. Public Participation	
5. Project & Operational Updates – Vince Astorino	6
6. Chapaton Electrical Upgrades Design Proposal – Vince Astorino	29
Motion: To approve the Tetra Tech design proposal for the Chapaton Electrical Upgrades project for \$225,000.	
7. Chapaton Accusonic Flow Meters – Vince Astorino	32
Motion: To approve the purchase and installation of Chapaton Accusonic Flow Meters from HESCO for \$224,227.38.	
8. Chapaton Sluice Gates Rehabilitation Design Recommendation - Vince Astorino	38
Motion: To award the design of the Chapaton Sluice Gate Rehabilitation project to Anderson, Eckstein & Westrick, Inc. for \$87,600.50	
9. Consideration for approval of invoices (see attached)	47 & 165
10. Financial Report – Bruce Manning	277
11. Adjourn	

Hard copy is intended to be 8.5"x11" when plotted. Scale(s) indicated and graphic quality may not be accurate for any other size.

CHAPATON SYSTEM MAP

Macomb County, MI

Southeast Macomb Sanitary District Wastewater Master Plan



SYSTEM LEGEND
(AS OF DATE OF PUBLICATION)

- SYSTEM BOUNDARY

DISTRICT LEGEND
(AS OF DATE OF PUBLICATION)

- 8 1/2 MILE RELIEF DRAIN DRAINAGE DISTRICT
- SOUTHEAST MACOMB COUNTY WASTEWATER DISPOSAL SYSTEM
- MARTIN SANITARY DIVERSION DISTRICT
- SOUTHEAST MACOMB SANITARY DISTRICT
- NORTHEAST SEWAGE DISPOSAL SYSTEM
- MILK RIVER INTERCOUNTY DRAIN DRAINAGE DISTRICT
- LOCAL MUNICIPALITY
- OTHER

ASSET LEGEND

- PUMP STATION
- FLOW CONTROL STRUCTURE
- RTB
- GRAVITY INTERCEPTOR
- IN-SYSTEM STORAGE DEVICE
- OVERFLOW POINT
- LEVEL SENSOR
- RAIN GAUGE
- FLOW METER

PLOT INFO: Z:\2018\181053\CAD\PRECED\SEMSD_OVERALL.DWG LAYOUT: FIG 3-6_CHAPATON SYS DATE: 7/20/2021 TIME: 1:33:59 PM USER: WESEDK1

PROJECT NO.

181053

3.6

An adjourned meeting of the Intra-County Drainage Board for the **EIGHT AND ONE-HALF MILE RELIEF DRAIN** was held in the Office of the Macomb County Public Works Commissioner, 21777 Dunham Clinton Township, Michigan on September 12, 2022, at 10:02 A.M.

PRESENT: Brian Baker, Acting Chair

 Veronica Klinefelt, Member

 Bryan Santo, Member

ALSO PRESENT: Vince Astorino, Operations & Flow Manager; Stephen Downing, Construction and Maintenance Manager; Norb Franz, Communications Manager; Bruce Manning, Financial Manager; Pam Sonnenberg, Administrative Assistant; Tom Stockel, Construction Supervisor; Don VanSyckel, Macomb County Board of Commissioners

PRESENT VIA TELECONFERENCE: Scott Isenberg, Macomb County Public Works Engineer; Mary Shepard, Environmental and Safety Services Supervisor, City of Sterling Heights

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

Adopted: YEAS: 3
 NAYS: 0

Minutes of the meeting of August 8, 2022 were presented. A motion was made by Ms. Klinefelt, 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. Astorino updated on the Chapaton Basin and said there had been no wet weather events for the past month, however there was a fire on September 2nd around midnight. St. Clair Shores Fire Department was mobilized. It is believed there was a surge from DTE that created a ground fault on the main power feed to the building which then caused damage to the power control transformer on Storm Pump #3. We had a spare transformer on the shelf and were able to have Colville replace the unit by the next afternoon. The last time this occurred, Storm Pump #1 was out of service for over 6 months. There was no damage to the pump.

Mr. Astorino added that they are in the planning phase right now of looking into replacing all of the electrical components at Chapaton as they are from 1968. He said Chapaton has had 3 fires in the last 4 years and believes it is time to update those components.

D'Agostini is doing a really good job on the Chapaton Basin and 9 Mile Drain Structural Repairs project. Repairs consist of chipping away damaged concrete, prepping the reinforcing steel and remaining concrete surfaces, and installing specialized concrete product flush to adjacent surfaces. Mr. VanSyckel asked why it was decided to put the columns back with in the same location as opposed to just moving it over 8 inches. Mr. Astorino said that the location is an ideal spot. He added that the contractor has to be done by October 1st.

The In-System Storage project is moving very well. DTE has relocated the power lines through the church parking lot. All of the utilities are out of the way, the fencing has been done and the site overall looks good. Weiss went into the tunnel and installed all of the ribbing which will provide extra structural support to the tunnel. He showed photos of the location where concrete will be removed and the drilling has now begun. Mr. Astorino has programmed our drone to record in the same location once a week to show progress. Site security has been pretty good, the gates are closed throughout the day.

A motion was made by Ms. Klinefelt, supported by Mr. Santo to receive and file project updates.

Adopted: YEAS: 3
NAYS: 0

Mr. Astorino presented a Change Order #1 from Weiss Construction regarding the 8-1/2 Mile Relief In-System Storage project. Over the course of the contract, there has been several changes resulting in a net increase of \$269,666.49. The DTE Power relocation resulted in an increase of \$190,864.90 which was not identified during the design. The Inflatable Bladder cost increased by \$123,500 due to various global supply chain issues as well as the Russia-Ukraine conflict. Finally, the ventilation and odor control at the Gaukler site was originally designed with a carbon canister and vent stack fenced in and above ground. After discussions with St. Clair Shores, they requested not to have the carbon canister above ground. MCPWO worked with Weiss to obtain costs to bury the canister and that cost was \$335,766. The decision was made to remove the canister and now the site will only have a vent stack that will activate only if there is an emergency which resulted in a credit of (\$35,686.93). Ms. Klinefelt asked if there will be any issues with removing the carbon canister and Mr. Astorino replied that he doesn't anticipate any issues, it was just an extra measure.

A motion was made by Ms. Klinefelt, supported by Mr. Santo to approve Change Order No. 1 with Weiss Construction for a net increase of \$269,666.49 and an additional 70 days for the In-System Storage project.

Adopted: YEAS: 3
NAYS: 0

The Chair presented the invoices totaling \$906,384.52 to the board for review and approval.

A motion was made by Ms. Klinefelt, supported by Mr. Santo 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 Ms. Klinefelt and supported by Mr. Santo.

Adopted: YEAS: 3
NAYS: 0

There being no further business, it was moved by Mr. Santo, supported by Mr. Baker, that the meeting of the Eight and One-Half Mile Relief Drain Board be adjourned.

Adopted: YEAS: 3
NAYS: 0

The meeting was adjourned at 10:22 A.M.



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 September 12, 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.



Brian Baker, Acting Chair
Macomb County Public Works Chief Deputy

DATED: 09/12/22



Candice S. Miller

Public Works Commissioner
Macomb County

To: 8 ½ Mile Relief Drain Drainage District Board Members

CC: File

From: Vincent Astorino, Operations & Flow Manager

Date: November 14, 2022

Subject: Construction Projects Status Updates for the November 2022 Board Meeting

The following provides a status update for construction work completed within the 8 ½ Mile Relief Drain Drainage District (8MRDDD) for the previous month.

Wet Weather Operations

No wet weather events this past month.

Chapaton In-System Storage Project

Contractor: Weiss Construction

Engineering Consultant: Tetra Tech

Project Description:

The primary focus of the project is the construction of an access shaft and installation of the In-System Storage Device at Beaconsfield and Oak in Eastpointe. This project will achieve an additional 3.5 million gallons of storage within the 8.5 Mile Relief tunnel.

Significant project tasks that have occurred over the past month:

1. Submittals are being received and processed by the engineering team.
2. Construction activities per Update Period:
 - Continued staging construction materials delivered & stored along Beaconsfield greenbelt.
 - Maintain secured work site with swing gates and privacy fence screening at Beaconsfield construction site.

- Completed the task of drilling and installing I-beam piers for shaft construction (46 each) and control building (10 each) at Beaconsfield construction site as planned.
- Completed encasing installed I-beam piers in concrete at Beaconsfield construction site as required.
- Installed steel safety guard and cable around perimeter of proposed shaft at Beaconsfield construction site as required.
- Excavated interior of shaft approximately 10 ft below grade to expose 11.5 ft tunnel at Beaconsfield site.
- Installed timber lagging retaining walls around interior of Beaconsfield shaft as required.
- Fabricated steel shaft bracing for top tier elevation at Beaconsfield construction site as designed.
- Continued Beaconsfield site vibration and sensor monitoring and documentation during pier installation and shaft construction as required.

3. Construction look ahead:

- Beaconsfield & Oak: Continue deliveries of construction materials along Beaconsfield greenbelt.
- Continuing excavation to expose 11FT tunnel at Beaconsfield and remove spoils offsite as planned.
- Continue to install shaft interior timber lagging retaining walls as required.
- Install mid-level steel bracing and supports per plans at Beaconsfield shaft construction.
- Layout and place electrical duct banks as proposed.
- Remove and replace concrete sidewalk and driveway approach for resident at 219613 Beaconsfield as required.
- Continue site vibration monitoring & documentation.

Construction Costs:

	Date (if applicable)	Amount
Original Contract Amount		\$9,673,200.00
Change Order #1	9/15/22	\$269,666.49
Revised Contract Amount		\$9,942,866.49
Total Spent to Date	Pay Apps. #1 - 7	\$2,297,601.79
Remaining Budget		\$7,645,264.70

Figure 1 – Beaconsfield Shaft Excavation



Figure 2 – Installing Timber Retaining Walls



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

Figure 3 – Top Tier Bracing and Support Layout



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

Figure 4 – Installed Safety Railing



Figure 6 – Shaft Excavation @ Approx. 10ft



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

Figure 7 – Drone Aerial at 200 FT



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



Candice S. Miller

Public Works Commissioner
Macomb County

October 17, 2022

FOR IMMEDIATE RELEASE

Contact: Norb Franz, Macomb County Public Works communications manager
586-201-5732 norb.franz@macombgov.org

Critical project will reduce combined sewer overflows

A new major underground infrastructure project launched in Macomb County will result in fewer discharges of combined sewer overflows into Lake St. Clair following wet weather, Macomb County Public Works Commissioner Candice S. Miller announced Thursday.

“This is a very important project for us in Macomb County,” Miller said. “We are absolutely committed to reducing CSO’s. This project is all about clean water. Clean water equals quality of life.”

Known as the “in-system storage” project, an inflatable rubber dam will be installed inside the 11 1/2-foot-diameter 8 ½ Mile Relief Drain sewer interceptor that conveys the combined stormwater and sanitary sewage from all of Eastpointe and most of St. Clair Shores. When inflated during wet weather, the device acts as a weir to temporarily hold back, or “store”, up to 3.5 million gallons upstream of the dam. As the dam is deflated, the flow is gradually released and continues toward the Great Lakes Water Authority’s wastewater plant in Detroit for full chemical treatment -- instead of discharging it into the Chapaton Retention Basin on Nine Mile Road at Jefferson Avenue. When capacity in the underground basin at Chapaton is exceeded, the combined sewer overflow is treated with chlorine before being discharged into Lake St. Clair.

On Beaconsfield Avenue at Oak Avenue near Interstate 94 in Eastpointe, excavation of a rectangular access shaft which will be about 70 feet by 50 feet has begun. The shaft will be dug to a depth of 35 feet in order to reach the large interceptor pipe and cut away a section of the top of the pipe to install the device. Once installed, the bladder inflates in less than 10 minutes and can be operated remotely by the Macomb County Public Works operations team.

The project follows an engineering study that found CSO’s can be reduced by using space upstream in the interceptor to temporarily store the flow as wet weather and flow volume allows, to reduce overflows into the giant underground basin at the Chapaton Pump Station.

During dry weather, the dam remains deflated to allow for normal flow to the Detroit facility.

During rain events, the bladder can be inflated to temporarily hold back the flow to reduce combined sewage overflows.

The project will increase upstream storage volume of 3.5 million gallons without an increased risk of basement flooding in the area and is expected to reduce overflows by 15%. Coupled with earlier operational changes inside the Chapaton Pump Station, CSO’s will be reduced by approximately 40%.

“Every gallon counts,” Miller said. “The engineering study that we initiated for this project is another example of our office being proactive. Combined sewer overflows are permitted by the state, and it’s been going on for decades. However, we just can’t keep doing things the same way. We want to improve Lake St. Clair and protect it for generations to come.”

The project construction cost is \$9.9 million, and will be paid using federal, state and county funding under the American Rescue Plan Act with no anticipation of a sewer rate increase for residents and businesses in Eastpointe and St. Clair Shores. The 8 ½ Mile Drain Drainage District serves a total of 92,000 people in the two cities.

Construction is expected to be substantially complete by the end of 2023.

PHOTOS: A construction crew works at Beaconsfield Avenue near Nine Mile Road in Eastpointe as part of a critical sewer project that will reduce discharges of combined sewer overflows into Lake St. Clair.

VIDEO: Macomb County Public Works Commissioner Candice S. Miller discusses the “in-system storage” sewer project that will reduce combined sewer overflows into Lake St. Clair.

<https://youtu.be/hrG3XcTLijQ>





Candice S. Miller

Public Works Commissioner
Macomb County

To: 8 ½ Mile Relief Drain Drainage District Board Members

CC: File

From: Vincent Astorino, Operations & Flow Manager

Date: October 24, 2022

Subject: Construction Projects Status Updates for the October 2022 Board Meeting

The following provides a status update for construction work completed within the 8 ½ Mile Relief Drain Drainage District (8MRDDD) for the previous month.

Wet Weather Operations

No wet weather events this past month.

Chapaton Basin and 9 Mile Drain Structural Repairs Project

Contractor: Pullman / L. D'Agostini & Sons

Engineering Consultant: NTH

Project Description:

This project consists of performing concrete repairs within the Chapaton RTB (constructed in 1968) and the 9-Mile Drain (constructed in 1926). Recent inspections were performed and various types of repairs in numerous locations were noted in the reports. Repairs primarily consist of chipping away damaged concrete, prepping the reinforcing steel and remaining concrete surfaces, and installing a specialized concrete product flush to adjacent surfaces.

Significant project tasks that have occurred over the past month:

- Contractor completed 15 concrete repairs at expansion joints located on the North and South walls of the Chapaton RTB.
- Finalized contractual items and closed-out project.

Construction Costs:

	Date (if applicable)	Amount
Pullman Final Amount		\$474,913.50
Original LDS Contract Amount		\$258,050.00
Change Order #1	10/05/22	(\$22,950.00)
Revised Contract Amount		\$235,100.00
Total Spent to Date	Pay Apps #1-2	\$235,100.00
Remaining Budget		\$0.00

Figure 1- Temporary Pipe Supports



Figure 2 - Preparing Joint for Concrete Fill

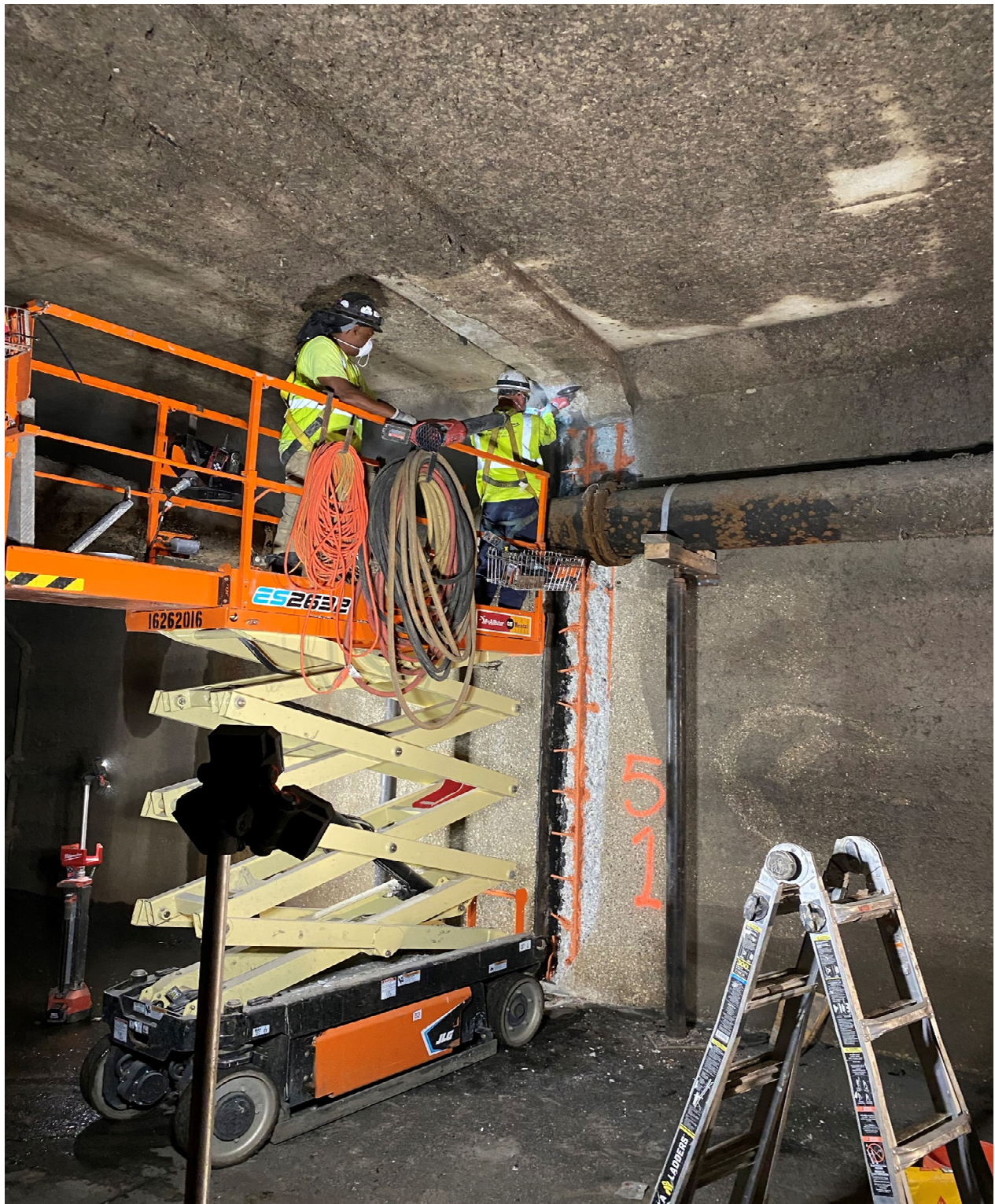


Figure 3 – Fabricating Flushing Pipe Support Beams



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

Figure 4 - Concrete Patch Repair



Figure 5 – Before & After Repair



Chapaton In-System Storage Project

Contractor: Weiss Construction

Engineering Consultant: Tetra Tech

Project Description:

The primary focus of the project is the construction of an access shaft and installation of the In-System Storage Device at Beaconsfield and Oak in Eastpointe. This project will achieve an additional 3.5 million gallons of storage within the 8.5 Mile Relief tunnel.

Significant project tasks that have occurred over the past month:

1. Submittals are being received and processed by the engineering team.
2. Construction activities per Update Period:
 - Continued staging of steel and other construction materials delivered & stored along Beaconsfield greenbelt.
 - Maintain secured work site with swing gates and privacy fence screening.
 - Drilled and installed I-beam piers for shaft construction (46 each) and control building (10 each) at Beaconsfield construction site as planned.
 - Encased installed I-beam piers in concrete at Beaconsfield construction site as required.
 - Continued site vibration and sensor monitoring during pier installation as required.
3. Construction look ahead:
 - Beaconsfield & Oak: Continue deliveries of construction materials along Beaconsfield greenbelt.
 - Excavation to expose 11FT tunnel at Beaconsfield.
 - Install Steel bracing and lagging per plans during shaft excavation at Beaconsfield.
 - Layout and place electrical duct banks as proposed.
 - Continue site vibration monitoring & documentation.

Construction Costs:

	Date (if applicable)	Amount
Original Contract Amount		\$9,673,200.00
Change Order #1	9/15/22	\$269,666.49
Revised Contract Amount		\$9,942,866.49
Total Spent to Date	Pay Apps. #1 - 6	\$1,700,169.51
Remaining Budget		\$8,242,696.98

Figure 1 – Drilling Hole for I-Beam Pier



Figure 2 – Lowering 55FT I-beam Pier into Drilled Hole



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

Figure 3 – Encasing Piers in Concrete



Figure 4 – Installed Steel I-beam Piers



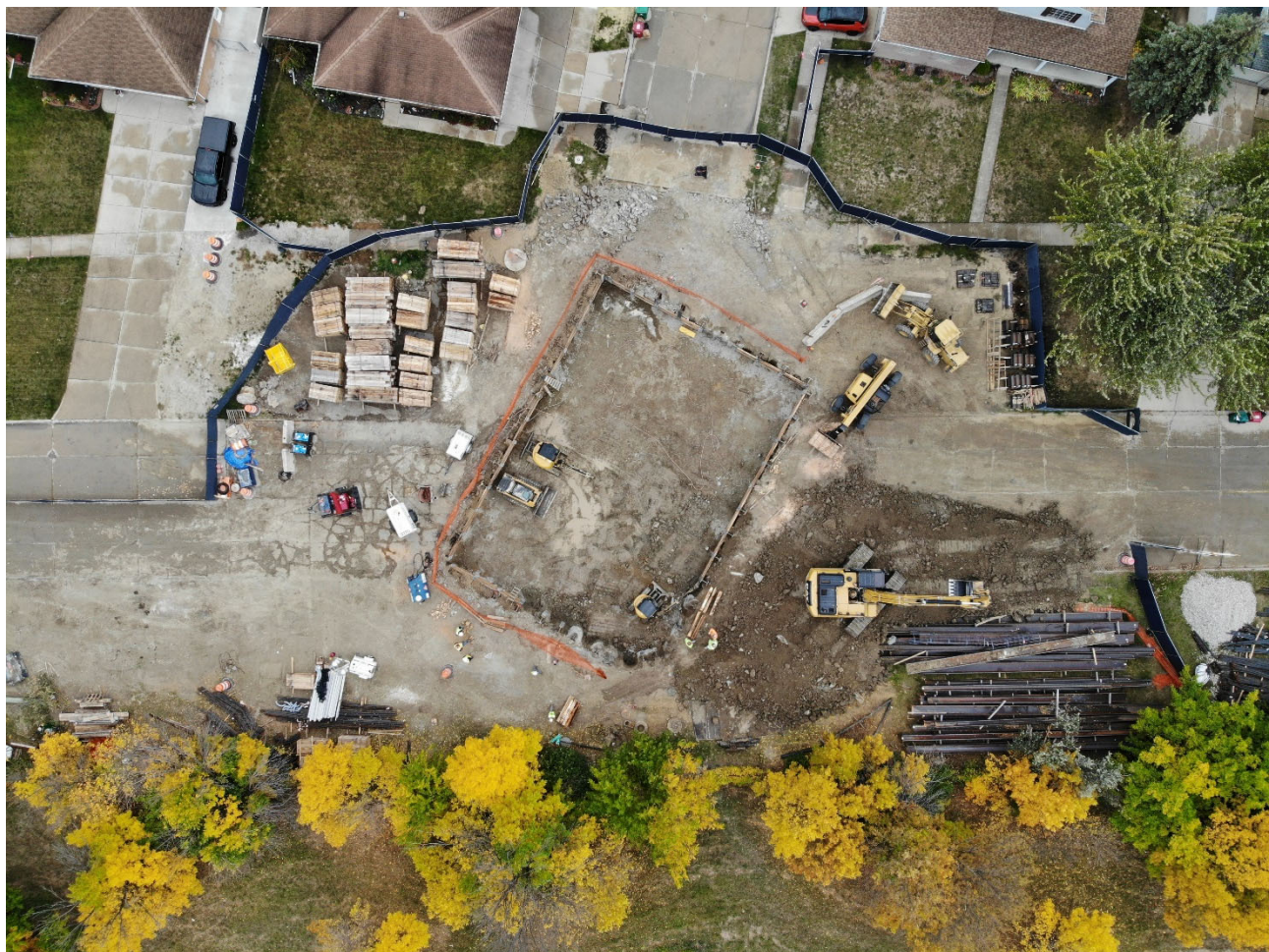
OFFICE LOCATION: 21777 Dunham Road, Clinton Township, Michigan 48036 • Phone: 586-469-5325 • Fax: 586-469-5933
ENGINEERING • Phone: 586-469-5910 • Fax: 586-469-7693 ♦ **SOIL EROSION** • Phone: 586-469-5327 • Fax 586-307-8264

Figure 5 – Aerial Drone Image Showing Soldier Piles Being Installed



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

Figure 6 – Aerial Drone Image Showing Excavation – Approximately 5 Feet Below Grade



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



Candice S. Miller

Public Works Commissioner
Macomb County

To: 8 ½ Mile Drain Drainage District Board Members

CC: File

From: Vincent Astorino, Operations & Flow Manager

Date: October 5, 2022

Subject: Chapaton Electrical Upgrades Design Recommendation

The Chapaton Pump Station (PS) was constructed in 1968 and the majority of the equipment within the facility is original to the facility and has reached the end of its useful life. As part of the MCPWO planning process a capital improvement plan (CIP) was developed several years ago and one of the key projects identified was to replace the main electrical switchgear and storm pump electrical starters within the building. In the past 4 years of operation there have been 3 electrical fires at the Chapaton PS and therefore this project was elevated to the number one priority project.

In 2020, MCPWO started the process to design the 9 Mile Pump Station (PS), which was going to address electrical needs at the Chapaton PS. This project has since been put on hold indefinitely due to the bids that were received for construction. Since the design was mostly done as part of the 9 Mile PS by Tetra Tech, MCPWO reached out to them to receive pricing to revise their design to only make the necessary repairs at the Chapaton PS. Tetra Tech has provided the attached proposal for \$225,000 and a schedule of 12-16 weeks to complete design. MCPWO has reviewed this proposal and is confident that this pricing and schedule is the lowest and fastest that it will be able to receive due to the work that has already been done. The 9 Mile PS design budget also had approximately \$245,000 remaining so those funds can easily be transferred to this project.

This project currently consists of installing five 2 MW generators and all associated synchronous gear, new motor starters for each of the three stormwater pumps, and new 15 kV switchgear to replace the obsolete unit. Currently if the DTE substation outside of the Chapaton PS was to fail then both power feeds coming into it would go out and the Chapaton PS would not have the ability to operate.

MCPWO staff is recommending to award the design of the Chapaton Electrical Upgrades project to Tetra Tech for \$225,000.

Attachment: Tetra Tech Design Proposal Dated 9-13-22



September 13, 2022

Mr. Vince Astorino
Operations and Flow Manager
Macomb County Office of Public Works
21777 Dunham Road
Clinton Twp., MI 48036

Re: Chapaton Electrical Improvements

Dear Mr. Astorino:

Tetra Tech appreciated the opportunity to lead the design of the Nine Mile Pump Station. While we are disappointed the project will not proceed to construction, we understand the current inflationary environment makes financing projects difficult.

Throughout that project, we discussed at several intervals needed improvements to Chapaton's electrical equipment. Through recent discussions, you requested that Tetra Tech provide a proposal for preparing bid documents for many of these items. This letter will serve as that proposal.

SCOPE OF WORK

We propose the following scope of work:

1. Prepare bid documents for the following components:
 - a. New generators to power three (3) Chapaton Pumps and the East Building. We recently discussed specifying five (5) generators located on the RTB east of the pump station. Design will include gear to synchronize the generators. Design work will include site engineering to route wires across the RTB into the station.
 - b. New motor starters for each of the three (3) Chapaton pumps
 - c. New 15kV switchgear to replace existing obsolete unit
2. Hold a kickoff and drawing review meetings at the 30%, 60%, and 90% stages. Prepare a detailed cost opinion at 90% stage.
3. Apply for EGLE's Part 41 Permit
4. Finalize documents for MCOPW to post for bidding
5. Attend a pre-bid meeting, answer contractor questions and issue addenda (as necessary) through the bidding period
6. Attend a bid opening, evaluate bids, and offer an award recommendation

Tetra Tech, Inc.
710 Avis Drive, Suite 100, Ann Arbor, MI 48108
Tel 734.665.6000 www.tetrattech.com



ASSUMPTIONS

- A proposal for services during construction, should that be requested, will be prepared after bids are received
- We will assist MCPWO in reapplying for the gas utility feed to the new generators (this process was started for the proposed Nine Mile Pump Station). We have not budgeted to design a new utility feed as this service is typically completed by the utility. Fees charged by the utility are not included in Tetra Tech's proposal.

SCHEDULE

We anticipate completion of bid documents within twelve to sixteen (12 to 16) weeks of receiving your authorization.

COMPENSATION

We will invoice at our standard hourly rates, We request a budget of \$225,000 for the work outlined above.

EXECUTION

We believe Macomb County will issue a Professional Services Contract to work from if this proposal is accepted.

Thank you for requesting this proposal. Tetra Tech is eager to complete this important assignment and continue our long history of service to Macomb County.

Sincerely;

A handwritten signature in blue ink that reads 'Brian M. Rubel'.

Brian M. Rubel, PE
Vice President

A handwritten signature in blue ink that reads 'Bill Paison'.

Bill Paison, PE
Sr. Electrical Engineer



Candice S. Miller

Public Works Commissioner
Macomb County

To: 8 ½ Mile Drain Drainage District Board Members

CC: File

From: Vincent Astorino, Operations & Flow Manager

Date: October 12, 2022

Subject: Chapaton Accusonic Flow Meters Recommendation

The Chapaton Retention Treatment Basin (RTB) currently holds a National Pollution Discharge Elimination System (NPDES) permit with the Department of Environment, Great Lakes, and Energy (EGLE) to discharge treated combined sewer overflows to Lake St. Clair. As part of this NPDES permit, MCPWO must measure incoming and drain flow rates and perform effluent sampling based off a flow-based sampling system. This system is currently in place, but the existing flow meters have had significant maintenance issues, accuracy issues, and have had to be replaced multiple times.

In the 22/23 fiscal year budget, \$350,000 has been allocated to the replacement of these flow meters with a more robust and accurate system which will have a longer useful life than the existing system. These flow meters are critical to the operation of the Chapaton facility and allow operators to safely push the system to the limit to maximize storage of flow within the system.

The proposal that has been received for this effort is from Hesco, who is the Accusonic representative from Michigan and certified installer. Due to this, additional quotes were unable to be acquired for this effort. MCPWO has significant experience with these types of flow meters and were able to negotiate costs down \$71,810.54. The final proposal is in line with what is expected and a good price.

MCPWO staff is recommending to award the procurement and installation of the Chapaton Accusonic flow meters in the NTE amount of \$224,227.38.

Attachment: Hesco Proposal Dated 10-7-22

QUOTE



Knowledgeable • Professional • Attentive • Likeable

29770 Hudson Drive Novi, MI 48377
Phone: (586) 978-7200
hesco-mi.com

TO: Vince Astorino
Macomb County Office of Public
Works

Friday October 7, 2022

QUOTE #: MCDPW-0010r3
SALESPERSON: Kevin Livingston

9 Mile Accusonics Meter

LINE ITEM	DESCRIPTION	QTY	UNIT	UNIT PRICE	LINE TOTAL
1.00	8510+IS-08ACR6-H PN 8510+IS-08ACR6-H Flowmeter Console, Intrinsically Safe • 8-Path Flow Measurement Capability • NEMA 4X (IP66) Wall-Mounted Enclosure • 90-250 VAC, 47-63 Hz or 100-300 VDC External Power • 7.7-inch LCD Touchscreen Color Display • (8) Isolated 4-20 mA Analog Outputs • (6) Contact Relay Outputs for Alarming • Modbus Interface via RS-232, RS-485 or TCP/IP • 16 Gigabyte Internal Data Logging Storage • Built-in Heater for the Enclosure • AccuFlow™ PC-based Software Interface – Available for Download	2	EA	53,123.51	\$106,247.02

	<p>EXCEPTIONS TO SPECIFICATION</p> <p>1. Exception for Part 2 – Products – 2.10 Transit Time Flow Meter – A: Flow meter shall be designed to have a meter accuracy of $\pm 0.5\%$ for full pipes and $\pm 1.0\%$ for partially full pipes. What Accusonic will stand by for a partially full pipe is the following:</p> <table border="0"> <thead> <tr> <th># of Paths Submerged</th> <th>Uncertainty</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>$\pm 4-10\%$</td> </tr> <tr> <td>2</td> <td>$\pm 3-5\%$</td> </tr> <tr> <td>3</td> <td>$\pm 2-3\%$</td> </tr> <tr> <td>4</td> <td>$\pm 1-2\%$</td> </tr> </tbody> </table> <p>When the pipe is surcharged, it is likely that Accusonic will achieve $\pm 1.0\%$ accuracy. The transducer paths must be placed at very specific locations ($\pm 18^\circ$ and $\pm 54^\circ$ above and below the centerline) in order to achieve $\pm 0.5\%$ accuracy which is typically not feasible in a pipe that runs less than full.</p> <p>2. Exception for Part 2 – Products – 2.10 Transit Time Flow Meter – C: Accusonic and local representatives will always precisely align all transducer sets and this is a requirement for the system operating correctly.</p> <p>3. Exception for Part 2 – Products – 2.10 Transit Time Flow Meter – F: Accusonic does not use all solid-state electronics on the circuit boards used in the 8510+.</p> <p>3. Exception for Part 2 – Products – 2.10 Transit Time Flow Meter – F: Accusonic does not coat the printed circuit boards with an anti-fungus coating. Accusonic does have limited built-in protection against power line transients and lightning strike. If additional protection is required, then this will be the responsibility of others.</p>	# of Paths Submerged	Uncertainty	1	$\pm 4-10\%$	2	$\pm 3-5\%$	3	$\pm 2-3\%$	4	$\pm 1-2\%$				
# of Paths Submerged	Uncertainty														
1	$\pm 4-10\%$														
2	$\pm 3-5\%$														
3	$\pm 2-3\%$														
4	$\pm 1-2\%$														

QUOTE



Knowledgeable • Professional • Attentive • Likeable

29770 Hudson Drive Novi, MI 48377
Phone: (586) 978-7200
hesco-mi.com

<p>1. Proposal includes field services to support installation of system, console, or parts.</p> <p>2. Proposal Does include fastening hardware (studs, anchors, and associated hardware), protective cable conduit</p> <p>3. Proposal Does not include junction boxes, electrical fittings, enclosure mounting hardware, pulling of cables, provision of AC mains power to the console, or mounting of the enclosure.</p> <p>4. Does not include special, modified, or custom documentation or manuals. Standard Accusonic manuals, appropriate to equipment order will be included with system sales.</p> <p>5. Does not include duties, taxes, fees, customs fees, or other charges ex-U.S. in destination country. These are the responsibility of purchaser.</p> <p>6. Assessment of site suitability is based on configuration information provided by customer. Unsuitable site-specific conditions, such as aeration, cannot always be predicted prior to installation. Unsuitable site conditions may adversely affect performance of the equipment.</p> <p>7. Proposal includes an electronic copy of approved operation and maintenance manuals, which are appropriate to the equipment ordered.</p> <p>8. Extended Project Periods: An automatic price escalation of 4% will be applied on the yearly anniversary date of order acceptance, unless a revised quote is presented according to the provisions of the Terms and Conditions. Warranty is as described in the Terms and Conditions. No provision is made for extended warranty.</p> <p>9. These items are controlled by the U.S. Government and authorized for export only to the country of ultimate destination for use by the ultimate consignee or end-user(s) herein identified. They may not be resold, transferred, or otherwise disposed of, to any other country or to any person other than the authorized ultimate consignee or end-user(s), either in their original form or after being incorporated into other items, without first obtaining approval from the U.S. government or as otherwise authorized by U.S. law and regulations.</p>				
----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--	--	--	--

QUOTE



Knowledgeable • Professional • Attentive • Likeable

29770 Hudson Drive Novi, MI 48377
 Phone: (586) 978-7200
 hesco-mi.com

2.00	7658-45X-00 PN 7658-45X-00 Internal Mount Transducer, 500 kHz frequency, 250 psi (17 bar) maximum service pressure, 45-degree path angle, all PVC construction, suitable for hazardous areas with IS console.	24	EA	1,101.60	\$26,438.40
3.00	7698-0001 PN 7698-0001 PVC Mount Assembly for 7658 Transducer.	24	EA	378.68	\$9,088.32
4.00	7600-0384-100 PN 7600-0384-200 Submersible HDPE-Jacketed RG-108 Transducer Cables, 100-ft long each, includes E-O connector, length must be confirmed by the customer prior to order placement.	24	EA	673.55	\$16,165.20
5.00	7699-XX.X-XXX PN 7699-XX.X-XXX Submersible Pressure Transducer for Level Measurement, all stainless-steel construction, includes 100-ft vented cable, pressure rating based on maximum head of tunnel (7.5 psi)	6	EA	1,500.00	\$9,000.00
6.00	7697-0001-01 PN 7697-0001-01 Pressure Transducer Mounting Hardware	6	EA	464.74	\$2,788.44
7.00	HESCO Field Service Services of HESCO Factory Trained and authorized Flow Meter Technicians Services include: -Contract administration and mobilization -Shop Tasks including purchasing, cable labeling, equipment testing and load out -Transducer installation -As built -U-guard installation -Cable pulling -pressure sensor installation -cable termination -Start up and debug -OM Manuals and training Please read this entire quotation and pay specific attention to the list of exceptions to specification and comments/clarifications 10 days is an estimate. This line item will be billed on a Time & Materials basis.	6	Days	7,200.00	\$43,200.00
8.00	Misc Hardware Misc hardware required to complete the installation 600 ft - 2" U guard 1/2 round PVC conduit 400 ft - 1" U guard 1/2 round PVC conduit 2000 - 1/4" 316 SS anchors	1	LS	9,500.00	\$9,500.00

QUOTE



Knowledgeable • Professional • Attentive • Likeable

29770 Hudson Drive Novi, MI 48377
Phone: (586) 978-7200
hesco-mi.com

9.00	Shipping Freight to HESCO	1	LS	1,800.00	\$1,800.00
SUBTOTAL:					\$224,227.38
MI SALES TAX:					Exempt
TOTAL:					\$224,227.38

Ship Via:	Best Way FOB Factory	Shipping Terms:	Included as Line Item
-----------	-------------------------	-----------------	-----------------------

Payment Terms:	Net 30	Quote Valid Through:	11/07/2022
----------------	--------	----------------------	------------

Lead Time:	Shop Drawing Submittals: 1-2 Weeks ARO Shipment: 12 Weeks ARA
------------	------------------------------------------------------------------

END QUOTE



Candice S. Miller

Public Works Commissioner
Macomb County

To: 8 ½ Mile Drain Drainage District Board Members

CC: File

From: Vincent Astorino, Operations & Flow Manager

Date: November 4, 2022

Subject: Chapaton Sluice Gate Rehabilitation Design Recommendation

The Chapaton Pump Station (PS) was constructed in 1968 and much of the equipment within the facility is original to the facility and has reached the end of its useful life. As part of the MCPWO planning process a capital improvement plan (CIP) was developed several years ago and one of the key projects is the replacement and rehabilitation of all the sluice gates at the facility. These gates are critical to the operations of the facility.

In 2020, MCPWO started the process to design the 9 Mile Pump Station (PS), which was going to address several of the sluice gates as part of that project. This project has since been put on hold indefinitely due to the high bids that were received for construction. Since these gates are still a critical component of the facility, MCPWO has elevated a project to address the needs of each of the gates. There are a total of ten (10) gates which are listed in the table below.

Gate	Description	Vision
Chapaton RTB Dewatering Gate	30" Diameter Knife Gate	New sluice gate installed within RTB; new actuator
Jefferson Diversion Gate	60" x 48" Rodney Hunt Sluice Gate	Gate rehabilitation
9 Mile / Chapaton PS Station Gate	60" x 72" Rodney Hunt Sluice Gate	Gate rehabilitation / new actuator
9 Mile Emergency Bypass Dewatering Gate	36" x 36" Rodney Hunt Sluice Gate	New gate and actuator
9 Mile / Chapaton RTB Basin Gates (2)	72" x 60" Rodney Hunt Sluice Gate	New gates and actuators
9 Mile Emergency Bypass Influent Gates (2)	84" x 96" Rodney Hunt Sluice Gate	New gates and actuators
9 Mile Emergency Bypass Effluent Gates (2) [Demolish]	84" x 96" Rodney Hunt Sluice Gate	Demolish. New access hatches at grade.

MCPWO put together a request for proposal (RFP) and short-listed six (6) firms that were qualified to submit a design proposal. Since the firms that have been selected all meet the qualifications required to design this project, the proposals will be strongly based on their costs. The firms and their proposed design fees have been listed in the table below.

Firm	Cost Total
AECOM	\$88,247.47
AEW	\$87,600.50
ASI	\$186,808.32
Tetra Tech	\$188,020.00
Wade Trim	\$192,815.00
OHM*	N/A

*Received notice on the day that bids were due that they were not going to submit due to their projected costs not being competitive.

The current FY22/23 budget has allocated \$4,230,514 for this project. It is anticipated to cost approximately \$4 million to complete this project. This is highly dependent on what work is going to be required at each gate structure and will be refined during the design process.

MCPWO staff is recommending to award the design of the Chapaton Sluice Gate Rehabilitation project to AEW for \$87,600.50.

Attachment: AEW Proposal Dated 11-3-22



ANDERSON, ECKSTEIN & WESTRICK, INC.
CIVIL ENGINEERS SURVEYORS ARCHITECTS

51301 Schoenherr Road
Shelby Township, MI 48315

586.726.1234
www.aewinc.com

November 3, 2022

Steve Rozycki, P.E., Engineer II
Macomb County Public Works
21777 Dunham Road
Clinton Township, MI 48036

Reference: Chapaton Gates Rehabilitation Project
Request for Proposal Response

Dear Mr. Rozycki,

It is with great interest that we submit our proposal to provide for Professional Engineering Services for the Chapaton Gates Rehabilitation Project. We have comprehensive knowledge of the Chapaton Basin, rehabilitation experienced personnel, and the skills necessary ensure success.

As requested we are providing an estimated cost based on the tasks identified in the RFP. The assumptions and personnel are included in our engineer's estimate of probable cost as attached. Taylor Sting will be the project manager responsible for the design and management of the project with oversight from myself. Kevin Zauel will provide the structural design and Paul Guinnane will provide a supporting design role. The MCPWO is very familiar with the AEW staff, we welcome any preferences you may have and will gladly assign tasks accordingly.

Established in 1968, Anderson, Eckstein and Westrick, Inc. (AEW) has provided municipal engineering services for over 50 years, we currently serve over 33 southeast Michigan municipalities. The Macomb County office of Public Works is one of our earliest and most valued clients. We are honored by your consideration of Anderson, Eckstein and Westrick and if selected look forward to serving you once again.

Respectfully,

A handwritten signature in blue ink, appearing to read 'Louis J. Urban'.

Louis J. Urban, P.E.
Senior Project Engineer

Enclosures:
Estimated Staff Hours by Classification – Costing Spreadsheet
Work Plan
Hourly Rate Schedule



Chapaton Gates Rehabilitation Project – Work Plan

1. Review existing facility, gate and actuator plans and manuals.
 - a. Consider locations of gate addition or relocation to assist in construction sequencing.
2. Complete a field investigation condition assessment of each gate and each actuator system. Evaluate identified locations for possible gate addition or relocation.
3. Work with multiple gate suppliers to gather gate and actuator replacement options, including evaluating any rehabilitation options for the existing gates.
 - a. Options data will include estimated cost, dependability, supply time, life expectancy and maintenance requirements.
 - b. Installation/ implementation of options (Operational impact/ efficiencies). – Verify function, options for replacement or elimination such as shown below:



4. Basis of design and preliminary cost estimate for MCPWO and review options with staff.
 - a. Review SMSD Operational Plan (Chapaton Basin and Pump Station)
 - b. Construction Coordination/ Basin Operations Plan (i.e. impact on construction item duration in BOD)
 - i. The existing cast iron gate(s) may be possible to rehabilitate vs complete replacement. AEW would coordinate with the Rodney Hunt



- representatives to utilize the existing documents to ensure proper rehabilitation. If rehabilitation is possible it would be more cost and time effective.
- ii. If rehabilitation of the gates is not feasible, current lead time for new cast iron gates is 4-6 weeks and 28-32 weeks for shipping. The procurement time for the electric actuators may be within the gate procurement timeframe. However, some actuators (i.e. Limitorque) delivery times are reaching 52-54 weeks and hydraulic cylinders could also be as long as 12 months.
- c. Draft PERT/ CPM schedule/ tasks.
 - i. Determine critical tasks and operation coordination to addressed by designers/ bidders.
 - d. Chapaton gate/basin operation and rehab/replacement while maintaining basin operations.
 - i. The 9-Mile basin gates close once the basin is at a depth of 6 feet, it is expected that the basin gate will be blocked and braced during any period of gate removal in order to maintain operations. The 9 Mile Bypass gate would be considered for initial filling of the basin, otherwise flow would be directed to the wet well to maintain operation.
 - ii. The Jefferson Emergency Diversion Gate and 9 Mile Station Gate are used in times where the tributary Drain/Interceptor is in need relief. It is expected that each one would be rehabilitated.
 - iii. The 9 Mile Bypass gates (influent, effluent and dewatering) are used when high flows warrant use of the emergency bypass. Operations can be maintained while each one is replaced with the demolition of the Effluent gates being last.
 - iv. The RTB dewatering gate is used to empty the basin. Alternative dewatering routes will be considered in order to maintain operations.
 - e. It is expected that the cast iron gates that can be rehabilitated will be completed first. The anticipated sequence of replacement rehabilitations as follows:
 - i. Rehabilitate Jefferson Emergency Diversion Gate
 - ii. Rehabilitate 9 Mile Station Gate
 - iii. Replace 9 Mile Bypass Dewatering Gate with new actuator
 - iv. Replace 9 Mile Bypass Influent Gates with new actuator
 - v. Replace 9 Mile Basin Gates and Demolish 9-Mile Bypass Effluent Gates
 - 1. Above ground structure (as shown below) to be demolished and replaced with at-grade access hatch.
 - vi. Replace RTB De-watering Gate & Actuator



5. Prepare Preliminary Plans
6. Review Plans with MCPWO
7. Revise Preliminary Plans and prepare specifications
8. Review revised plans and specifications with MCPWO.
 - a. Incorporate Draft PERT/ CPM schedule/ tasks and construction/ operations coordination in specs
9. Finalize Plans and specifications and apply for permits.
 - a. Incorporate Part 41 permit and comments in specs
10. Assist in contract bidding and contractor selection.

Chapaton Gates Rehabilitation

Chapaton Gates Rehabilitation MCPWO Project Number: WWS-2022-00	Estimated Staff Hours By Classification												Total Cost	Commentary / Assumptions	
	AEW Services														
	Principal Engineer Scott Lockwood	Senior Project Engineer Louis Urban	Senior Project Engineer Kevin Zauel	Graduate Engineer / Team Leader Jeff Allegoet	Drafter / Technician Mike Sopczynski	Graduate Engineer Mike Sommers Chris Frayer	Licensed Surveyor Mike Truax Craig Amey	Confined Space Entry Crew	Senior Project Engineer Paul Guinane	Licensed Engineer Taylor Sting	Engineering Aid III Chris Birkett Kevin Anderson	Clerical			Equipment & Expenses
Engineering Sub-Task	174	159	159	117	98	117	143	228	159	143	98	48	10,500		
Task 1 – Basis of Design															
Basis of Design (BOD) services involve confirming existing site conditions, collecting and analyzing data, evaluating alternatives, and recommending the preferred alternatives.															
1	Review existing information, clarify and refine project requirements..										8			\$ 1,140.00	Identify all permit requirements and incorporate them into the BOD.
2	Complete additional field verifications, as necessary, to satisfactorily complete the BOD.							10					8	\$ 3,064.00	Considerations for rehabilitation and/or replacement of all associated hydraulic and actuator systems and associated electrical components
3	Evaluate gate and actuator upgrade alternatives.		2						4		20			\$ 3,804.00	Alternatives may include, but are not limited to, gate types, actuators, hydraulic systems, electrical components, etc. This shall be presented in an alternatives matrix noting pros & cons based upon capital cost, long term operation and maintenance costs, maintenance accessibility, facility modifications, construction durations, equipment lead times, and other relevant items.
4	Conduct, at a minimum, monthly meetings during the BOD phase with MCPWO staff.	4	4								8			\$ 2,472.00	Meeting summaries for all monthly meetings and design review workshops
5	Prepare a basis of design report which will be used to complete the final design.					8			4		30			\$ 5,695.00	Deliver a complete BOD report
6	Engineer's opinion of probable construction cost		2								8			\$ 1,458.00	
7	Provide a comprehensive list of permits required										2			\$ 285.00	
8	Structural Review			8										\$ 1,272.00	
9	Electrical & Process Engineer													\$ 10,500.00	Cost for working with electrical and process engineers on gate actuation options
	Task 1 Sub-Total	4	8	8	0	8	0	0	10	8	76	8	0	\$29,690.00	
Task 2 – Design															
The design phase shall include the preparation of bidding documents for the construction of the project.															
1	Prepare contract drawings in AutoCAD 2017 in accordance with the MCPWO standards .	1	4	40	4	136		10			40			\$ 28,096.00	Submittals shall include, but not limited be to; front end specifications, technical specifications, and detailed drawings, including all demolition, site civil, traffic control, soil erosion, structural, process, electrical, I/C, and standard detail sheets.
2	Prepare a specification book in Master Format 2014 in accordance with MCPWO standards to accompany the plans.	1	4	4					20		8		24	\$ 6,918.00	The Division 00 specifications including the Agreement and the General Conditions will be provided by MCPWO.
3	Submit construction documents and engineer's opinion of probable construction cost at the 60% milestone phase for MCPWO review.	1	3						4		4			\$ 1,857.00	Lump sum items estimated to be greater than 10% of the total probable construction cost shall include a schedule of values to further breakdown the estimate.
4	60% MCPWO review comment revisions and workshop meetings		1	8	2	8					8		4	\$ 3,781.00	MCPWO and project stakeholders to present the design documents, answer questions, and receive feedback. The Consultant shall have in attendance at the workshops staff that can answer questions across all applicable design disciplines.
5	Submit construction documents and engineer's opinion of probable construction cost at the 90% milestone phase for MCPWO review.		1								3		1	\$ 634.50	Revised contract documents submitted electronically hard copy for MCPWO review
6	90% MCPWO review comment revisions and workshop meetings		2	4	2	4					4		4	\$ 2,342.00	MCPWO and project stakeholders to present the design documents, answer questions, and receive feedback. The Consultant shall have in attendance at the workshops staff that can answer questions across all applicable design disciplines.
7	Submit construction documents and engineer's opinion of probable construction cost at the 100% milestone phase for MCPWO review.	1	1								3		1	\$ 808.50	A complete pdf, AutoCAD, and Microsoft Word set of construction documents, which includes drawings and specifications for MCPWO to issue for bid on MITN. The bid documents shall address all permitting requirements for construction activities.
8	100% MCPWO review comment revisions and workshop meetings			1	1	4					2			\$ 953.00	MCPWO and project stakeholders to present the design documents, answer questions, and receive feedback. The Consultant shall have in attendance at the workshops staff that can answer questions across all applicable design disciplines.
9	Prepare the necessary permit applications and assist MCPWO in securing the permits.		1						8		8		2	\$ 2,667.00	Including but not necessarily limited to communicating and meeting with permitting agencies, especially EGLE, as necessary to secure permits in advance of awarding the construction contract.
10	Conduct and memorialize monthly meetings during the design phase with MCPWO staff.		16								16		4	\$ 5,016.00	Meeting summaries for all monthly meetings and design review workshops

Chapaton Gates Rehabilitation

Chapaton Gates Rehabilitation MCPWO Project Number: WWS-2022-00		Estimated Staff Hours By Classification												Total Cost	Commentary / Assumptions	
		AEW Services														
		Principal Engineer Scott Lockwood	Senior Project Engineer Louis Urban	Senior Project Engineer Kevin Zael	Graduate Engineer / Team Leader Jeff Allegoet	Drafter / Technician Mike Sopczyński	Graduate Engineer Mike Sommers Chris Frayer	Licensed Surveyor Mike Truax Craig Arney	Confined Space Entry Crew	Senior Project Engineer Paul Guinmane	Licensed Engineer Taylor Sting	Engineering Aid III Chris Birkett Kevin Anderson	Clerical			Equipment & Expenses
Engineering Sub-Task		174	159	159	117	98	117	143	228	159	143	98	48	10,500		
11	Prepare a preliminary construction schedule with suggested sequencing		1				2				4		2	\$ 1,059.00	Preparation of a preliminary construction schedule in Microsoft Projects Format or other MCPWO acceptable format	
12	Schedule of submittals		2								4		2	\$ 984.00	A comprehensive list of submittals based on the final Contract Documents of all submittals to be provided by the Contractor during construction	
Task 2 Design Sub-Total		4	36	57	9	152	2	10	0	32	104	0	44	\$55,116.00		
Task 3 – Bidding																
1	Attend and assist with the technical aspects of the pre-bid meeting		1	2							2			\$ 762.00		
2	Prepare addenda to answer bidder questions and modify the bidding documents as necessary		1								4			\$ 729.00	Any addenda that are issued during bidding, including written responses to Contractor questions	
3	Assist MCPWO in reviewing the bids and create a bid tabulation document		1				1				1		1	\$ 466.50	Evaluate the bids to determine if the apparent low bidder is responsible, conduct project reference checks on the apparent low bidder and conduct other efforts necessary to determine the bidder's responsibility. Prepare a recommendation to the MCPWO for Contract award.	
4	Conduct a pre-award meeting, if necessary, and prepare agenda and meeting summaries		2				2				2			\$ 837.00	Prepare a bid tabulation and recommendation of award	
TASK 3 Bidding Sub-Total		0	5	2	0	0	3	0	0	0	9	0	1	\$2,794.50		
TASK 1, TASK 2 & Task 3 PROJECT TOTAL		8	49	67	9	160	5	10	10	40	189	8	45	\$87,600.50		

Additional Comments & Assumptions:

- 1 The MCPWO is very familiar with AEW staff. We will adjust personnel based on MCPWO preferences.
- 2 The estimate of effort provided is based on our understanding of the RFP and available MCPWO supporting documents.

EXHIBIT "A"

DISCOUNTED HOURLY CHARGE RATES

<u>EMPLOYEE CLASSIFICATION</u>	<u>HOURLY CHARGE RATE</u>
PRINCIPAL ENGINEER / SURVEYOR / ARCHITECT	\$ 174.00
SENIOR PROJECT ENGINEER / SURVEYOR / ARCHITECT	159.00
LICENSED ENGINEER / SURVEYOR / ARCHITECT	143.00
GRADUATE ENGINEER / SURVEYOR / ARCHITECT	117.00
TEAM LEADER	117.00
ENGINEERING AIDE III	98.00
ENGINEERING AIDE II	88.00
ENGINEERING AIDE I	79.00
ENGINEERING AIDE TRAINEE	57.00
SECRETARIAL (Special Projects)	48.00
SURVEY FIELD (3 PERSON CREW)	237.00
SURVEY FIELD (2 PERSON CREW)	198.00
SURVEY FIELD (1 PERSON CREW)	154.00
CONFINED SPACE ENTRY CREW	228.00
CONFINED SPACE ENTRY (EACH ADDITIONAL PERSON)	77.00
DATA COLLECTOR (SURVEY CREW)	33.00
GPS SURVEY EQUIPMENT	82.00

LEGAL MATTERS BILLED AT 1.5 TIMES ABOVE RATES.

EFFECTIVE JANUARY 2022 AND
UPDATED ANNUALLY TO REFLECT CPI.