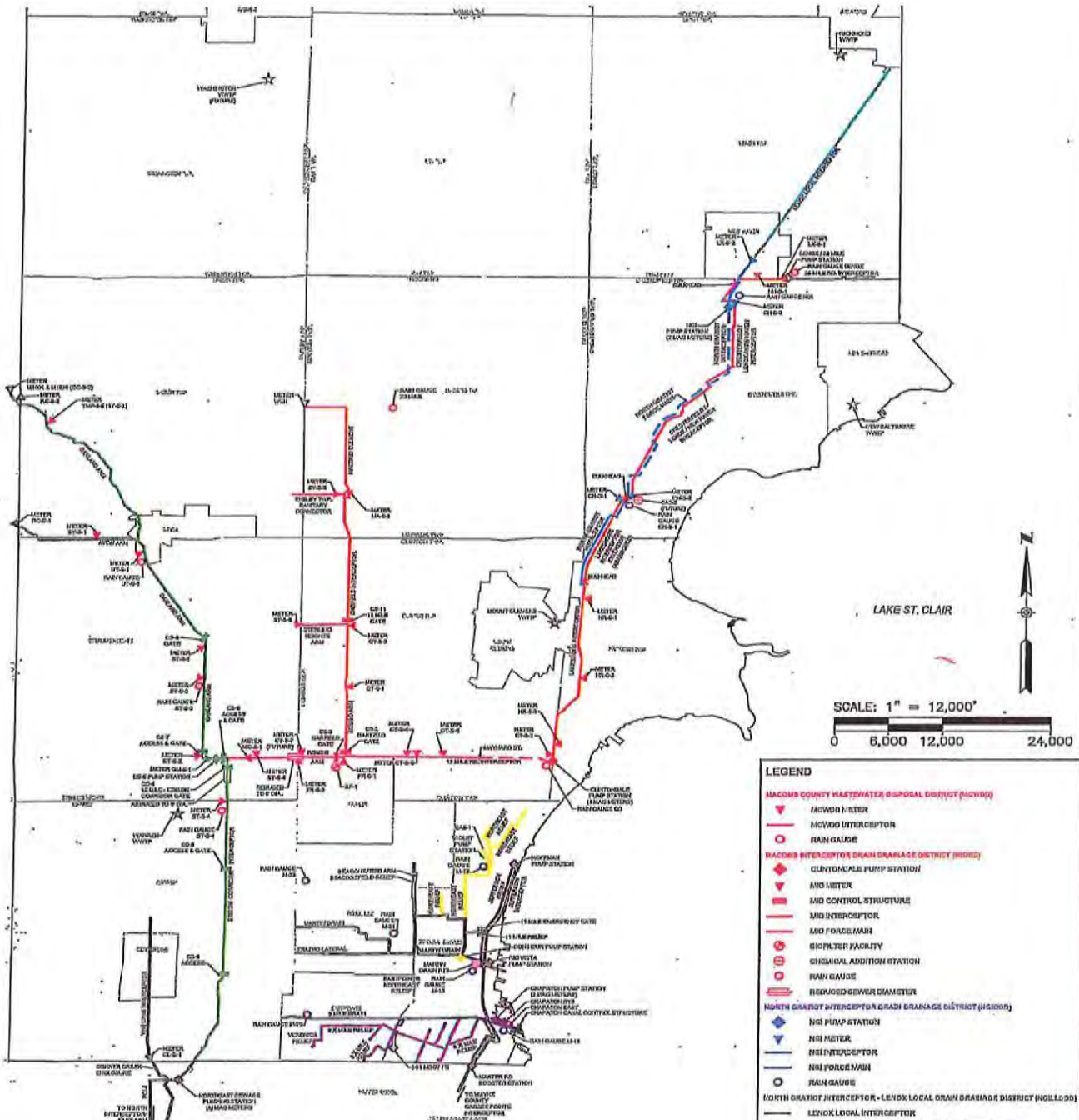


EIGHT AND ONE-HALF MILE RELIEF DRAIN
INTRA-COUNTY DRAINAGE BOARD
FEBRUARY 11, 2019
10:00 A.M.
AGENDA

	Page
1. Call of meeting to order and roll call	
2. Approval of Agenda for February 11, 2019	
3. Approval of Minutes for January 14, 2019	3
4. Public Participation	
5. Project Updates – Vince Astorino	
6. Chapaton Replacement Cameras – Vince Astorino	6
Motion: To award the proposal from Abel Electronics for the purchase and installation of replacement security cameras at the Chapaton West Building for a not to exceed amount of \$42,445	
7. Chapaton RTB Canal Upgrades – Vince Astorino	15
Motion: To approve the proposal from Wade Trim for the design of the Chapaton RTB Canal Upgrade for a not-to-exceed amount of \$977,661	
8. Lawn Mowing Contract – Evans Bantios	49
Motion: To approve the quote from Marino’s Landscape for mowing services for the 8 ½ Mile Drainage District based on unit prices totaling \$16,632 for the 2019 and 2020 mowing seasons	
9. Consideration for approval of invoices (see attached)	52
10. Financial Report – Bruce Manning	108
11. Adjourn	

MACOMB COUNTY WASTEWATER SYSTEMS



- LEGEND**
- ▲ MACOMB COUNTY WASTEWATER DISPOSAL DISTRICT (MCWWD)
 - ▼ MCWWD METER
 - MCWWD INTERCEPTOR
 - RAIN GAUGE
 - ◆ MACOMB INTERCEPTOR DRAIN DRAINAGE DISTRICT (MIDD)
 - ◆ CLINTONDALE PUMP STATION
 - ▼ MID METER
 - MID CONTROL STRUCTURE
 - MID INTERCEPTOR
 - MID FORCE MAIN
 - BIOPLET FACILITY
 - CHEMICAL ADDITION STATION
 - RAIN GAUGE
 - REDUCED SEWER DIAMETER
 - ◆ NORTH GRAYLOT INTERCEPTOR DRAIN DRAINAGE DISTRICT (NGIDD)
 - ◆ NSI PUMP STATION
 - ▼ NSI METER
 - NSI INTERCEPTOR
 - NSI FORCE MAIN
 - RAIN GAUGE
 - NORTH GRAYLOT INTERCEPTOR - LENOX LOCAL DRAIN DRAINAGE DISTRICT (NGLLDD)
 - LENOX LOCAL INTERCEPTOR
 - ◆ OAKLAND-MACOMB INTERCEPTOR DRAIN DRAINAGE DISTRICT (OMIDD)
 - ◆ CS-2 PUMP STATION
 - ▼ OMID METER
 - OMID CONTROL STRUCTURE
 - OMID INTERCEPTOR
 - REDUCED SEWER DIAMETER
 - ◆ 8 1/2 MILE KELLEY DRAIN DRAINAGE DISTRICT
 - ◆ CHAPATON WEST PUMP STATION
 - ◆ CHAPATON RETENTION TREATMENT BASIN
 - ◆ CHAPATON CANAL CONTROL GATE
 - 8 1/2 MILE INTERCEPTOR
 - RAIN GAUGE
 - ◆ SEBECUS SANITARY DIVISION DRAIN DRAINAGE DISTRICT (SEDDDD)
 - ◆ SEBECUS PUMP STATION
 - CHEMICAL ADDITION STATION
 - SEBECUS INTERCEPTOR
 - ◆ MARTIN SANITARY DIVISION DRAIN DRAINAGE DISTRICT (MDDDD)
 - MARTIN DRAIN RETENTION TREATMENT BASIN
 - OTHER SYSTEMS**
 - ◆ PUMP STATION
 - ▼ METER
 - ★ WWT
 - INTERCEPTOR

Candice S. Miller
MACOMB COUNTY PUBLIC WORKS COMMISSIONER



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 January 14, 2019, at 10:06 A.M.

PRESENT: Candice Miller, Chair
Bryan Santo, Member
Veronica Klinefelt, Member

ALSO PRESENT: Harold Haugh, Robert Leonetti, Robert Mijac, Joseph Romano, Macomb County Board of Commissioners; Brian Baker, Chief Deputy, Karen Czernel, Deputy, Vincent Astorino, Operations and Flow Manager, Jeff Bednar, P.E., Environmental Resources Manager, Bruce Manning, Financial Manager, Stephen Downing, Engineer II, Dan Heaton, Public Relations Manager, Ken Goike, Drain Operations Manager, Barbara Delecke, Administrative Services, Madison Tanghe, Secretary to Chief Deputy, Macomb County Public Works (MCPW); Jordan Scott, Sterling Heights Public Works Department

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

Adopted: YEAS: 3
NAYS: 0

Minutes of the meeting of December 10, 2018 were presented. A motion was made by Mr. Santo, supported by Ms. Klinefelt 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.

Request for Proposals (RFPs) were sent out for the 9 Mile Canal. Bids are due on January 15, 2019 for the design portion of this project. Design on the pump and screening project has begun. The bar racks that protect the pumps will be repaired and another intermediate pump will be installed to help with dewatering after a wet-weather event. Construction on this project will begin later this year. A study of upgrades to the disinfection system and segmentation of the basin are being done. This study should be completed by the end of January 2019.

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

Adopted: YEAS: 3
NAYS: 0

The electrical system at the Chapaton Retention Basin needs maintenance. Quotes were received from Northern Electrical Testing, Inc. and Rotor Electric Company of Michigan, LLC. Northern Electrical Testing, Inc. submitted the lowest bid at \$41,979.

A motion was made by Mr. Santo, supported by Ms. Klinefelt to approve the proposal from Northern Electrical Testing, Inc. for preventative maintenance on the Chapaton RTB Switchgear for a not-to-exceed amount of \$41,979.

Adopted: YEAS: 3
NAYS: 0

An RFP was sent out for as-needed engineering services for all of the southeast districts, which includes the 8 ½ Mile Relief Drain, Martin Sanitary Diversion Drain and Southeast Macomb County Wastewater District (SEMCWWD). The proposal was for \$100,000, with \$75,000 for the 8 ½ Mile Relief Drain, \$15,000 for the Martin Sanitary Diversion Drain and \$10,000 for SEMCWWD. Four smaller budgeted projects were included with the proposal. Fishbeck, Thompson, Carr & Huber, Inc. (FTC&H) was the highest scoring team.

A motion was made by Mr. Santo, supported by Ms. Klinefelt to approve the proposal from Fishbeck, Thompson, Carr & Huber, Inc. (FTC&H) for as-needed engineering services, Chapaton Basin Structural Integrity Study and design of 9 Mile By-pass repairs for a not to exceed amount of \$151,919.

Adopted: YEAS: 3
NAYS: 0

The Chair presented the invoices totaling \$92,037.63 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 Ms. Klinefelt, supported by Mr. Santo, that the meeting of the Eight and One-Half Mile Relief Drain Board be adjourned.

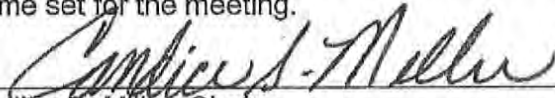
Adopted: YEAS: 3
NAYS: 0

The meeting was adjourned at 10:36 a.m.


Candice S. Miller, Chair
Macomb County Public Works Commissioner

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 January 14, 2019, 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.



Candice S. Miller, Chair
Macomb County Public Works Commissioner

DATED: 1/22/19

9623.bd



Candice S. Miller

Public Works Commissioner
Macomb County

To: Candice Miller, Macomb County Public Works Commissioner

CC: Brian Baker, Chief Deputy

From: Vincent Astorino, Operations & Flow Manager

Date: February 4, 2019

Subject: Chapaton West Security Camera Replacement Recommendation

Chapaton pump station along with all of are other critical facilities have been equipped with video surveillance security systems. These cameras serve a couple key purposes which include monitoring and recording the facilities to help prevent security risks. They also allow our operators to quickly diagnose any issues that may arise. One example would be a camera facing a pump in the basement or confined space can easily be monitored for smoke or water leaking.

The cameras at what is known as Chapaton West which is the main pump station building have reached the end of their useful life. There are currently 17 cameras within and around this building. They are currently 10 years old and are starting to fail. Two of these units have failed and are not operable. The technology has also far surpassed what is currently installed. The new cameras are digital compared to the analog system currently in place. This will provide much clearer images along with a more stable network. They will also use less bandwidth and help the overall usage on our SCADA radio network. Another significant upgrade is that we have multiple point-to-zoom cameras which focus on a specific area and only record that. The new cameras to replace these have multiple cameras in one so we can have full coverage of an area and not have dead zones.

Due to all of these reasons we have budgeted \$70,000 in the 18/19 budget to replace these cameras and the recommendation that is being proposed is well under budget.

We reached out to three companies to provide quotes to replace the cameras at Chapaton. Only two companies provided quotes and they are listed below. Both companies performed a walkthrough of the facility and given the same scope of cameras to replace. Motor City Electric provided a replace-in-kind option to the newer Pelco camera system. Abel Electronics proposed Panasonic cameras for the entire facility. These two came with significant cost differences. We have not been happy with the Pelco system and the company also no longer offers tech support and has been recently sold to an overseas company which often tends to complicate things. We then went through and vetted out the newly proposed Panasonic camera system. They offer 24/7 customer support plus cameras and parts are readily available. We also went through a full video demonstration

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

of the Panasonic software package which is included and leaps and bounds ahead of the Pelco system.

Below are the prices for the two different proposals for Chapton to perform this work and their not-to-exceed (NTE) numbers are below with the quotes attached.

- Abel Electronics = \$42,445.00
- Motor City Electric Technologies = \$60,447.00

You will notice that the total values in both quotes are higher than what is reflected above. The main reason for this is that we have to upgrade the software at the other facilities so that we can maintain visibility across the other cameras in the system with either option. The quotes are itemized and each district will pay for their own work. We have also included 3 additional items to the Chapaton portion within the Abel quote. These include a new PC for running the cameras within our control room, a battery backup system for the server to allow the camera system to stay up while switching to generator backup in a power loss situation, and two additional cameras to monitor the dry flow pumps located 40 feet below the control room which will reduce man hours. Even with these additions their cost was much lower.

After reviewing the proposals submitted, it is my recommendation that we move forward with Abel Electronics with the NTE limit of **\$42,445.00**.

Attachments: Abel Electronics Proposal – 2/4/19
 Motor City Electric Technologies Proposal – 1/7/19



27201 HARPER AVENUE
ST. CLAIR SHORES, MI 48081

QUOTE NUMBER
13266
Quote Date
02/04/2019

Phone: 586-777-8232 Fax: 586-777-7540

Sold To:

MACOMB COUNTY OPW
23001 E 9 MILE RD
SAINT CLAIR SHORES, MI

48080

Ship To:

JOE BETZ

Customer No.	Service Order No.	P.O. Number	Payment Terms	Page No.
390			NET 30 DAYS	1
Sales Rep.	Shipping Method		Due Date	Station
MSM 003			02/09/2019	003
				Time
				16:58

Quantity	Item	Description	Unit Price	Extension
1.00		SCOPE OF WORK:		
		Upgrade existing camera system to a Panasonic Video Insight		
		VMS at the following locations: Chapaton, Clintondale,		
		Biofilter, Bon Huer and Violet.		
1.00		VIOLET PUMP STATION:		
		Convert existing system over to a Panasonic Video Insight		
		VMS and add three existing cameras to customers NVR		
		with licenses. Includes Unlimited SUP and tech support		
3.00		VIDEO INSIGHT CAMERA LICENSE	195.00	585.00
1.00		SYSTEM CONFIGURATION AND SETUP	1,000.00	1,000.00
1.00		BON HUER PUMP STATION:		
		Convert existing system over to a Panasonic Video Insight		
		VMS and add two existing cameras to customers NVR.		
1.00		Includes Unlimited SUP and tech support		
2.00		VIDEO INSIGHT CAMERA LICENSE	195.00	390.00
1.00		SYSTEM CONFIGURATION AND SETUP	1,000.00	1,000.00
1.00		BIOFILTER PUMP STATION:		

Charge Acct	SubTotal Amount	Sales Tax	Quote TOTAL
0.00	50520.00	0.00	50,520.00

Signature: _____



27201 HARPER AVENUE
ST. CLAIR SHORES, MI 48081

QUOTE NUMBER
13266
Quote Date
02/04/2019

Phone: 586-777-8232 Fax: 586-777-7540

Sold To:

MACOMB COUNTY OPW
23001 E 9 MILE RD
SAINT CLAIR SHORES, MI

48080

Ship To:

JOE BETZ

Customer No.	Service Order No.	P.O. Number	Payment Terms	Page No.
390			NET 30 DAYS	2
Sales Rep.	Shipping Method		Due Date	Station
MSM 003			02/09/2019	003
				16:58

Quantity	Item	Description	Unit Price	Extension
		Convert existing system over to a Panasonic Video Insight		
		VMS and add two existing cameras to customers NVR.		
1.00		Includes unlimited SUP and software support		
2.00		VIDEO INSIGHT CAMERA LICENSE	195.00	390.00
1.00		SYSTEM CONFIGURATION AND SETUP	1,000.00	1,000.00
1.00		CLINTONDALE PUMP STATION:		
		Install NVR and from Chapaton and convert system to a		
		Panasonic Video Insight VMS. Install 10 camera license and		
		replace existing control room camera.		
1.00		Includes unlimited SUP and software support.		
10.00		VIDEO INSIGHT CAMERA LICENSE	195.00	1,950.00
1.00		SYSTEM CONFIGURATION AND SETUP	1,000.00	1,000.00
1.00		CAMERA REPLACEMENT LABOR	375.00	375.00
1.00		PANASONIC ADVIDIA 3MP A-37-FW FIXED 2.8MM DOME CAMERA	350.00	350.00
1.00		WALL MOUNT	35.00	35.00
1.00		CHAPATON PUMP STATION:		
		Install one Panasonic server by Dell. Unlimited SUP,		
		Includes all Panasonic camera license and new server		
		from Dell.		

Charge Acct	SubTotal Amount	Sales Tax	Quote TOTAL
0.00	50520.00	0.00	50,520.00

Signature: _____



27201 HARPER AVENUE
ST. CLAIR SHORES, MI 48081

QUOTE NUMBER
13266
Quote Date
02/04/2019

Phone: 586-777-8232 Fax: 586-777-7540

Sold To:

MACOMB COUNTY OPW
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48080

Ship To:

JOE BETZ

Customer No.	Service Order No.	P.O. Number	Payment Terms	Page No.
390			NET 30 DAYS	3
Sales Rep.	Shipping Method		Due Date	Station
MSM 003			02/09/2019	003
				16:58

Quantity	Item	Description	Unit Price	Extension
9.00		PANASONIC ADVIDIA A-47-F- (H.265) FIXED CAMERAS	400.00	3,600.00
9.00		WALL MOUNTS	65.00	585.00
5.00		PANASONIC ADVIDIA A-427-V - 8MP MULITSENSOR CAMERA 270 DEG	1,600.00	8,000.00
4.00		WALL MOUNTS	80.00	320.00
1.00		CEILING MOUNT ADAPTER	85.00	85.00
3.00		PANASONIC CORNER AMOUNT ADAPTER	120.00	360.00
3.00		PANASONIC ADVIDIA A-300 2MP PTZ CAMERA	1,725.00	5,175.00
3.00		WALL MOUNTS	80.00	240.00
1.00		CORNER MOUNT ADAPTER KITS	120.00	120.00
1.00		SWITCHES, CABLING AND POE INJECTORS	2,850.00	2,850.00
1.00		PARAPET MOUNT WITH CAMERA ADAPTER PLATE	475.00	475.00
3.00		CAMERA LICENSE FOR EXISTING CAMERAS	195.00	585.00
1.00		INSTALLATION, SETUP AND TRAINING COST	6,800.00	6,800.00
1.00		DELL NVR-R-1-1-24TB WITH PANASONIC SERVICE LICENSE	5,500.00	5,500.00
		Dell R230XL, Single Xeon E3-1220 Processor, 8GB RAM,		
		Windows 10 PRO ,		
		OS 1TB HDD, Storage 24TB (RAID5) DVD-RW Drive, Keyboard and		
		Mouse, No audio, 3 year hardware limited warranty		
1.00		APC SRT3000 RMXLA WITH NIC CARD AND RACK RAILS	3,500.00	3,500.00
1.00		DELL WORKSTATION: I7-8700 PROCESSOR, 8GB MEMORY, DUAL	1,200.00	1,200.00
1.00		GRAPAHIC CARD AND 1TB		

Charge Acct	SubTotal Amount	Sales Tax	Quote TOTAL
0.00	50520.00	0.00	50,520.00

Signature: _____



27201 HARPER AVENUE
ST. CLAIR SHORES, MI 48081

QUOTE NUMBER
13266
Quote Date
02/04/2019

Phone: 586-777-8232 Fax: 586-777-7540

Sold To:

MACOMB COUNTY OPW
23001 E 9 MILE RD
SAINT CLAIR SHORES, MI

48080

Ship To:

JOE BETZ

Customer No.	Service Order No.	P.O. Number	Payment Terms	Page No.
390			NET 30 DAYS	4
Sales Rep.	Shipping Method		Due Date	Station
MSM 003			02/09/2019	003
				16:58

Quantity	Item	Description	Unit Price	Extension
1.00		SHIPPING	375.00	375.00
1.00		ADD TWO CAMERAS AT CHAPATON B3 LOCATION:		
2.00		ADVIDIA E-47-V - 4MP IR & VARIFOCAI CAMERA	510.00	1,020.00
		PANASONIC CAMERA LICENSE INCLUDED		
1.00		WIRE AND HARDWARE	125.00	125.00
2.00		WALL MOUNTS WITH ADAPTER PLATES	85.00	170.00
1.00		INSTALLATION AND SETUP	1,360.00	1,360.00
1.00		NOTES:		
		All racks, power and monitors to be supplied by the customer.		
		ALL MAN LIFTS TO BE SUPPLIED BY CUSTOMER IF REQUIRED		
		- ALL FIBER SWITCHES TO BE SUPPLIED BY COUNTY.		
		- COUNTY RESPONSIBLE FOR ALL CONNECTION BETWEEN MDF AND IDF'S AT ALL LOCATION.		
		- ADDITIONAL CHARGES WILL APPLY FOR BLOCKED OR DAMAGED RACEWAYS -		
1.00		- ALL VIEWING MONITORS AND WORKSTATIONS TO BE SUPPLIED BY THE COUNTY.		
1.00		- ALL RACEWAYS ARE OPEN AND NOT BLOCKED		
1.00		- WORK STATION WILL BE EITHER HDMI OR DISPLAY PORT OUTS		

Charge Acct	SubTotal Amount	Sales Tax	Quote TOTAL
0.00	50520.00	0.00	50,520.00

Signature: _____



Registered to ISO 9001:2008

Motor City Electric Technologies Inc.

A Subsidiary of Motor City Electric Co.

9440 Grinnell St.
Detroit, MI 48213-1151
TEL: (313) 921-5300
FAX: (313) 921-5310
www.mceco.com

January 7, 2019

Brent Welsler
Macomb County Public Works
21777 Dunham Road
Clinton Township, MI 48036

Subject: Macomb County Public Works
Video Surveillance System Upgrade
Motor City Electric Technologies Inc. Proposal No. 19-0372 R1

Dear Mr. Welsler:

Motor City Electric Technologies Inc. is pleased to offer our proposal for the above referenced project located in St. Clair Shores, MI.

Motor City Electric Technologies Inc. will provide the following services:

SCOPE OF SERVICES

Chapaton Pump Station

- Furnish and install one (1) Pelco VX Pro 24TB Server (replacing existing DS Recorder which will be utilized at Clintondale Pump Station)
- Furnish and install twenty (20) Pelco VX Pro Licenses w/ 3 year SUP
- Furnish and install five (5) Pelco 270 Degree Multi-Sensor Cameras (replacing four (4) exterior PTZ's and one (1) interior at Chapaton West)
- Furnish and install nine (9) Pelco 3MP Fixed Cameras and mounts (replacing all interior fixed cameras, East and West buildings)
- Furnish and install three (3) Pelco 2MP PTZ Cameras (replacing all PTZ cameras at the East and Out Building)
- Furnish and install two (2) Pelco 16 Channel POE Midspan units
- Furnish and install three (3) Pelco HPOE Power Injectors (PTZ Cameras)
- Furnish and install copper network cabling between each camera and the existing network switch utilizing the existing conduit raceway system
- Terminations and testing
- Programming
- Test and Checkout

Price: \$ 60,447.00

Clintondale Pump Station

- Install one (1) Pelco DS Recorder from Chapaton and convert to VX Pro
- Furnish and install ten (10) Pelco VX Pro Licenses w/ 3 year SUP
- Furnish and install one (1) Pelco 3MP Fixed Cameras (replacing control room camera)
- Terminations and testing
- Programming
- Test and Checkout

Price: \$ 4,311.00

Biofilter Pump Station

- Convert existing Network Video Recorder from DS to VX Pro
- Furnish and install two (2) Pelco VX Pro Licenses w/ 3 year SUP
- Programming
- Test and Checkout

Price: \$ 1,574.00

Bon Huer Pump Station

- Convert existing Network Video Recorder from DS to VX Pro
- Furnish and install two (2) Pelco VX Pro Licenses w/ 3 year SUP
- Programming
- Test and Checkout

Price: \$ 1,574.00

Violet Pump Station

- Convert existing Network Video Recorder from DS to VX Pro
- Furnish and install three (3) Pelco VX Pro Licenses w/ 3 year SUP
- Programming
- Test and Checkout

Price: \$ 1,690.00

PRICE

The Total Lump Sum for the above material and installation as specified herein by Motor City Electric Technologies Inc. is Sixty Nine Thousand Five Hundred Ninety-Six and 00/100 (**\$69,596.00**) Dollars.

TERMS AND CONDITIONS

1. All prices shall remain in effect subject to your acceptance until February 7, 2019.
2. Labor is based on IBEW, Sound and Communication rates. Work will be performed Monday through Friday, 8 hour days (First Shift).
3. Our terms of payment are thirty (30) days net from date of invoice. We will invoice the last working day of each month for all engineering performed that month
4. Our installation price does not include the following:
 - a. Bonds or permits (if required)
 - b. Overtime or premium shift
 - c. Network devices or switches
 - d. Additional Conduit Raceway System (if required)
 - e. 120VAC Circuits or Outlets
 - f. Additional NVR or storage (other than Chapaton)
 - g. Exterior Camera Mounts (reuse existing)
5. Motor City Electric Technologies will not be responsible for correctness or accuracy of any information supplied by others or the subsequent errors resulting from such incorrect information.

6. Motor City Electric Technologies will not be held liable for any schedule delays due to drawing approval delays and/or errors or omissions of others.
7. Back charges for any field additions, deletions, modifications or "corrections" authorized and implemented without our knowledge and consent will not be accepted.
8. Standard manufacturer warranties apply unless otherwise stated.
9. This proposal is not a firm offer and shall not bind MCET to enter into an agreement for the work described. Any agreement must be based upon terms acceptable to MCET.

Thank you for the opportunity to quote these services. We look forward to working with you on this project. Should you have any questions regarding our proposal, please do not hesitate to call.

Sincerely,



Marc Spontack
Security Engineer
Motor City Electric Technologies Inc.
(313) 957-3435
E-mail: mspontack@mce-tech.com

/re



Candice S. Miller

Public Works Commissioner
Macomb County

From: Macomb County Public Works Office

Date: 2/6/19

To: 8 ½ Mile Relief Drain Board

Copy: File
Evaluation Committee

RE: Proposal Evaluation Project Award Recommendation
MCPWO RFP No.: **WWS-2019-RFP-002**
MCPWO Proposal Name: **Chapaton RTB Canal Upgrades - Design**

This is an open competitive contract for the Design and Engineering Service to the Chapaton RTB Canal Upgrades. The main goal for this project is to improve the water quality in Lake St. Clair. This project will expand storage within the Chapaton RTB canal up to 15-20 Million Gallons (MG). This combined with the additional 10-15 MG in the Phase 2 – In-System storage project will give us over 30 MG of storage and effectively reduce Combined Sewer Overflows by up to 75%. This project will also look to create a green space which could be used for further water quality improvements, public recreation, and educational training areas.

The approved budget for this base design contract is \$1,000,000.00.

The Request for Proposals (RFP) was advertised from 11-7-18 to 1-15-19 on the Michigan Inter-Governmental Trade Network (MITN) website. Six-Hundred Thirty-One (631) solicitations were sent out via MITN and Fifty-Six (56) firms downloaded the RFP. There were no Addendums issued during the course of the RFP.

On 1-15-19, proposals were received from 2 consultants. Each member of the Evaluation Committee independently reviewed and scored the proposals in accordance with MCPWO’s policy. The possible range of scores was from 0 to 100. For this review, MCPWO reached out to Eastpointe and St. Clair Shores to have a representative on the technical review team. For this they chose Brent Avery, which was an excellent choice with his vast experience running Chapaton and now with his role at SEMSD. The proposers were ranked as follows:

Firm	Technical Score
Tetra Tech	92.2
Wade Trim	96.9
Maximum Possible Score	100

Firm	Cost
Tetra Tech	\$549,883.00*
Wade Trim	\$977,661.00

*The Tetra Tech scope and cost proposal was limited in respect to the vision of the project as a whole. The Wade Trim proposal included the full MCPWO vision for the project.

ADDRESS: 21777 Dunham Road, Clinton Township, Michigan 48038 • 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

Due to the cost discrepancy, the review team went through an interview process with both teams so that they could be given an opportunity to present their vision for the project. Both teams are very strong, but the Wade Trim team clearly presented to the MCPWO staff and SEMSD that they fully understood the project and shared the same vision for the work to be done. The level of conceptual drawings and vision that were presented within the proposal were much better. By being at this level early in the process they have opened the doors to numerous additional funding opportunities for our office as a result of their unique proposal. MCPWO have already started setting up meetings with Federal Legislatures and have submitted the revised plan from Wade Trim to Great Lakes Restoration Initiative (GLRI). MCPWO has been told that GLRI has upgraded us to a Tier 1 status for grant funding which they have \$5 million allocated for the State of Michigan. Some other funding opportunities include the Green Project Reserve grant which is part of the SRF that we are going to apply for. NOAA and the National Fish and Wildlife also both have potential grant opportunities. We believe these grant opportunities resulting from the unique features of their proposal will far exceed the increased design cost difference between the two proposals.

Due to all of the reasons listed above the Evaluation Committee recommends that **Wade Trim**, the number one ranked proposer, be named as the consultant for the above referenced Project. This project is within our approved design budget.

On behalf of the Board please indicate your approval of this recommendation by signing below. Thank you for consideration of this recommendation.

Vince Astorino
Operations & Flow Manager
MCPWO Engineering-Wastewater Services

Steve Rozycki, PE
Engineer II
MCPWO Engineering-Wastewater Services

Evans Bantios, PE
Construction & Maintenance Manager
MCPWO Engineering-Wastewater Services

Stephen Downing
Engineer II
MCPWO Engineering-Wastewater Services

Brent Avery
Administrator
SEMSD

Approved: _____

Not Approved: _____

Hold: _____

Authorized Board Member Signature

Authorized Board Member Name (print)



Wade Trim Associates, Inc.
25251 Northline Road • PO Box 10 • Taylor, MI 48180
734.947.9700 • www.wadetrim.com

February 6, 2018

Macomb County Public Works Office
21777 Dunham Road
Clinton Township, MI 48036

Attention: Mr. Vince Astorino

Re: Professional Engineering Scope of Services
Chapaton RTB Canal Upgrades

Dear Mr. Astorino:

Per your request, Wade Trim is pleased to provide this scope of services document to the Macomb County Public Works for professional services related to the Chapaton RTB canal.

Project Description Summary

The Chapaton RTB Canal Upgrades Project will provide upgrades to the existing Chapaton RTB canal to increase retained volume to minimize discharge into Lake St. Clair. Anticipated major improvements consist of a new West Gate Structure and Site and Civil Work required to increase the cross section of the existing canal.

Scope of Services

Professional services are to be provided for the project in four separate tasks as described below. Since the configuration of the project may change as each task is completed, the Scope of Services and budget shall be reviewed by the Engineer and the Macomb County Public Works Office (MCPWO) and modified, if necessary, prior to initiation of the subsequent tasks.

Task 1 - Project Management

The following project management activities are to be performed as part of the project:

- A. Provide general management and technical administration of the project.
- B. Develop and maintain a master project schedule. The project schedule will be capable of identifying progress of individual tasks and of the entire project. The Engineer will submit monthly progress reports summarizing activities completed, work remaining, and identifying any problems which are anticipated.
- C. Coordinate work of subconsultants, including all efforts required to maintain consistency in an effort between the team members. This also includes the routine administrative functions required to properly maintain staffing levels, assure proper accounting of both staff time and project expenses, and maintain general order.
- D. Provide technical reviews of the project.

- E. Prepare/maintain project records and billing, including effort required to maintain a complete set of administrative project records and billing and cost information for the contract. Prepare monthly invoices including obtaining, preparing, and providing backup documentation.
- F. Attend regular meetings with MCPWO Project Manager.

Task 2 - Preliminary Design

Task 2 consists of engineering analysis to evaluate and finalize the design concept for the proposed project. The objective of this preliminary phase is to clearly identify the specific design elements of project for which final construction plans can be generated. The work under this task will bring the design to the 30% level and includes the following subtasks:

- A. Project Initiation - Conduct project kickoff meeting to initiate project and review project goals and objectives. Attendees to include key MCPWO and consultant design team members, including MCPWO O&M staff to obtain input on existing facility performance and operator concerns for new facilities.
- B. Preliminary Basis of Design - The purpose of this task is to prepare a preliminary Basis of Design summary to establish design criteria and formulate design concept alternatives. Specific items include the following:
 - 1. Review of existing documents and information.
 - 2. Perform site survey.
 - 3. Review, develop, and summarize hydraulic design requirements and constraints.
 - 4. Review and assemble geotechnical information to summarize geotechnical and structural design requirements.
 - a. Geotechnical Field Investigation
 - Develop detailed field investigation scope based on desktop study.
 - Geotechnical drilling - Health and safety plan, Miss Dig, and proposal budget including 160 LF of drilling.
 - Condition assessment of existing South Canal Wall, including length of sheeting geophysical measurements.
 - Laboratory testing.
 - Geotechnical data report.
 - Environmental sampling, laboratory analysis, and report on disposal characterization for soils to be excavated.
 - b. Geotechnical Analysis
 - Evaluate global stability and structural capacity of south canal sheet pile wall for canal dry and deeper dredge line conditions.
 - Evaluate global stability of reduced-width north peninsula for canal dry and deeper dredge line conditions.
 - Evaluate seepage and soil piping potential for flow beneath reduced-width north peninsula for canal dry and deeper dredge line conditions
 - Evaluate internal canal slope stability under rapid filling and dewatering cycles, surface water erosion, and stability to support desired plant life.

- Develop conceptual section / layouts of stable configurations for use in hydraulic and structural models.
- Evaluate onsite use for excavated materials.
- Geotechnical Basis of Design.
- Develop design concepts alternatives for canal expansion and new gate structure. It is anticipated that this will require three or less alternative concepts.

C. Evaluate Design Concept Alternatives

After MCPWO approval is obtained for the preliminary design criteria and concept alternatives identified in Task 2B, the Engineer will conduct detailed evaluation of the selected design concept alternatives for the following project components:

1. Geotechnical
2. Hydraulic
3. Operations
4. Canal Storage Volume
5. New Gate Structure
6. Wetland
7. Existing Gate Structure (modify or remove)

Alternative concept evaluations will include assessment of increased canal volume, flushing system modifications (innovative idea), major equipment types and features related to each design component, including development of capital costs and considerations for life cycle O&M costs. The MCPWO input will be solicited during alternative development and evaluation by conducting workshops to review technical approach, O&M considerations, and evaluate major equipment selection for the project.

D. Prepare Basis of Design Technical Memorandum

1. Prepare Basis of Design Technical Memorandum that summarizes design criteria and alternative evaluations conducted in Subtasks A through C.
2. Develop recommendations to Owner for design components based on technical evaluations.

E. Develop 30% Preliminary Drawings and Specifications

1. Upon acceptance of the Basis of Design Report recommendations, proceed with preliminary plan layouts for the selected design components. Develop plans to 30% level suitable for formal QA/QC or Value Engineering review. Preliminary drawings will include site layout of canal upgrades in relation to existing facilities, utility lines, and surface features and preliminary gate structure layout drawings, including the location of major pieces of equipment.
2. Prepare outline for contract specifications identifying preliminary specification list and contract forms, and schedule for anticipated final drawing list divided into appropriate technical disciplines.
3. Prepare preliminary opinion of probable construction cost based on 30% level plans.

F. Conduct QA/QC Review (30% Design Level)

1. Engineer will conduct internal review of 30% level plans to verify conformance with corporate QA/QC policy. Cost of construction is a critical element of the project. Therefore, the QA/QC activities will include constructability reviews to minimize cost related changes.

G. Progress Meetings

Progress meetings will be held at least monthly and at other times as deemed appropriate. Wade Trim will submit progress plans to MCPWO at the 30% completion point. Wade Trim will keep MCPWO advised of progress through meetings, meeting notes, email, and written correspondence. MCPWO comments will be reviewed and incorporated as appropriate in the contract documents. This agreement assumes that two workshops, one major review meeting (30%), and monthly progress meetings will be held during the Preliminary Design Phase.

- #### H. Assist MCPWO with Permitting and Transfer of the Canal from the Waters of the State to the District

Task 2 - Deliverables

- Basis of Design report summarizing design criteria and technical evaluations with recommendations for project design components.
- 30% design drawings and outline of specifications.
- Preliminary construction schedule.
- Preliminary opinion of construction costs.
- Equipment data sheets.
- Meeting summaries.
- 30% design level construction cost estimate.

MCPWO Task 2 - Inputs

- Designate a person to be MCPWO's Project Manager.
- Attend project progress meetings.
- Designate appropriate MCPWO operations staff to participate in technical discussions and workshops to provide input and reach consensus on selected storage, control, and feature alternatives to finalize design concept.
- Review and approve consultants' recommendations for Basis of Design.
- Provide review comments on 30% design level plans.

Task 3 - Final Design Phase

Upon completion of Task 2, the Engineer shall proceed with preparation of detailed construction plans and specifications for bidding the project. Specific design tasks to be included under Task 3 include the following subtasks:

A. Final Plans and Specifications

Detailed construction plans for the selected concept and components will be developed. Final design drawings will be divided into civil, architectural, structural, process, mechanical, electrical, and instrumentation and controls as applicable for the selected project components. The preliminary design drawings will be finalized into a coordinated bid document format with contract specifications.

Contract specifications will be prepared in the Wade Trim standard format which are an adaptation of the Contract Specification Institute (CSI) format and allows provisions for the MCPWO supplied modification for contracting requirements. The Engineer will submit draft plans and specifications for Owner review and comment at the 60% and 90% design levels.

B. Geotechnical

1. Detailed geotechnical analysis and design for selected option:
 - a. Design of earth retention as needed, including supplementing the south sheet pile wall with tie backs or toe buttress.
 - b. Design of seepage control measures including toe drains, groundwater cutoff, or other measures.
 - c. Design of supplemental elements to enhance stability of north peninsula including sheeting, tie backs, cofferdam, etc.
 - d. Foundation analysis and recommendations for new gate structure, control building, and intermediate weir walls.
 - e. Feasibility analysis for cofferdam to construct gate structure (to be designed by the Contractor).
 - f. Geotechnical Interpretive Report to address design elements.
 - g. Environmental review to determine restrictions for potential reuse and/or landfilling of excavated canal bottom or fill materials from the peninsula.
 - h. Develop decanting and spoil handling due care plan.
 - i. Prepare drawings (60%, 90%, and final submission).
 - j. Prepare specifications (60%, 90%, and final submission).
 - Excavation
 - Earth retention
 - Backfill
 - Geotechnical instrumentation

C. Permitting and Approval

Upon approval from the MCPWO, plans will be forwarded to the necessary permitting agencies. Responses to agency review comments will be prepared with recommendations for incorporation forwarded to the MCPWO. If necessary, adjustments will be made to the plans before the final bidding documents are prepared. It is assumed that any fees associated with permit review applications will be paid for by MCPWO. Fees and labor associated with the acquisition of permits for general construction will be the responsibility of the selected Contractor as described in the bidding documents.

D. Cost Estimates

The Engineer will update the 30% opinion of probable construction cost at the 60%, 90%, and 100% design levels to reflect the additional design detail developed during this phase of the project.

E. QA/QC Review

1. The Engineer will conduct internal QA/QC reviews of 60% and 90% level design plans.
2. The Engineer will submit the 60% and 90% design level plans to the MCPWO for review and comment.

F. Progress Meetings

Monthly progress meetings with the MCPWO established during the preliminary design phase will continue during the design phase. Progress meetings will be held at least monthly and at other times as deemed appropriate. Wade Trim will submit progress plans to MCPWO at the 60% and 90% completion points. Wade Trim will keep the MCPWO advised of progress through meetings, meeting notes, email, and written correspondence. MCPWO comments will be reviewed and incorporated as appropriate in the contract documents. This agreement assumes that two major review meetings (60% and 90%) and monthly progress meetings will be held during the final design phase.

Task 3 – Deliverables

- A. 60% and 90% level plans and specifications for the MCPWO review.
- B. 100% set of plans and specifications for construction.
- C. 60%, 90%, and 100% design opinion of probable construction costs.
- D. 60%, 90%, and 100% construction schedule updates.
- E. Permit submittal applications.
- F. Final geotechnical report.
- G. Meeting summaries.
- H. Updated 3D BIM Model of proposed upgrades.

Task 3 - MCPWO Inputs

- A. Designate a person to be MCPWO's Project Manager during the final design phase.
- B. Review and approve Engineer recommendations for Scope of Services and budget for Task 3 services based on final design concept established in Task 2. Provide Notice to Proceed on Task 3 services based on final design concept established in Task 2. Provide Notice to Proceed on Task 3, including processing approvals for any contract modifications or additional services authorizations, if required.
- C. Review geotechnical investigation recommendations and authorize additional soils investigations (if necessary).
- D. Review and comment on 60% and 90% design.
- E. Review and approve final plans and specifications for bidding.
- F. Execute any applications or documents required of the MCPWO for permit approvals, including processing payment for any fees associated with these requirements.

Community Engagement: Professional services for community engagement work will be provide as requested by the MCPWO.

- A. One community forum event
- B. One public hearing event
- C. Four stakeholder meetings
- D. Assist with material development and facilitation

Task 4 - Bidding

- A. Attend and assist with pre-bid conference
- B. Prepare addenda
- C. Assist with review and evaluation of bids
- D. Attend and assist with pre-award meeting

Construction Administration

Construction administration is not included with these Scope of Services. A budget will be determined after design phase services are completed.

Schedule

Our team anticipates a 12-month duration to complete the design tasks associated with this project.

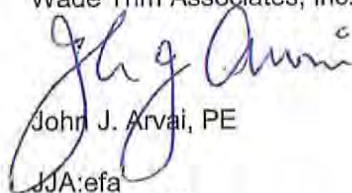
Price Proposal

The revised price proposal provided to the MCPWO has been attached to this proposal.

If you have any questions or require additional information, please do not hesitate to contact me. We look forward to working with the Macomb County Public Works Office on this project.

Very truly yours,

Wade Trim Associates, Inc.



John J. Arvai, PE

JJA:efa

AAA 8190.19

PW120190206_Astorino_MACOMB COUNTY LTR.DOCX

Attachment

PROPOSAL NO.: MCPWO-WMS-2019-RFP-002

10020078

WADE Price Proposal
TRIM

CHAPATON RTB CANAL
UPGRADES

ESTIMATE TO: 4 1/2 Mile Relief Drain Drainage
Contract

Bill Rate \$ 200 \$ 215 \$ 230 \$ 245 \$ 260 \$ 275 \$ 290 \$ 305 \$ 320 \$ 335 \$ 350 \$ 365 \$ 380 \$ 395 \$ 410 \$ 425 \$ 440 \$ 455 \$ 470 \$ 485 \$ 500 \$ 515 \$ 530 \$ 545 \$ 560 \$ 575 \$ 590 \$ 605 \$ 620 \$ 635 \$ 650 \$ 665 \$ 680 \$ 695 \$ 710 \$ 725 \$ 740 \$ 755 \$ 770 \$ 785 \$ 800 \$ 815 \$ 830 \$ 845 \$ 860 \$ 875 \$ 890 \$ 905 \$ 920 \$ 935 \$ 950 \$ 965 \$ 980 \$ 995 \$ 1010 \$ 1025 \$ 1040 \$ 1055 \$ 1070 \$ 1085 \$ 1100 \$ 1115 \$ 1130 \$ 1145 \$ 1160 \$ 1175 \$ 1190 \$ 1205 \$ 1220 \$ 1235 \$ 1250 \$ 1265 \$ 1280 \$ 1295 \$ 1310 \$ 1325 \$ 1340 \$ 1355 \$ 1370 \$ 1385 \$ 1400 \$ 1415 \$ 1430 \$ 1445 \$ 1460 \$ 1475 \$ 1490 \$ 1505 \$ 1520 \$ 1535 \$ 1550 \$ 1565 \$ 1580 \$ 1595 \$ 1610 \$ 1625 \$ 1640 \$ 1655 \$ 1670 \$ 1685 \$ 1700 \$ 1715 \$ 1730 \$ 1745 \$ 1760 \$ 1775 \$ 1790 \$ 1805 \$ 1820 \$ 1835 \$ 1850 \$ 1865 \$ 1880 \$ 1895 \$ 1910 \$ 1925 \$ 1940 \$ 1955 \$ 1970 \$ 1985 \$ 2000 \$ 2015 \$ 2030 \$ 2045 \$ 2060 \$ 2075 \$ 2090 \$ 2105 \$ 2120 \$ 2135 \$ 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Prof Area

Total Labor Hours

Task Pricing Totals

Labor

ODC/ Expenses

Support (NTH)

Project Admin (WTF) / Staff

CADD Tech III (WTF) / (NTH)

CADD Tech IV (WTF) / (ASST)

Staff Engineer (ASST)

Project Engineer (ASST)

Project Manager (ASST)

Principal Engineer (ASST)

LA Staff (WTF) / LA III (MNSK)

Planning Associate (MNSK)

Pr. LA (WTF) / Planning

Survey Crew (WTF)

Prof. Surveyor III (WTF)

Project Specialist III (WTF)

Engineer I (WTF) / Staff Prof. (NTH)

Engineer II (WTF) / Sr. Staff Prof. (NTH)

Project Prof. (NTH)

Project Engineer (WTF) / Project Prof. (NTH)

Project Engineer II (WTF) / Sr. Project Prof. (NTH)

Principal Engineer (NTH)

Pr. Engineer III (WTF) / Principal Engineer (NTH)

Pr. Engineer IV (WTF) / Sr. Pr. Engineer (NTH)

Sr. Professional (WTF)

P.M. - Sr. Professional (WTF)

Principal (WTF)

Sub - Totals

ALTERNATE - COMMUNITY ENGAGEMENT

Wade Trim

MNSK

TOTAL

Sub Mark Up

TOTAL

\$ 4,800 \$ 55,545 \$ 118,880 \$ 51,000 \$ 48,000 \$ 111,025 \$ 79,000 \$ 6,000 \$ 38,300 \$ 91,800 \$ 2,540 \$ 7,000 \$ 43,000 \$ 5,040 \$ 58,300 \$ 3,455 \$ 28,140 \$ 18,200 \$ 14,800 \$ 502,535

\$ 977,661

\$ 35,430

\$ 362,650

\$ 16,700

\$ 9,832

\$ 1,000.00

\$ 11,500

\$ 22,150

Section 3



WORK PLAN

UNDERSTANDING OF THE PROJECT

The MCPWO operates the Chapaton Retention Treatment Basin (RTB) which was constructed in the mid-1960s to provide wet weather relief to the local communities. While the facility is in full compliance with the NPDES permit requirements, the MCPWO desires to further reduce combined sewer overflow (CSO) and pollutant loadings to Lake St. Clair from the Chapaton Retention Treatment Basin (RTB) at 9 Mile Road and Jefferson in St. Clair Shores. These reductions would improve the water quality, habitat, and recreational opportunities of Lake St. Clair.

In the recently completed Chapaton RTB Expansion Study, the overflow statistics were compiled for years 2005 through 2017. These statistics indicate that the 28 MG Chapaton RTB, including the existing canal storage of about 3 MG, discharges CSO to Lake St. Clair about 7 times per year. The statistics also indicate that the overflows would be reduced by adding additional storage volume in the canal to the east and utilizing the existing in-system storage in the upstream 9 Mile and 8 ½ Mile Relief Drain.

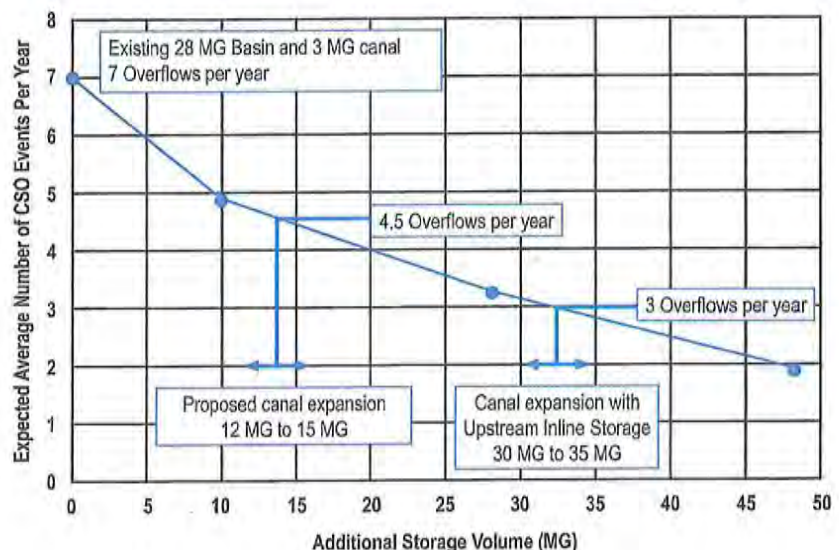
The relationship between the additional storage volume and annual CSO events is given in Exhibit 3-1.

The MCPWO proposes that a new gate structure be built to the east to create an additional 12 to 15 MG of canal storage volume. This may be accomplished by widening and deepening the canal and building a new set of canal and flushing gates further east to contain the added storage volume. The side walls of the canal may be sloped or constructed of vertical sheet pile to maximize the available storage volume. To accomplish this canal expansion the existing boat ramp would need to be removed or relocated and reconfigured in some manner at the east end or on the north side of the peninsula.

Three other major MCPWO initiatives are ongoing that will significantly lower the expected frequency and volume of CSO and/or improve the quality of the treated discharge CSO. These include:

- Chapaton RTB Segmentation Project – The RTB will be divided into first flush and flow-through compartments. The first flush compartment will capture the combined wastewater with the highest concentrations of pollutants.
- SEMSD Wastewater Master Plan – Operational changes and alternatives are being evaluated and recommended at the Chapaton and Martin RTBs and the Marter Road Booster Pump Station to capture more combined wastewater and maximize the discharge the contract capacity of 102 cfs at the Marter Road Booster Pump Station.

Exhibit 3-1 Additional Storage Volume vs Annual Overflow Events



- SEMSD Wastewater Master Plan – In-system storage alternatives are being evaluated and recommended to capture more combined wastewater in the 9 Mile Drain in Eastpointe and in the entire length of the 8 ½ Mile Relief Drain.

The proposed canal expansion and in-system storage in the 9 Mile and 8 ½ Mile Relief Drains is expected to provide about 30 to 35 MG of additional storage volume. This increased volume would reduce the average annual frequency of treated CSO from about 7 to about 3 events per year.

Wade Trim is the consultant for the Chapaton Segmentation Project and ASI is performing the hydrologic/hydraulic modeling for the SEMSD Wastewater Master Plan including the development and evaluation of alternatives. Therefore, coordination of these initiatives will be assured by the Wade Trim Team.

KEYS TO SUCCESS

Based on the Chapaton RTB Expansion study report, observations from our team site visit, and review of record documents and discussions with County staff we have identified the following key items critical to the project.

Water Quality

Improving water quality is the primary goal for this project and perhaps the largest indicator of success. The importance of clean water cannot be minimized as it can directly impact public health and the environment. Increasing the storage and capture volume by utilizing the canal will reduce discharge events as well as reduce pollutants and nutrients from entering Lake St. Clair.

Permitting

The existing Chapaton Canal is considered a Water of the State by the Michigan Department of Environmental Quality (MDEQ) and the Army Corps of Engineers (ACOE) and is protected under State and Federal laws and regulations. A joint permit application for the project will be filled out and submitted through MiWaters. Engaging the MDEQ and ACOE early in the design will help ensure the project moves smoothly into construction and minimize any last minute surprises.

Project Keys To Success

- Improving water quality
- Coordinating the permitting process with MDEQ and ACOE for project approvals
- Gaining public acceptance
- Developing technical design elements to best fit the site constraints

Public Acceptance

Gaining public support and acceptance of this project is important and will require early and up front community engagement with the public, business community, and environmental organizations. These communications will ensure that sufficient and accurate information is provided to allow for more productive discussions and gathering of constructive feedback for consideration. In addition, incorporating creative ideas to increase site aesthetics, designing the project upgrade to maintain existing recreational activities to the extent possible, such as the boat launch, or adding new activities to the area that will increase recreational use and provide economic benefits will add value to public engagement, acceptance, and support of the project.

Technical Design Elements

There are a number of key technical design elements that must be considered during the design to maximize the capture volume within the practical limits of site constraints. Geotechnical, hydraulic, operational, and constructability are key design elements that will need to be considered by each engineering discipline when developing canal upgrade expansion options for MCPWO review. The geotechnical component of the design will examine seepage, slope stability, and south side sheeting and sliding. The hydraulics component will analyze the range of flow, lake levels, and passing of peak flow. The operations component will consider wet weather sequencing, draining, and flushing. The constructability component will consider possible phasing of work, access, and discharge to the lake if it's required during construction. Further detail for each of these items and how we propose to address them follows in our Project Technical Approach.

PROJECT TECHNICAL APPROACH

Basis of Design (BOD) / Preliminary Design

The design phase will begin with preliminary design efforts that will focus on performing the necessary due diligence to allow for development of sound and well thought out canal upgrade alternatives for further analysis. Our due diligence will consist of discussions with MCPWO staff, review of existing site conditions and previous study phase investigations, collecting and analyzing additional data, field survey, and identification of permitting requirements.

It is critical during this preliminary design phase that regularly scheduled progress meetings and design workshops are held with MCPWO to ensure design concepts and plans are communicated clearly between all parties to allow for effective decision making. Also, meetings with the MDEQ, ACOE, and other stakeholders will be needed early in the process to address stakeholder issues or concerns. Once the preferred alternative is accepted and the BOD is completed, Wade Trim will move forward with producing the 30% documents.

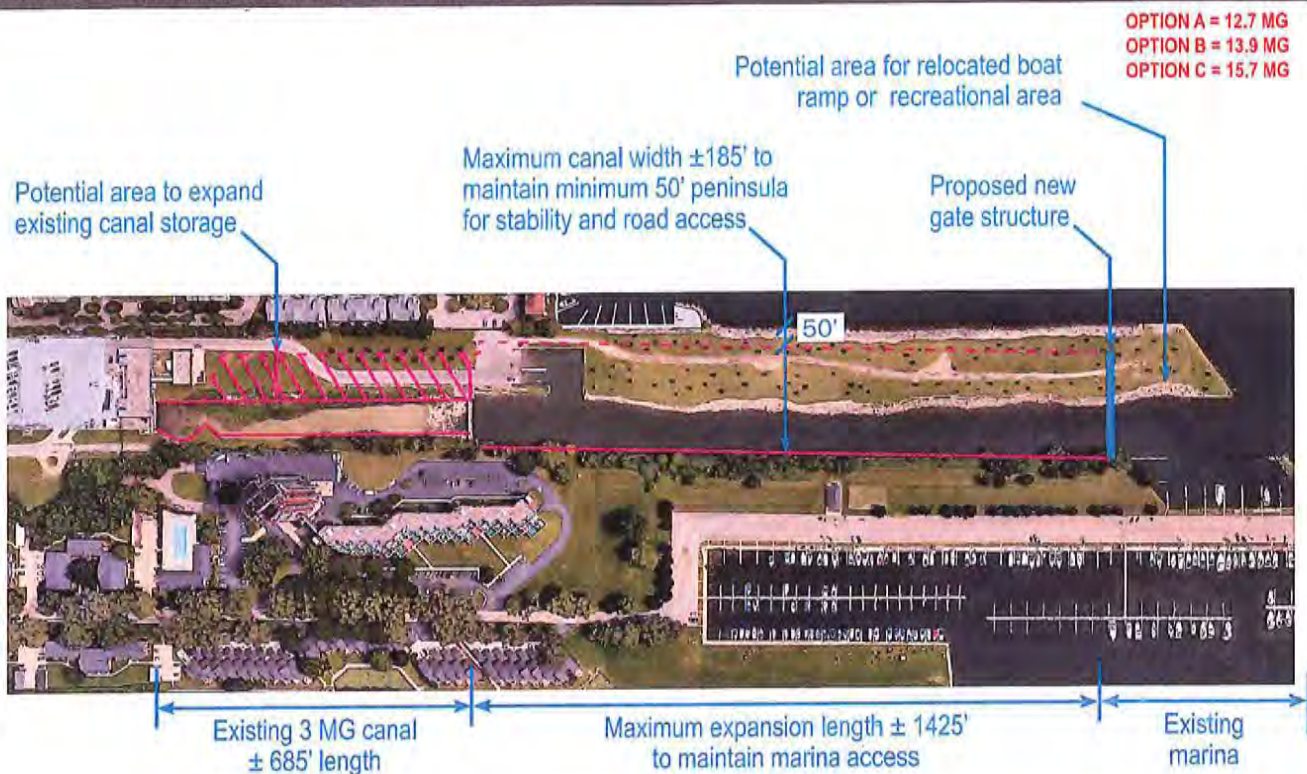
Preliminary design of the Chapaton RTB canal upgrade project will incorporate the following design considerations, criteria, and constraints.

Storage Volume

The storage volume increase for the canal upgrade project in the RFP indicated that a minimum increase of 10 Million Gallons (MG) is required, with the goal of increasing it to 12 MG to 15 MG.

The increase in storage volume is a function of canal length and the canal cross sectional area. Given the identified project area there are established constraints that will limit the configuration and options, as shown in Exhibit 3-2. The maximum length of the canal to be utilized for the increased storage will be limited to the east by the boat dock for the marina, on the south side of the canal. The canal cross sectional area will be limited by the width of the existing land peninsula to remain, as well as consideration of any limiting geotechnical concerns to maintain stable embankments for the canal that will be empty most of the time, and the maximum canal depth to allow for dewatering back into the basin. Working within the existing constraints still allows varying configuration options to consider and will drive many other decisions during the design phase. This means a comprehensive review of alternatives must be done early in the conceptual design phase.

Exhibit 3-2 Site Constraints for Canal Expansion



The canal length and the canal cross sectional area can vary to provide the desired increase in storage volume. To help illustrate this point, we have created a BIM model of the new canal and have performed the preliminary calculations for three potential cross-section options (identified as Options A, B, & C) that demonstrate how the different side slopes affect the increased volume provided and length of canal to be utilized.

Option A, as shown in Exhibit 3-3 on page 19, shows a cross-section that includes sloped sides rather than vertical sheet pile sections on both sides of the canal. With this cross-section, using 3:1 side slopes, 10 MG can be achieved with a length of 1,121 feet or 12 MG can be achieved with a length of 1,345 feet. Providing 15 MG with the cross section shown will require additional excavation in the area west of the existing gate or increased width or depth to the cross-section.

Option B, as shown in Exhibit 3-4 on page 19, shows a cross-section that includes a vertical sheeted wall to replace the existing sea wall on the south side and a sloped excavation on the north side. With this cross-section, 10 MG can be achieved with a length of 1,025 feet or 12 MG can be achieved with a length of 1,230 feet. Providing 15 MG with this cross-section shown will require either increased width or depth to this cross-section.

Option C, as shown in Exhibit 3-5 on page 19, shows a cross-section that includes a sheeted wall on both sides of the canal. With this cross-section, 10 MG can

be achieved with a length of 903 feet, 12 MG can be achieved with a length of 1084 feet, or 15 MG can be achieved with a length of 1,355 feet.

The summary table, shown in Exhibit 3-6, provides a quick comparison of how the different cross-section options result in varying storage volume provided. The selected design configuration will be established during the design evaluations to best fit design objectives, site constraints, geotechnical considerations, and stakeholder requirements.

Geotechnical

The modifications to the Chapaton Canal will require the analysis of many challenging soils conditions to ensure a constructible and long lasting design. Preliminary calculations of the proposed increase in volume indicate the existing canal will need to be widened in order to meet MCPWO's desired storage volume requirements from Macomb County as listed in the RFP. Some of the items that will be considered by NTH include analyzing the south retaining wall for stability in the new canal, analyzing the revised land mass for stability including sliding, ground water penetration or pass-through and stability, handling of the excavated spoils to remove absorbed water to prepare them for re-use or disposal, and environmental analysis for potential issues during excavation and construction.

The proposed cross-section Options A, B, & C presented herein demonstrate our team's approach to maintain the delicate balance between maximizing the capacity

Exhibit 3-6 Comparison of Canal Expansion Cross-Section Options

CROSS-SECTION	DESCRIPTION	MAXIMUM VOLUME PROVIDED	RELATIVE COST
Option A	3h:1v side-slope / both sides	12.7 MG	\$
Option B	North bank 3:1 slope / south bank vertical wall	13.9 MG	\$\$
Option C	Vertical sheeted wall / both sides	15.7 MG	\$\$\$

Notes:

- Storage volume calculated for idealized cross-section using:
 - maximum canal expansion length = 1,425
 - maximum canal width = 165 feet (based on maintaining min 50' peninsula width)
 - average storage depth = 8 feet design
- Final design configuration to be established during design evaluations to best fit design constraints and stakeholder requirements. This may include deepening the canal and/or expanding the width of the existing canal storage segment.

Exhibit 3-3 Cross-Section Option A - Sloped Sides

OPTION A: 8,915 GALLONS PER FOOT LENGTH AT 8'-0" AVERAGE DEPTH"

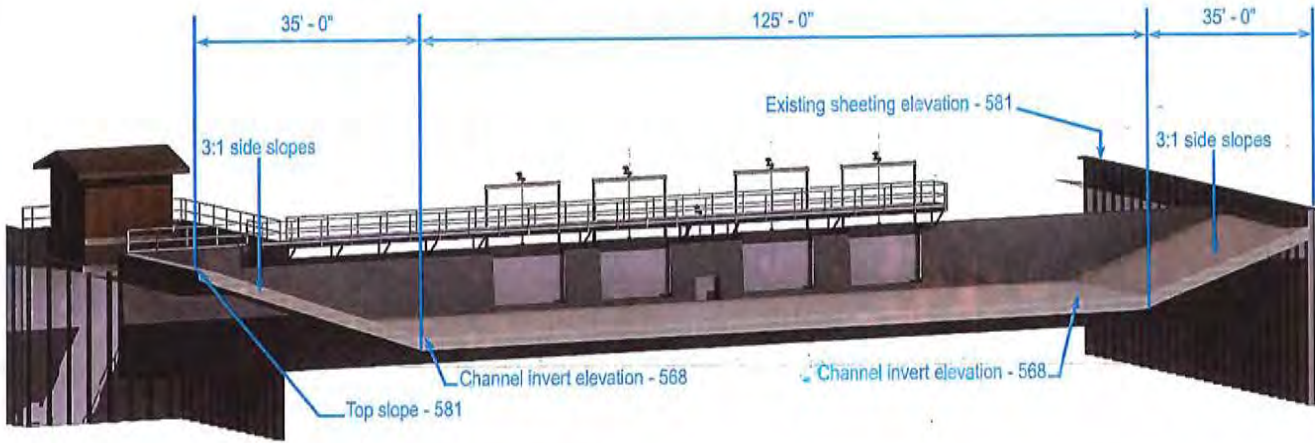


Exhibit 3-4 Cross-Section Option B - Combination Vertical/Sheeting South, Slope Side North

OPTION B: 9,754 GALLONS PER FOOT LENGTH AT 8'-0" AVERAGE DEPTH"

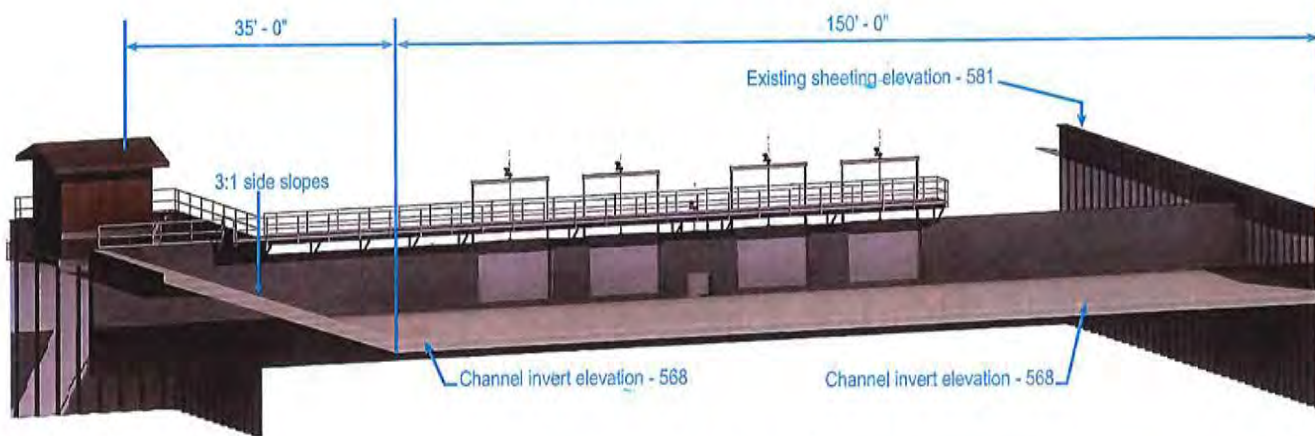
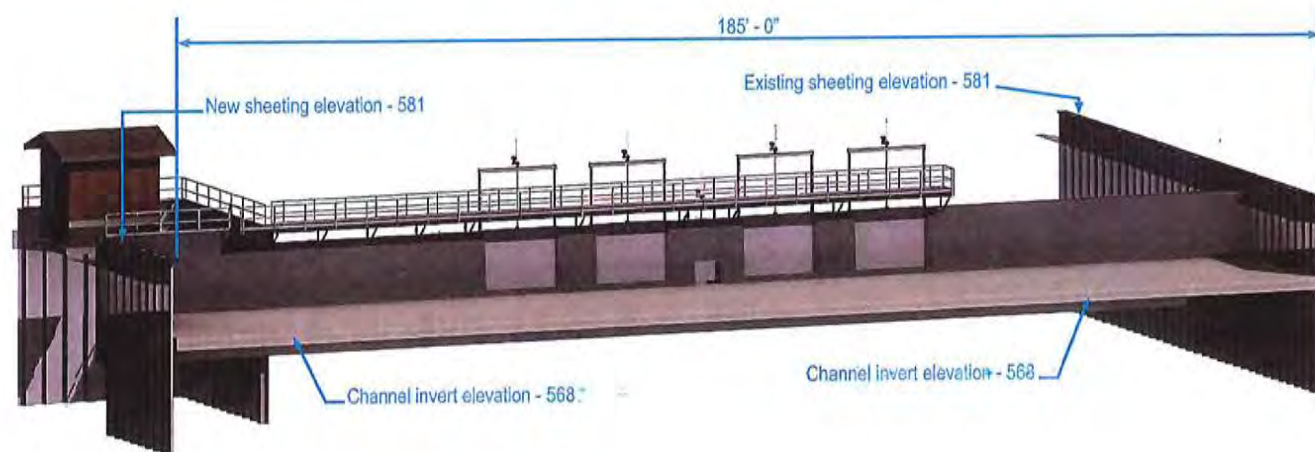


Exhibit 3-5 Cross-Section Option C - Vertical Sheeting on Both Sides

OPTION C: 11,070 GALLONS PER FOOT LENGTH AT 8'-0" AVERAGE DEPTH"



within the canal and ensuring a stable solution in all its forms on the surrounding features. Stability concerns present themselves in four different manners on this project:

1. Global stability of earthen masses
2. Structural stability of earth retaining structures
3. Seepage/infiltration of ground water and piping of soils
4. Surface erosion

Each manner of stability has its own unique challenges and solutions that must be brought together to ensure a successful project, as shown in Exhibit 3-7 on page 21.

The first step to verify stability of the proposed cross-section options is to consider global stability of the earthen masses. Based on the information provided in the RFP, stability of the peninsula along the north side of the canal can be maintained via a 3 horizontal:1 vertical slope. Therefore, the Wade Trim Team has utilized 3:1 slopes in the preliminary evaluation of the proposed options to optimize capacity while maintaining global stability with sufficient factors of safety against global instability.

The south side of the canal presents its own stability challenges. As presented in the RFP documents, the existing steel sheet pile wall that lines the south side of the canal is "in generally good condition and appear plumb" in their existing state. However, the sheet pile wall east of the existing control gate will experience a totally new condition – a dry condition within the canal with an elevated groundwater table behind. This condition may be exacerbated by increasing the dredge depth at the base of the sheet pile wall. Even though this portion is supported by a steel sheet pile wall, global stability must be evaluated first before the structural elements of the sheet piling can be considered. Based on the information provided with the RFP, the proposed configuration presented in Options B and C are globally stable; however the structural capacity of the existing sheet pile wall must be evaluated and its ability to retain the earth and hydrostatic load that occurs when the channel is drained and/or dredged must be confirmed. This condition would have minimal impact on the proposed Option A, due to the proposed armored slope to be installed at the base of the sheet pile wall. Remaining thickness of steel and the type of

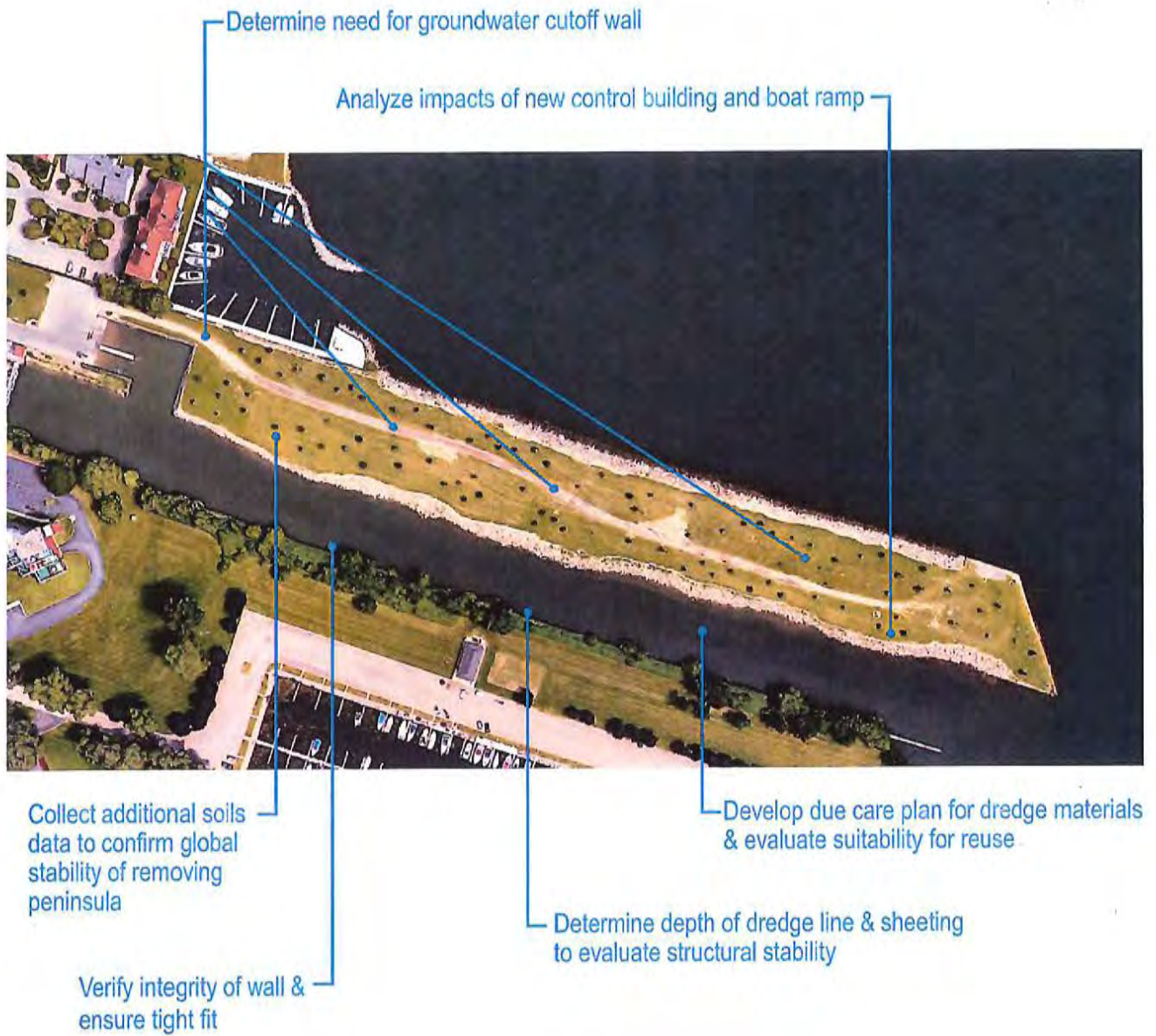
support system are easily determined by field investigation; however one critical component is the depth of the sheet piles. This can be estimated using methods developed locally at the University of Detroit Mercy, which utilize equipment and techniques commonly used to determine acceptability of driven foundation piles. This information will allow the Wade Trim Team to confirm whether the existing sheet pile walls are structurally stable in all proposed conditions.

Control of lake and groundwater is key to both the global and structural stability of the proposed canal expansion. Most slope and retaining wall failures occur not due to earth or traffic loads, but rather a change in the groundwater conditions or an inability to properly manage groundwater. The existing canal west of the control gate experiences little to no groundwater seepage when the canal is dry; however, the reach of canal east of the control gate has very little land mass to hold back the water and prevent Lake St. Clair from infiltrating into the expanded canal when it is emptied. Options A and B will likely require a groundwater cut-off wall, possibly steel sheet piling, embedded to a sufficient depth (approximately

15-20 feet below the base of the canal) to dramatically slow the rate of seepage and eliminate the potential for piping of soils, while Option C must consider hydrostatic loads in evaluation of the structural stability. The proposed north sheet pile wall presented in Option C would serve as a groundwater cut-off wall and likely be embedded to similar depths as described above.

Surface erosion has taken place and will continue to take place anywhere earth is exposed to rapid fills, drawdown, and surface runoff. Erosion can impact the structural stability of retaining walls, headwalls, gates, and other structures and must be protected against in these critical areas using hardscape (stone or concrete) or other natural erosion control methods. This balance between capacity and stability must also consider a balance between concrete and steel hardscape against the aesthetics, community benefits, and water quality benefits provided by natural shoreline in a riverine environment.

A Stable Solution In All Its Forms



NTH currently uses updated versions of available geotechnical analysis software including:

- Slide 2018 8.020
- Plaxis 3D 2018
- Settle3D 4.018
- LPile 2018.10.08
- Shoring Suite (CT Shoring)

The above analyses will be confirmed based on the data which will be collected by the Wade Trim Team during the preliminary design portion of this project. Once the necessary data is collected, the models can be re-run to determine the physical dimensions which will be used in the design criteria.

The following tasks will be performed in the preliminary design phase in order to optimize the storage capacity of the new canal while taking into account the long-term stability of the remaining components:

- Analysis of existing south sheet pile retaining wall in “east” storage canal (See Exhibit 3-8)
 - o Determine the stability of the wall if dredged or dewater canal on north side of wall
 - o Determine the depth of wall and if any tie-backs exist or will be required
 - o Identify if there are any penetrations in the wall that would convey water from the marina south of wall which would fill the canal from the lake
- Analyze the proposed land mass in different configurations of new “east” canal for stability using modeling software where needed
 - o Determine the potential need for a cofferdam or sheeting around the perimeter of the proposed peninsula to keep the soils from sliding
 - o Determine the minimum width of the proposed peninsula both with and without a potential cofferdam to verify the feasibility of widening the canal to the optimum width
 - o Note – We understand it may be difficult to get a permit from the DEQ/COE to install a new cofferdam on the north side of the peninsula due to potential loss of access for aquatic species
- Analyze the proposed land mass for its ability to hold back water
 - o Verify if soil types will prohibit lake water from leaking under the land mass and filling the “east” canal inside the proposed gate structure

Exhibit 3-8 South Pile Retaining Wall in “East” Canal



- o Determine if sheeting or other cut-off methods are required to enhance the land mass and prevent water seepage
- Perform an analysis for foundations for a new control building and dam structure
 - o Analyze foundation types / depths needed due to soil and groundwater conditions
 - o Recommend the most favorable foundation type based on engineers estimated construction costs, potential for changing conditions, and constructability
- Perform an environmental analysis on the existing soils to determine the restrictions for potential land-filling of excavated soils toxicity characteristic leaching procedure (TCLP)
- Design cofferdams/unwatering methods for construction at end of canal
 - o Consider the need for dry areas to construct the new dam structure and boat launch
 - o Consider the need to discharge storm water in wet weather events
- Soils analysis of the soils for suitability/ recommendations for new roadway/walkway (soil stabilization)
- Evaluate suitability of excavated soils for reuse
- Develop decanting and spoils handling due care plan
- Design, install, and monitor geotechnical instrumentation, if required

Hydraulics

The hydraulic design criteria will be established early in the project and will include: the required peak flow rate (about 1540 cfs based on existing pumping capacity); the desired storage volume for capture of additional CSO (12 to 15 MG); the expected range of lake levels (about 571 to 578 feet); and the flushing flow rates. These criteria will govern the number and size of a new set of canal gates; the bottom width, side slopes, and length of the new section of enclosed canal; the height and length of the new weir structures along the canal; and the operating sequence for the canal gates.

Options will be developed that meet the hydraulic design criteria. These options will include: 1) keeping the existing gates and adding a new set of gates further to the east; 2) removing the existing gates and relocating

the gates further to the east; 3) removing the existing gates, relocating the gates further to the east, and adding weir structures along the canal to partition the canal into storage and treatment zones; and 4) keeping the existing gate structure and adding a weir structure near the east gate structure to retain water to support water habitat.

Hydraulic profiles will be evaluated for filling, peak flow rate, dewatering, and flushing conditions over a range of lake levels for each option.

Operations

The operating sequence for the existing and new gates will consider how both the existing set (if remaining) and the new set of canal gates will be operated. Simple and passive operating systems will be developed and evaluated for the canal gates/weirs that achieve the additional storage and flushing rates under varying lake levels. Sequences for filling, dewatering, and flushing will be developed that require a minimum number of new level sensors and gate position sensors. The operations component must also address the extended dewatering and flushing time required to empty the additional storage volume provided by the canal expansion.

Wetland & Green Infrastructure

The expansion of the RTB is proposed as an open basin extending east and waterward of the current canal storage basin within the context of the existing man-made peninsula on the shores of Lake St. Clair. The basin is proposed to be designed as an open basin and therefore will be visible to the public along this reach of the shoreline. To mitigate the ecological and aesthetic impacts of the proposed expansion our design team proposes to design the canal features in a manner that creates new native habitat types within the storage area that would provide a heterogeneous ecosystem and promote species diversity. The project will restore marsh, wet prairie, and mesic prairie for resident and migratory species of insects, fish, amphibian, reptiles, and birds. Each habitat type will provide important stop-over, nesting, and foraging opportunities to a variety of species and enhance, rather than diminish, the ecological integrity of the area. The fluctuating water levels associated with the RTB discharges will provide the requisite hydrology to support this natural habitat and contribute to its viability and sustainability. In addition, the plants occupying the habitat will assist

in improving water quality of discharges from the basin. Wetland for water treatment have proven to successfully remove, attenuate, and transform sediment laden stormwater to improve water quality from discharges to receiving waters.

In addition to the ecological habitat created, the project will provide much needed enhancements to the visual quality of this existing open space on the peninsula. The existing recreational resources will be restored by relocating the boat ramp at the east end of the peninsula and improving pedestrian access with a new network of paths and passive recreation zones along the north riparian shoreline of the canal and the upland of the remaining peninsula. Edge conditions along the basin can be designed to improve the resiliency of the shoreline to storm events and wave runup. Once established, the native habitat will require minimal ongoing maintenance and greatly reduce the need for sediment removal of the discharges. Exhibits 3-9 and 3-10 help il-

lustrate these wetland and green infrastructure ideas in conceptual profile and section view renderings.

Process, Electrical & Instrumentation

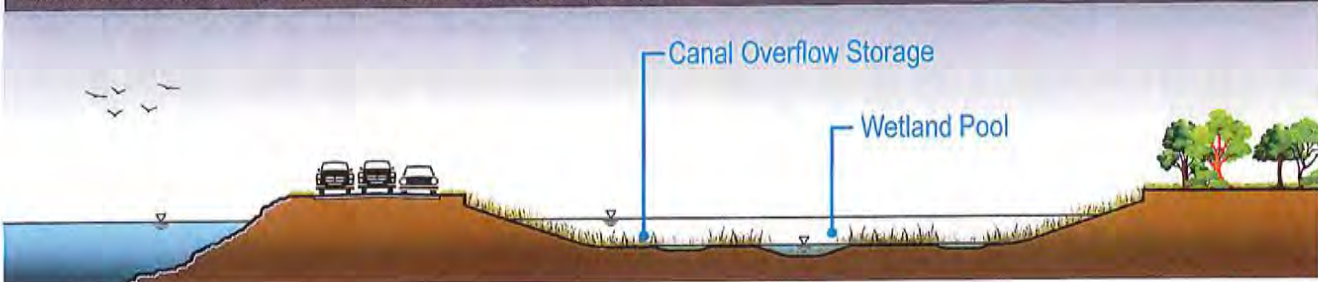
All of the options considered to increase storage will require minor additions to process, electrical, and instrumentation. We anticipate a new effluent sampling location and longer distances to pump the sample. A new control gate structure will require a large gates with the ability to operate flawlessly after long idle periods and a bubbler system to prevent ice accumulation. To support these new equipment items, power will need to be provided to the gate structure location and a new power distribution center or MCC will be installed.

The MCPWO has successfully kept abreast of instrumentation and SCADA technology and are in the process of strengthening the facilities automatic and remote monitoring and operation. Our design will support this by providing an updated communications

Exhibit 3-9 Wetland/Green Infrastructure Concept Plan View



Exhibit 3-10 Wetland/Green Infrastructure Concept Profile



link between the new and existing gate structures, East Building, and Chapaton Pump Station. We anticipate the need for new level sensors, float switches, gate and sampling controls, and likely residual chlorine and dissolved oxygen sensors (assuming the ongoing MCPWO piloting of TRC analyzers is successful). A 360 degree camera near the East Control structure will also be needed for visibility and security.

Constructability & Cost Estimating

Constructability is a project management technique that reviews the construction processes from start to finish. It is a major design consideration particularly for retrofitting existing facilities such as the Chapaton Canal that must remain available for service to an acceptable level during construction. The goal of this tool is to prevent errors, delays, obstacles, and cost overruns prior to the project actually being built, or in this case, ensuring the alternatives and options are viable and anticipated costs accurate for budgeting and programming capital improvements. It is absolutely critical that this procedure be applied when the canal upgrade alternatives and options are being developed. Employing this early review can prevent the spending of large amounts of effort exploring potential design options that have a significant constructability issue. Flushing out such issues to examine if a fatal flaw exists or adding an appropriate budget in the construction estimate to mitigate the risk can prove to be well worth the effort as it can save significant cost and time.

In addition to our Project Manager, John Arvai, the Wade Trim Team has other construction professionals familiar with the Chapaton RTB facility who will also be assisting with constructability and estimating. Dan DiPonio (WT) and Larry Gilbert (NTH) are experienced with heavy civil construction and were involved in the estimating and construction of portions of the existing Chapaton Basin facility and will assist with this effort. The importance of understanding the construction element during the early phase of design development and how proposed options can or cannot be built is critical and should not be discounted or ignored.

PRELIMINARY DESIGN CONCEPTS

The previous sections identify the various design considerations, criteria, and constraints to be evaluated with MCPWO staff during the design development to advance the design expansion options into a final

design configuration. As part of our proposal development, we have assembled 4 preliminary alternatives to illustrate the range of design concepts that may be considered; each offering unique advantages and disadvantages to be evaluated during the basis of design phase.

The RFP description details that the intent of this project is to have two Canal Control Structures to work in series by dividing the newly expanded treatment canal into two segments. Once the first segment is full, the flow will fill the second segment until both are full at which time the facility would begin the discharge into the Lake. After the event is complete, the volume captured in both the treatment canal segments would be returned to the basin by gravity to be drained back into the sanitary sewer system. In addition to the base alternative to maintain the use of the west canal structure, we have identified 3 other preliminary alternatives that may provide additional environmental, aesthetic, or operational advantages for the project. These alternatives are illustrated in Exhibit 3-11 on pages 26-27. A brief description for each of the alternatives in comparison with the base alternatives follows:

- Alternative 1 (Base) – Installation of the New East Canal Control Structure; Two Canal Control Structures that work in series
- Alternative 2 – Removal of the Existing Canal Control Structure and installation of the New East Canal Control Structure
- Alternative 3 – Removal of the Existing Gate Structure and installation of new intermediate storage weirs with backwater gates
- Alternative 4 - Installation of New East Canal Control Structure with intermediate weir for water capture to support aquatic habitat

NOTE: In Alternatives 1 and 4, where the existing gate remains in place, a flushing fill line can be installed from the lake to the west side of the existing control gate structure to allow only the existing 3 MG flushing reservoir to fill for flushing water usage in lieu of filling the entire newly constructed canal area between the existing gate control structure and the new East Canal control gate structures. This would provide cost savings to MCPWO by not having to discharge excessive amounts of lake water in the sewer system or not hav-

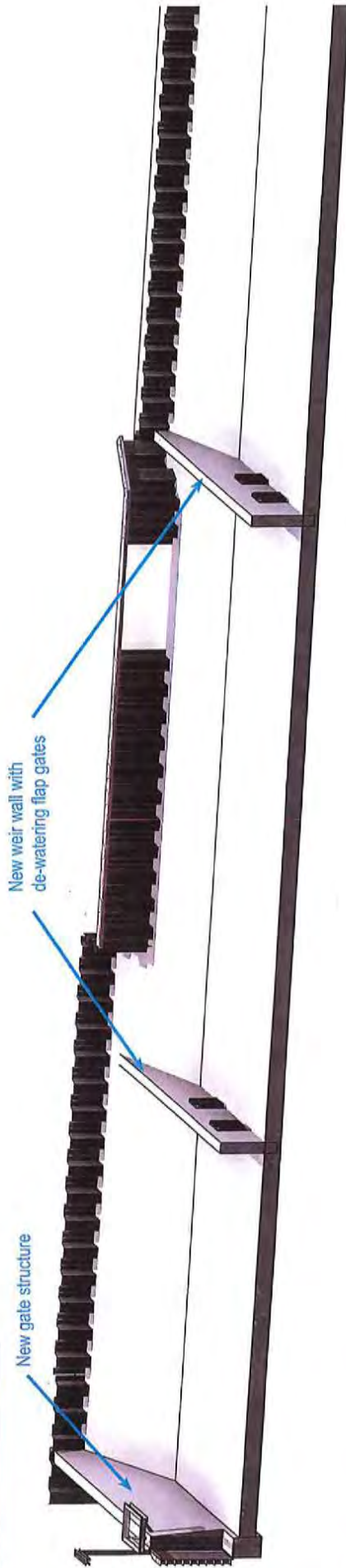
ALTERNATIVE 1 (BASE)



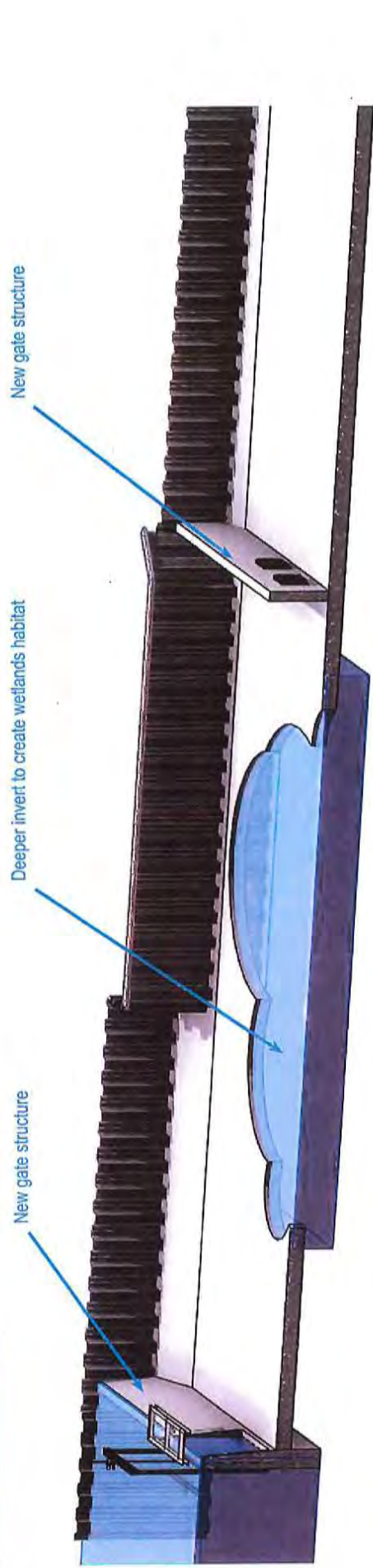
ALTERNATIVE 2



ALTERNATIVE 3



ALTERNATIVE 4



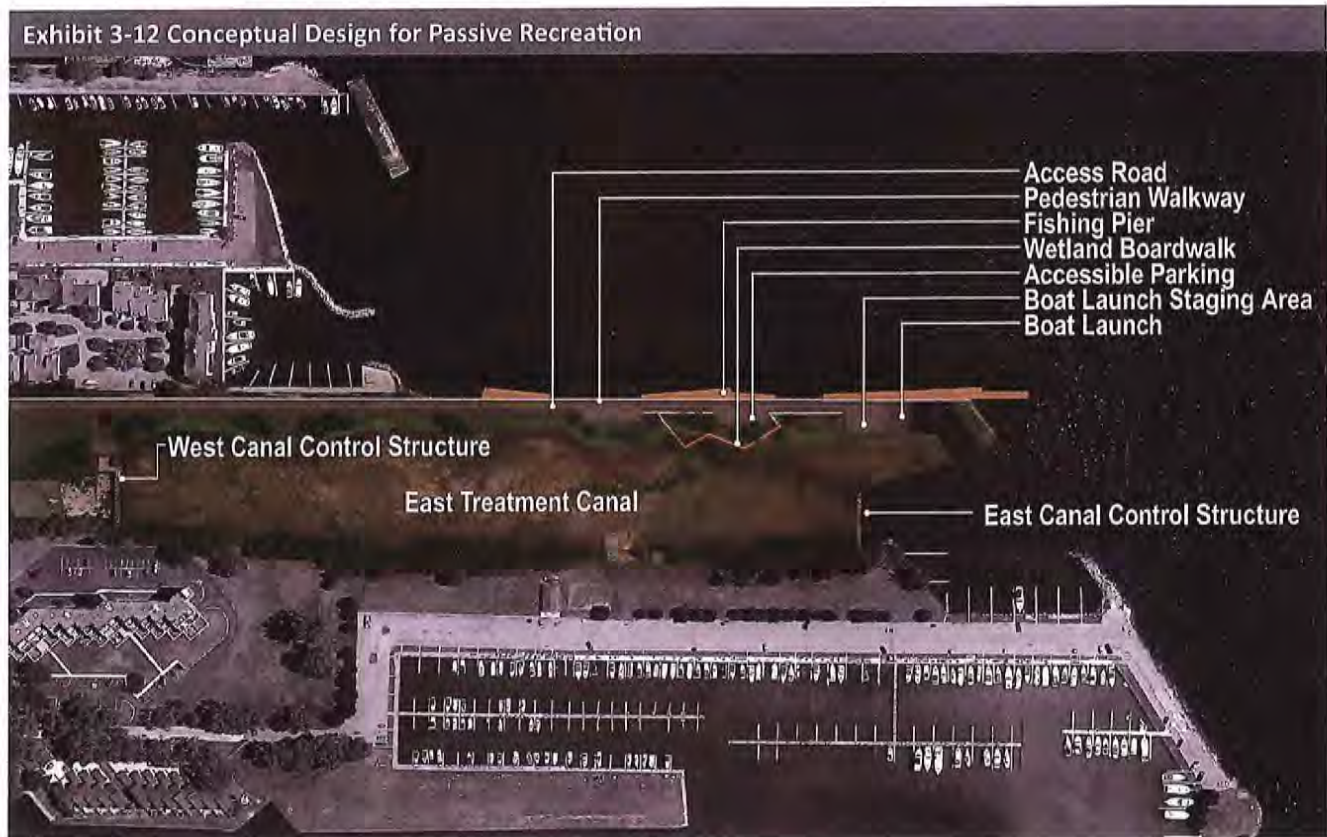
ing recurring operational cost and effort associated with dewatering any remaining lake water in the upgraded canal that is not required for flushing. The range of potential alternatives will be initially developed and evaluated by the project team based on input from MCPWO staff. The preferred alternatives will then be further reviewed, with MCPWO, and refined to a 30% design level incorporating stakeholder input and specific permitting agency requirements, as discussed in the following sections.

Cost Savings to MCPWO

Open Space Planning – Additional Features

The Chapaton Basin project site, referred to as 9 Mile Pier in the Nautical Mile Enhancements and Planning study completed in April 2018, offers one of the few opportunities for residents of St. Clair Shores to access the waterfront of Lake St. Clair. Serving as the southern bookend to the Nautical Mile along the waterfront, 9 Mile Pier is currently a mixture of turf lawn, trees, and views providing shoreline for recreational fishing and open space recreation for the local community. Identified in the Nautical Mile Master Plan led by MKSK, 9 Mile Pier is recommended to be enhanced for community access and recreation to reconnect the community with the lake.

While the Master Plan did not anticipate a reduction in land area as recommended by the East Treatment Canal and East Canal Control Structure, the remaining open land area still presents a great opportunity for use as a community open space resource and amenity. The existing boat launch is planned to be relocated to the east end of the pier providing access to the lake for boating and water recreation once the canal upgrade construction has been completed. Access to the boat launch and pier will be considered and planned during the preliminary and final design phases of upgrades to the Chapaton RTB Canal. Vehicular, bicycle, and pedestrian access will be integrated into the overall design strategy to ensure that 9 Mile Pier is accessible, safe, and sustainable for the community of St. Clair Shores. A north-south cross section through the pier could possibly include fishing piers or decks, a pedestrian sidewalk connecting parking and waterfront, a multiuse street for vehicles pulling boat trailers, bicycle access between Jefferson Avenue and the lake, accessible parking spaces, and landscape space for passive recreation. Exhibit 3-12 shows a conceptual image to illustrate some of the features discussed.



The following additional features can also be considered for incorporation into the canal upgrade design.

- Relocated boat access at end of pier (See Exhibit 3-13)
- Light House, Public Educational Signage or Billboard (See Exhibit 3-14)
- Share Bike or Scooter Coordination (Lime, Bird, Spin, etc.)
- Mooring Facility, Boat Tie Offs
- Security Fencing and Signs (See Exhibit 3-15)
- Sidewalk, green permeable pavers, parking
- Water Taxi
- Boardwalk (north side) (See Exhibit 3-16)
- Overlook
- Lighting and Light Poles

The degree to which these potential recreational features are desired by stakeholders and can fit within the proposed canal expansion technical design constraints, safety, and site security requirements will be evaluated in the preliminary design phase.

Community Stakeholder Engagement

The Chapaton RTB Canal Upgrades will be supported by a comprehensive community engagement strategy that seeks to learn from Nautical Mile residents, leaders and stakeholders, as well as the community of St. Clair Shores as a whole. With the approval of MCPWO, we propose an approach to target a diverse audience throughout the city to reach the broadest possible cross-section of public input. Project leadership will be comprised of a Working Group made up of MCPWO staff that will provide regular project guidance and inform our engagement with stakeholders and the broader community. We will work with this group to develop a list of stakeholders that will need to be organized as part of focus group meetings that will provide expert insight into the issues and opportunities present in the Nautical Mile and the Chapaton Basin pier.

The public side of our engagement strategy will be centered around bringing the conversation about the project out into the community. Engagement will go beyond conventional meetings to reach people on their own turf to make sure that participation is robust. We will use creative tools such as pier walks and interactive stations as well as attend community gatherings and events/festivals. Client, stakeholder, and public engagement will be coordinated during each phase of the project to ensure that we are learning, testing, and making



Exhibit 3-14 Lighthouse Feature



Exhibit 3-15 Security Fence



Exhibit 3-16 Boardwalk



decisions with the community at every step of the way. We will work with MCPWO to refine this engagement strategy in real-time throughout the course of the project to adapt to emerging circumstances, levels of participation, and depth of input.

For MCPWO consideration and input we have developed a draft engagement outline for review as part of this proposal.

Preliminary Design Engagement

- KickOff Event – Pier Walk with stakeholders and community to develop project awareness and gather initial input
- Stakeholder Meetings (2 each)
 - o Review existing conditions and best practice preference studies
 - o Review draft concepts/recommendations
- Public Event – Participate in local event (Food Truck Rally or Music on the Lake Concert Series) to share what we've heard and draft concepts

Final Design Engagement

- Stakeholder Meetings (2 each)
 - o Review revised preferred concept
 - o Review final plan
- Community Forum – Open House to present the final plan

Permitting

The existing Chapaton canal is considered a water of the State of Michigan and the MDEQ and the ACOE are responsible for protecting this resource under State and Federal laws and regulations.

The Chapaton canal project will require dredging, excavating, and grading; seawall work; shore protection work; and construction of a new gate structure and a new boat ramp. All this work will occur within an area where the “land meets the water” and requires permits from the MDEQ and the ACOE. In addition, this project will expand a wastewater treatment facility, the Chapaton RTB, and the improvements to and the discharges from it are regulated by the MDEQ on an ongoing basis.

Once the concepts for the project are developed, pre-application meetings will be requested and attended with the MDEQ and ACOE. In these meetings, the technical aspects of the project will be presented and

reviewed. The concerns and permit requirements of the MDEQ and ACOE will be heard and met.

A joint permit application, as shown in Exhibit 3-17, for the project will be filled out and submitted through MiWaters. This permit application will cover all aspects of the project that require review and approval by both the MDEQ and ACOE including wastewater, contaminated soil, wetland, floodplain, inland lake and stream, and Great Lakes bottomland issues.

Constructability Challenges

Keeping the existing RTB discharge in operation during construction is a significant constructability challenge that will need to be addressed in design. Temporary measures may be required since the existing canal is the current path for RTB discharge to the lake. A few initial concepts for further consideration that may be able to keep the basin operational while progressing the construction within the canal are to: 1) build a temporary bypass channel to the lake and/or 2) build the new east gate control structure in stages (half at a time) utilizing a cofferdam. Other options will be developed and reviewed and discussed with MCPWO for concurrence.

Final Design

The Preliminary Design/Basis of Design Phase will evaluate design options and establish the recommended design alternative and project components to be advanced in the Final Design phase. Upon approval of the Preliminary Design by MCPWO, bidding document submittals will be prepared and submitted to MCPWO at 60%, 90%, and 100% design levels to prepare the project for bidding. Specific items to be included with the 60%, 90%, and 100% Final Design submittals include:

- Bidding Documents consisting of detailed drawings, front end specifications, and technical specifications
- Engineer's opinion of probable construction cost matching the bid documents

Exhibit 3-17 Joint Permit Application



- Construction schedule showing the critical path and construction sequencing to maintain facility operation during construction
- Updates to the Basis of Design Report as necessary to reflect the additional detailed design development

In addition to preparing the formal design submittals, the following activities will be completed during the Final Design Phase:

- Conduct monthly status/coordination meetings with MCPWO staff
- Conduct formal design review workshops at the 60% and 90% design levels with MCPWO staff and project stakeholders, including City of St. Clair Shores representatives, to present the design, answer questions, and receive feedback
- Assistance to MCPWO in preparing permit submittals, including communicating and meeting with permit agencies to confirm requirements for securing permits in advance of construction contract award
- Preparation of necessary documents for the transfer of the canal from waters-of-the state to the District
- Development of a new operational protocol to incorporate the canal expansion and additional canal gate structure into the facility operation
- Assist with coordination between MCPWO and neighboring property owners on the proposed modifications to the existing boat ramp and open park area on the existing peninsula, including potential recreational enhancements to mitigate any adverse impacts
- Update of existing 3D BIM Model with the 100% final design

In addition to the major design considerations previously discussed, we have identified some additional innovative ideas that may be considered for the project design evaluations if desired by MCPWO.

Innovative Ideas

Flushing System Modifications

MCPWO is currently exploring options to improve water quality inside the basin as part of the Basin Segmentation and Disinfection Upgrade Study currently being performed by Wade Trim. As part of this project, a first flush compartment is being considered for construction inside the basin to optimize capture of the highest concentrations of pollutants. Installing a first flush

compartment inside the basin will allow for a modified dewatering sequence to the benefit of MCPWO. The first flush compartment with the highest concentration of pollutants will drain into the sewer first. Once the first flush compartment is empty, the volume remaining in the upgraded canal can then drain back into the basin's empty first flush compartment. The first flush compartment is smaller than the existing basin single compartment so the canal can begin draining back into the basin sooner than it is able under the current configuration. In addition, the empty first flush basin will be able to hold a large portion of the volume stored during the canal dewatering operation while it drains back into the sewer. Once the canal is empty, the volume inside the weir overflow compartment located inside the basin, which has now had time to settle and is cleaner water in relative terms, can then either be drained back into the sewer or incorporated into the existing flushing water system with new piping resulting in cost savings for MCPWO by not using lake water.

Bivalve Filtration

Bivalves are an aquatic mollusk that have a compressed body enclosed within a hinged shell, such as oysters, clams, mussels, and scallops as shown in Exhibit 3-18. Bivalves are living organisms that filter and clean the water at astonishing rates. Design options to incorporate such bivalves, specifically native Michigan clams, by utilizing weirs within the canal could be explored. By utilizing a concept similar to Alternative 4, which involves leaving standing water during non-event periods to create a viable habitat for these fresh water native Michigan clams. These clams could then not only clean the water using their internal filtration systems but also help support the immediate habitat within the newly upgraded canal area. If this habitat is designed near the East Canal Control Structure, the bubbler system to

Exhibit 3-18 Bivalves



prevent ice from accumulating around the gates could also be utilized as a type of filter backwash and aerator if installed within the claim sand substrate area.

Canal Maintenance Ramp

Once the canal upgrade is completed, there will be times that require maintenance activities down in the basin upgrade canal between the new East control structure and the West control structure. To help facilitate future maintenance work, the existing boat access can be repurposed into a new canal access ramp. This will create a safe access point to enter and allow for both large and small equipment to drive down into the retention canal area quickly and easily if needed for general clean up, rip rap adjustment, sheeting repairs, or other repairs.

East Gate Structure Pedestrian Bridge

A pedestrian bridge could be incorporated into the east gate structure design which is an option to increase community access and pedestrian traffic between the 9 Mile - Chapaton peninsula and the peninsula to the south.

V-Shaped Weir

Possible consideration of installation of a V-shaped weir can be considered in lieu of installing a gate structure. The V-shape is to provide sufficient weir length to avoid raising the hydraulic grade line. The advantage is that no large gates allow for passive control and minimized cost and maintenance requirements. The challenge is to set the weir height low enough to not impact upstream hydraulics and high enough to keep the lake water out, especially during the historical variation in lake levels. Small gates or pipes and valves could be incorporated to provide flushing water, if desired. Upon MCPWO request the Wade Trim Team could further investigate if a V-shaped weir wall to be installed near the easterly end of the canal is a feasible option.

BIDDING AND CONSTRUCTION

During the Construction Phase, Wade Trim will assist Macomb County through the tasks described below.

Pre-Bid Assistance

Wade Trim will assist the County in facilitating the pre-bid meeting and will prepare handouts and presentations for the meeting detailing the project scope of work as necessary. During the bidding phase, Wade



This image shows the existing boat access ramp which could be modified and utilized as a maintenance access ramp into the expanded portion of the RTB canal storage.

Trim will assist in addressing all bidder questions, issuing bulletins/addenda to the bidders up to the time when bids are received, and assisting MCPWO in reviewing the bids by evaluating the bids as requested and necessary to determine the responsible low bidder. Wade Trim will conduct a pre-award meeting with the apparent low bidder, if needed.

Pre-Construction Conference

Wade Trim will organize and facilitate the pre-construction conference including preparing and issuing the agenda and taking minutes. This conference will include appropriate County staff, the contractor, and regulatory agencies. Topics to be discussed include the contract documents, contractor schedule, and roles and responsibilities of each entity. Each entity will have the opportunity to address construction issues that may need coordination or further research to be sure the project construction phase gets off to an efficient start.

Progress Meetings

Monthly progress meetings will be facilitated by Wade Trim and participants will include appropriate Macomb County staff, contractors, utility companies, and regulatory agencies. Meeting topics will include the construction progress and schedule, status of engineering submittals and requests for information (RFIs), delivery of major equipment and materials, and any issues that must be addressed by the construction team. Wade Trim will prepare and issue meeting minutes to the attendees who will have the opportunity to request corrections or clarifications to the minutes before they are finalized for the record.

Perform Shop Drawing/O&M Manual Review

Wade Trim will review shop drawings, O&M manuals and other construction phase documents that require review by the Engineer. Formal responses to each will be prepared by Wade Trim and transmitted back to the contractor, with copies of each Engineer response provided to Macomb County. For particular documents requiring the review of the Engineer, Wade Trim will seek appropriate input from the County prior to returning the response to the contractor. Some responses may be better suited for County staff to lead the response, with only support from Wade Trim.

Construction Observation

Wade Trim will provide experienced resident construction staff that will monitor the work during construction activities. The Wade Trim staff will monitor the progress of the work and prepare an inspector daily report (IDR). The report will include contractor labor force, equipment on site and in use, quantity of work installed, photographs to document progress of the work, weather conditions, visitors to the site, and other relevant construction-related information. These reports will be prepared by our staff, reviewed by our project manager, and distributed to the team daily. The use of drone technologies can be utilized to allow for aerial views of construction observation and to document progress, which would be very beneficial on a site as large as this one.

Provide Pay Recommendations

Payment applications will be prepared and submitted by the contractor to Macomb County and the Engineer for review and comparison to actual progress of the work. Our construction team will review the payment application and request any changes from the contractor that are necessary to accurately reflect completed work. Once review of the payment application is complete and necessary revisions are made by the contractor, Wade Trim will prepare and submit the official Certificates of Payments to Macomb County for final review and processing.

Issue Clarifications

Wade Trim will respond to Requests for Information (RFI) from the contractor to clarify the design intent or to interpret the contract requirements and prepare formal responses for each to the contractor. As appropriate, Macomb County will be consulted on all RFI responses prior to the transmittal of the response to



Wade Trim construction inspectors will be on site to monitor construction activities and document their progress in an Inspector Daily Report (IDR).

the contractor and in some cases may decide to lead the response effort.

Furnish Consultation During Construction

The most important and valuable service Wade Trim can offer Macomb County during the construction phase is thoughtful monitoring of the progress and anticipation of issues before urgent needs or crises develop. Wade Trim staff experienced in basin rehabilitation construction projects will be assigned to this project.

Substantial Completion Observation

At the appropriate time, the contractor will request the project be certified as substantially complete. Wade Trim staff will evaluate the status of the work to verify the project has reached substantial completion per the requirements of the contract. This process will include verification that project equipment and processes were properly started-up, commissioned, tested and turned over to Macomb County. At that time and with Macomb County concurrence, Wade Trim will assemble the proper documentation and prepare a Substantial Completion Certificate for the Macomb County Public Works Office to issue.

Final Walk Through Observation

Prior to final completion, Wade Trim staff will prepare a “punch list” of items that do not conform to the contract documents. A final walk-through will be scheduled by Wade Trim and will include representatives from Macomb County and the contractor to verify project completion. Upon the County’s and the Engineer’s satisfaction, Wade Trim will prepare a Final Completion Certificate for the County to issue.

Prepare Record Drawings and Close-Out

Record drawings will be prepared for the Chapaton RTB Canal Upgrade project. As part of the project documentation, the contractor will be required to keep a “red line” set of markups to actively represent the work as installed. Wade Trim will meet with the contractor on a monthly basis at a minimum, to review the contractor’s “red line” set of markups. Our team will review the markups to verify accuracy with the Engineer’s records and the actual as-built conditions. This monthly meeting will facilitate more efficient preparation of the final set of record drawings.

Once the work is complete, the contractor will be required to submit the final as-built drawings and documents. Wade Trim will review the final as-built documents, recommend revisions as necessary, and ultimately adopt the as-built drawings as the final record documents for the project. Wade Trim will update the 3D BIM model to reflect construction as-built conditions.

This task will also include project close-out items such as reviewing project records to assure all construction issues have been addressed, reviewing final submittals by the contractor, preparing reconciling change orders and final pay certifications, and assisting with updating the Nexgen database with MCPWO assistance.

MANAGEMENT, PLANNING, AND ORGANIZATIONAL TOOLS

Team Collaboration

Our proposed management approach will be to present our technical evaluations and findings for discussion with MCPWO in a series of monthly meetings, with additional collaborative workshops conducted as necessary to review options and solicit input for key decisions as the design work progresses. Since there are a number of canal cross-section options and alternative configurations that could be employed to optimize the canal storage volume, each with varying degrees of permitting requirements, costs, and visual impact to the existing neighboring properties and existing peninsula recreational access, it is important to review the advantages and disadvantages of each of these potential options in a logical manner that initially reviews the entire range of alternatives available, and then narrows them down with an evaluation process that leads to an informed selected alternative. Wade Trim successfully



Wade Trim and its subconsultants utilize a collaborative work environment to deliver technically innovative solutions that our clients can stand behind.

uses this collaborative approach on all of our projects, and considers it a core value that guides our management approach.

We have successfully demonstrated this collaborative approach to MCPWO on recent projects for the Chapaton Basin Segmentation and Disinfection Project. The progress meeting/workshop topics were scheduled in advance, included our design project manager and appropriate design discipline leads as required for the specific workshop topic and provided a forum for interactions with the MCPWO’s engineering staff to review and discuss details of the technical development and design evaluations for informed collaborative selections and decisions. The various design evaluations and decisions were documented in a series of Technical Memorandums that were incorporated into the project reports and design files.

We intend to build on this success using a similar technical approach for the Chapaton Canal Expansion project led by the same design project manager and key discipline leads, while supplementing the design evaluations for the geotechnical investigations (NTH), hydraulic evaluations (ASI), and local community impacts (MKSK) with the additional experienced subconsultants on our project team.

Communication

Communication is the thread that ties a project together. Communication is crucial within the project team and with Macomb County and key stakeholders. It must be frequent and consistent. We believe in oral communication – meetings and phone calls where real discussion can occur. We supplement these discus-

sions with electronic communications. Interactions are documented so that a trail exists for all key decisions and interactions.

During the Basis of Design development and Design, monthly status meetings will be held. These meetings will be the major tools for tracking, communicating project progress, and keeping on top of critical issues. Meetings will be held at the County office or at the Chapaton Pump Station so different staff members can participate as needed. Macomb County operations staff will be brought into the design process to provide input on operational and maintenance needs as well as equipment preferences. John Arvai will provide agendas, meeting summaries, documentation on decisions made, and action/follow-up items for all progress meetings.

ProjectWise is a communication tool available to the County and our project team during design and construction. ProjectWise is an Internet-based document control software that allows multiple users to access project documents via a unique ID and password. Dur-

ing design, ProjectWise can be used to review and mark changes on drawings or to access progress meeting summaries. During construction, documents like shop drawings, RFIs, photos, design plans, addenda, and other project correspondence can be viewed, printed, edited, and tracked by all users. Wade Trim has used this tool on past projects with success. ProjectWise can be a valuable resource in today's world of information overload when it's easier to know where to retrieve the information than to store copies for yourself.

Advanced Technologies

A fully integrated BIM model will be used to generate contract drawings. We have already invested significant effort into developing canal upgrades depicted in Exhibit 3-19. The use of a BIM model provides the following benefits:

- Conceptualization of preliminary design alternatives
- Identification of conflicts
- Ability to identify constraints and safety concerns
- Accurate as-built documentation
- Efficient construction document preparation and quantity take offs



- Future integration with facilities management, program management, and asset management Systems

Wade Trim uses drone technology, as shown in Exhibit 3-20, to assist clients with asset and facilities management, high quality construction status photography and videography, and survey mapping from the preliminary planning through project completion phases. Drone services enhance project delivery through expedited workflow via real-time data collection that can be implemented not only into design, but also in record drawings to scale.

Our aerial drone feet provides high-level mapping, modeling, high-resolution photography, videography, inspection, and 4K thermal/optical imaging capabilities. Our nautical drone has built-in sonar and GPS that allows for open drain survey, bathymetry, and mapping.

Budget

Project controls are needed to maintain the budget. The Project Manager has direct access to daily comprehensive project status reports to assist with project control. Wade Trim uses the BST Management Information System software package that provides a powerful and flexible system to meet administrative and financial

requirements. The software package fully integrates Project Effort Control, Billing Control, Financial Control, and Payroll Systems. The history of each project's cost and effort is maintained on a current period of end-of-month, year-to-date, and project-to-date basis.

The schedule will be reviewed by John Arvai on a weekly basis with particular attention to meeting critical milestones. Corrective actions will be developed and implemented, if needed, to keep the project on schedule.

Technical Performance

Quality is not a process or a checklist but a culture and a mindset. It starts with our President, Andrew McCune, PE, and permeates our organization through constant emphasis and spot checking on projects to make sure we live the culture. Quality is reviewed at each team meeting and key decisions receive a review just like key calculations. Design concepts and parameters set strategic direction and the review of these is essential.

DELIVERABLES

The deliverables for the Preliminary Design, Final Design, and Construction Phases, include the following items:

Design Phase

- Preliminary Design Documents
 - o Alternative evaluation and recommendations
 - o Technical memorandum for selected alternative
 - o 30% construction drawings
 - o Outline of specifications
 - o Equipment data sheets
 - o Preliminary opinion of probable construction costs
 - o Preliminary construction sequencing and schedule
 - o Basis of Design Report
- Final Design Documents for the selected alternate
 - o 60%, 90%, 100% construction documents
 - o 60%, 90%, 100% specifications
 - o 60%, 90%, 100% design opinion of probable construction costs
 - o 60%, 90%, 100% construction sequencing and schedule
 - o Completed Permit Application(s) for MCPWO submission to permitting agencies
 - o Completed documents for MCPWO use to

Exhibit 3-20 Drone Technology



transfer of the canal from the waters of the state to the District

- An updated 3D BIM Model of the Existing Site
- An updated 3D BIM Model of the proposed Upgrades
- A complete pdf, AutoCAD and Microsoft Word set of construction documents, which include detailed drawings and specifications for the MCPWO to issue for bid on MITN

Construction Phase

During the Construction Phase, Wade Trim will assist Macomb County in delivering the following tasks:

- Facilitation of the Pre-Construction Conference Meeting including the agenda and meeting minutes
- Facilitation of Progress Meetings including agendas and meeting minutes
- Review of Shop Drawings, O&M Manuals and other engineering Submittals that require the Engineer's review including the preparation of formal responses to each
- Review and respond to RFI, Request for Substitutions and prepare formal responses to each
- Review and approval of Contractor's Payment Application and prepare Certificate of Payment for MCPWO approval and processing
- Coordination with MCPWO and the contractor and preparation of deficiency list and final punchlist
- Evaluation of status of Substantial and Final Completion and prepare certificates for each
- Preparation of final As-Built/Record Documents/ Final 3D BIM Model per Construction

4. Confined space entry will be provided by MCPWO for Wade Trim site inspections and investigation, if required
5. Wade Trim's participation in two community engagement events in the preliminary design and one event in the final design; three events total will be sufficient
6. Wade Trim's participation in four stakeholder – neighboring property meetings; two per phase will be sufficient
7. The construction drawings will be produced in BIM Revit

ASSUMPTIONS

In developing our proposal for the Chapaton RTB Canal Upgrades, Wade Trim has made the following assumptions listed below.

1. Existing information, models, records and data for the existing facility and area will be provided by MCPWO
2. The preliminary design for geotechnical includes design memorandums and not a formal geotechnical report; The formal report will be prepared during final design for use in the bidding documents
3. The construction phase scope of services will be developed after the design is complete

2019/2020 Lawn Maintenance RFQ Summary

A Request for Quotation (RFQ) was published on MITN for Lawn Maintenance at locations identified in Table 2. The RFQ was posted from January 7th, 2019 to February 5th, 2019 with Fifty-One (51) contractors downloading documents during the posting period. On February 5th there were three quotations received, which are summarized in Table 1.

The contractors were directed to provide pricing to perform lawn maintenance service from May 1st through October 31st for 2019 and 2020. The 2021 season will be an Owner's option based on performance and pricing,

The cost per cut, frequency of cut, season total for each site and each drainage district is illustrated in Table 3 and Table 4 for the 2019 and 2020 seasons.

The MCPWO recommends that the low bidder, Marino's Landscape be awarded this work. In addition, Marino's provided excellent service to each these Drainage Districts in 2018, they proved to be responsive to requests to address site specific items and flexible in their scheduling for high visibility sites.

Table 1

	Contractor	2019 Cost	2020 Cost
1	Marino's Landscape	\$28,725.00	30,232.00
2	Ultimate Lawn Service	\$31,320.00	31,320.00
3	Pro-Mo Lawn & Landscape	\$79,760.00	Not Provided

The total cost allocated to the respective drainage districts is summarized in Table 2. The contractor awarded this work would be required to execute a contract with each of the 10 drainage districts.

Table 2 – Drainage District Cost Summary

No	Drainage District	Drain Chapter	2018 Cost	2019 Cost	2020 Cost
1	MIDDD	20	\$7,880.00	\$8,200.00	\$8,567.00
2	8 ½ Mile Relief	20	\$8,181.00	\$8,100.00	\$8,532.00
3	Martin Sanitary Diversion	20	\$810.00	675.00	\$729.00
4	SEMCWDS	342	\$1,620.00	\$1,350.00	\$1,458.00
5	Clinton River Spillway	21	\$7,150.00	\$5,200.00	\$5,460.00
6	Roseville Consolidated	20	\$845.00	\$975.00	\$1,027.00
7	Bridgewood	4	\$390.00	\$390.00	\$416.00
8	Hildebrandt	4	\$1,755.00	\$1,885.00	\$1,989.00
9	Shanahan Drain	20	\$1,235.00	\$1,235.00	\$1,300.00
10	11 ½ Mile Relief	20	\$715.00	\$715.00	\$754.00
TOTAL			\$30,581.00	\$28,275.00	\$30,232.00

Marino's Landscape 2019 Cost Breakdown

Table 3 – 2019 Cost Summary

No.	Drainage District	Name/Location	Cut	Trim	Frequency	# of Cuts	2019 Cost Per Cut	Total Cost for 2019 Season
1	Clinton River Spillway	Clinton River Spillway	Yes	No	Twice a Month	13	\$400.00	\$5,200.00
2	Roseville Consolidated	Roseville Consolidated	Yes	No	Twice a Month	13	\$75.00	\$975.00
3	Bridgewood	Bridgewood	Yes	Yes	Twice a Month	13	\$30.00	\$390.00
4	Hildebrandt	Hildebrandt	Yes	Yes	Twice a Month	13	\$145.00	\$1,885.00
5	MIDDD	Sewage Flow Meter Site CH-S-1	Yes	Yes	Twice a Month	13	\$27.00	\$351.00
6	MIDDD	Sewage Flow Meter Site CH-S-2	Yes	No	Twice a Month	13	\$27.00	\$351.00
7	Shanahan Drain	Shanahan Drain Property	Yes	No	Twice a Month	13	\$95.00	\$1,235.00
8	MIDDD	Bio Filter	Yes	Yes	Once a Week	27	\$45.00	\$1,215.00
9	MIDDD	Sewage Meter Facility SY-S-3	Yes	Yes	Twice a Month	13	\$27.00	\$351.00
10	MIDDD	Sewage Meter Facility ST-S-3	Yes	Yes	Twice a Month	13	\$27.00	\$351.00
11	MIDDD	North Gratiot Pump Station	Yes	Yes	Once a Week	27	\$45.00	\$1,215.00
12	MIDDD	Clintondale Pump Station	Yes	Yes	Once a Week	27	\$45.00	\$1,215.00
13	MIDDD	Sewage Flow Meter Site NH-S-1	Yes	Yes	Twice a Month	13	\$27.00	\$351.00
14	MIDDD	ARV Vaults – 23 locations	Yes	Yes	Once a Month	7	\$400.00	\$2,800.00
15	11 ½ Mile Relief	11 ½ Mile Relief Property	Yes	Yes	Twice a Month	13	\$55.00	\$715.00
16	SEMCWDS	Bon Huer Pump Station	Yes	Yes	Once a Week	27	\$25.00	\$675.00
17	SEMCWDS	Violet Pump Station	Yes	Yes	Once a Week	27	\$25.00	\$675.00
18	8 ½ Mile Relief	Chapaton Retention Treatment Basin	Yes	Yes	Once a Week	27	\$275.00	\$7,425.00
19	8 ½ Mile Relief	Vacant Lot on Gaukler Street	Yes	Yes	Once a Week	27	\$25.00	\$675.00
20	Martin Sanitary Diversion	Martin Retention Treatment Basin	Yes	Yes	Once a Week	27	\$25.00	\$675.00

Marino's Landscape 2020 Cost Breakdown

Table 4 – 2020 Cost Summary

No.	Drainage District	Name/Location	Cut	Trim	Frequency	# of Cuts	2020 Cost Per Cut	Total Cost for 2020 Season
1	Clinton River Spillway	Clinton River Spillway	Yes	No	Twice a Month	13	\$420.00	\$5,460.00
2	Roseville Consolidated	Roseville Consolidated	Yes	No	Twice a Month	13	\$79.00	\$1,027.00
3	Bridgewood	Bridgewood	Yes	Yes	Twice a Month	13	\$32.00	\$416.00
4	Hildebrandt	Hildebrandt	Yes	Yes	Twice a Month	13	\$153.00	\$1,989.00
5	MIDDD	Sewage Flow Meter Site CH-S-1	Yes	Yes	Twice a Month	13	\$28.00	\$364.00
6	MIDDD	Sewage Flow Meter Site CH-S-2	Yes	No	Twice a Month	13	\$28.00	\$364.00
7	Shanahan Drain	Shanahan Drain Property	Yes	No	Twice a Month	13	\$100.00	\$1,300.00
8	MIDDD	Bio Filter	Yes	Yes	Once a Week	27	\$47.00	\$1,269.00
9	MIDDD	Sewage Meter Facility SY-S-3	Yes	Yes	Twice a Month	13	\$28.00	\$364.00
10	MIDDD	Sewage Meter Facility ST-S-3	Yes	Yes	Twice a Month	13	\$28.00	\$364.00
11	MIDDD	North Gratiot Pump Station	Yes	Yes	Once a Week	27	\$47.00	\$1,269.00
12	MIDDD	Clintondale Pump Station	Yes	Yes	Once a Week	27	\$47.00	\$1,269.00
13	MIDDD	Sewage Flow Meter Site NH-S-1	Yes	Yes	Twice a Month	13	\$28.00	\$364.00
14	MIDDD	ARV Vaults – 23 locations	Yes	Yes	Once a Month	7	\$420.00	\$2,940.00
15	11 ½ Mile Relief	11 ½ Mile Relief Property	Yes	Yes	Twice a Month	13	\$58.00	\$754.00
16	SEMCWDS	Bon Huer Pump Station	Yes	Yes	Once a Week	27	\$27.00	\$729.00
17	SEMCWDS	Violet Pump Station	Yes	Yes	Once a Week	27	\$27.00	\$729.00
18	8 ½ Mile Relief	Chapaton Retention Treatment Basin	Yes	Yes	Once a Week	27	\$289.00	\$7,803.00
19	8 ½ Mile Relief	Vacant Lot on Gaukler Street	Yes	Yes	Once a Week	27	\$27.00	\$729.00
20	Martin Sanitary Diversion	Martin Retention Treatment Basin	Yes	Yes	Once a Week	27	\$27.00	\$729.00

EIGHT AND ONE-HALF MILE RELIEF DRAIN 1/15/19 2/11/19

Funding Source	Apportionment	Manager	Vendor	Amount	Invoice Detail	Project Summary	Project Balance
8 1/2 Mile Relief	Chapter 20 State of MI - 16.04% County of Macomb - 2.25% Dept. of Roads - 2.25% Eastpointe - 54.33% St. Clair Shores - 25.13%	Astorino	Cintas Fire	\$ 1,831.85	Invoice #0D26564836 - 01.07.19	Emergency Equipment - Chapaton PS	
		Astorino	Colville Electric Co., LLC	\$ 677.13	Invoice #WO18-1024 - 12/25/18	TRC Submersible Pump Electrical Service	
		Astorino	Consumers Energy	\$ 773.44	Monthly Gas - 12.12.18 - 01.11.19	Chapaton W. Building	
		Astorino	Consumers Energy	\$ 775.70	Monthly Gas - 12.21.18 - 01.21.19		
		Astorino	Consumers Energy	\$ 1,046.89	Monthly Gas - 11/22/18 - 12/20/18	Chapaton East	
		Astorino	DE-CAL, Inc.	\$ 1,471.00	Invoice #WO18250321 - 12/21/18	Repair Heater Units - Chapaton E.	
		Astorino	Doetsch Environmental Services	\$ 1,024.39	Invoice #70521 - 12/31/18	Wet Well Cleaning	
		Astorino	DTE Energy	\$ 8,123.93	Monthly Electric - 12.07.18 - 01.08.19		
		Astorino	DTN, LLC	\$ 549.84	Invoice #5479508 - 01.18.19	Storm Sentry Subscription	
		Astorino	Fire Equipment Company, Inc.	\$ 5,870.00	Invoice #110550 - 01.08.19	Replacement Fire Panel/Devices	
		Astorino	Fishbeck, Thompson, Carr & Huber, Inc.	\$ 941.50	Invoice #380038 - 01.07.19	SRF Funding Project Plan	\$ 24,058.50
		Astorino	Fishbeck, Thompson, Carr & Huber, Inc.	\$ 2,062.00	Engineering Services - ending 12.28.19	As-Needed Assistance	
		Astorino	HESCO	\$ 10,800.00	Invoice #380086 - 01.07.19	Laser Flow Meters Installation	
		Astorino	Home Depot	\$ 522.92	Invoice #6221914 - 01.07.19	Replacement tools and ladder	
		Astorino	Michigan Door Systems	\$ 500.00	Invoice #63406 - 11/26/18	Repair Entry Door/Hinge - Chapaton W	
		Astorino	Sprint	\$ 535.03	Invoice #299514228-188	Monthly Cell - 12.04.18 - 01.03.19	
		Astorino	State of Michigan	\$ 6,000.00	Invoice #761-10390822 - 12/1/18	NPDES Annual Permit Fee	
		Astorino	Motor City Electric Technologies, Inc.	\$ 1,068.00	Invoice #92238 - 11/28/18	Add Milk River Sites to SCADA	
		Astorino	Northern Electrical Testing, Inc.	\$ 14,009.46	Invoice #18376 - 12/13/18	SWP #1 - Transformer Repair/Spare - Emergency Fire Repair - Final	
		Astorino	Novalyx Corporation	\$ 1,101.89	Invoice #53960 - 10/8/18	Rain Gauge, Heater Cable, Signal Cable	
		Astorino	PVS Nohwood Chemicals, Inc.	\$ 5,229.84	Invoice #620494 - 12/11/18	Hypochlorite Solution used in Disinfection Process as required by NPDES Permit	
		Astorino	St. Clair Shores Treasurer	\$ 7,618.66	Monthly Water - 9/15/18 - 12/13/18	Chapaton RTB	
		Astorino	Teledyne Instruments, Inc.	\$ 7,002.00	Invoice #S020301234 - 01.14.19	ISCO Sampler	
		Astorino	Wade Trim	\$ 29,508.75	Invoice #M2013462 - 1/7/19	Chapaton RT Segmentation & Disinfection Study	\$ 17,948.75
			Total	\$ 109,044.22			



Location : CINTAS FIRE PROTECTION

*** INVOICE CUSTOMER COPY ***

Invoice # : 0D26564836 Inv Date : 1/07/2019
Customer : 440 Loc : D26
Type . . : CHG-S Route . : 01
PO Number : Acct # : 00440
WO Number : Acct Zip : 48080
Service Visit : 5558462

Remit to:
CINTAS FIRE 636525
P.O. BOX 636525
CINCINNATI, OH 452636525
(248)817-3800

Bill to:
MACOMB COUNTY / CHAPATON
23001 E 9 MILE RD
MACOMB COUNTY PUBLIC WORK
SAINT CLAIR SHORES, MI 48080

Serviced:
MACOMB COUNTY / CHAPATON
23001 E 9 MILE RD
MACOMB COUNTY PUBLIC WORK
SAINT CLAIR SHORES, MI 48080

Table with 5 columns: Item, Qty, Description, Unit Price, Net Amount Tx. Rows include items like BATTERY, BATTERY LEADS, LAMP, INSTALLATION, CABINET, RECHARGE, CONTINUITY TEST, and O RING ASSEMBLY.

THE GOODS AND/OR SERVICES PROVIDED BY CINTAS HAVE BEEN OR WILL BE PROVIDED EXPLICITLY SUBJECT TO CINTAS'S FIRE PROTECTION SERVICES GENERAL TERMS AND CONDITIONS ("THE TERMS"), A COMPLETE COPY OF WHICH HAS BEEN PROVIDED TO YOU, AND ADDITIONAL COPIES OF WHICH ARE AVAILABLE FROM YOUR CINTAS REPRESENTATIVE OR ONLINE AT CINTAS.COM/FIRECONTRACT. CERTAIN EXCERPTS OF THE TERMS ARE ALSO PRINTED ON THE BACK OF THIS PAGE. BY SIGNING THIS DOCUMENT AND/OR ACCEPTING THE GOODS AND/OR SERVICES PROVIDED, YOU (1) ACKNOWLEDGE THAT YOU HAVE RECEIVED, READ, AND UNDERSTAND THE TERMS IN THEIR ENTIRETY, (2) AGREE TO BE BOUND BY THE TERMS, (3) REPRESENT AND WARRANT THAT YOU HAVE THE AUTHORITY TO ENTER INTO THIS AGREEMENT, AND (4) ACKNOWLEDGE THAT ALL WORK HAS BEEN COMPLETED.



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SAINT CLAIR SHORES, MI 48080

Table with 5 columns: Item, Qty, Description, Unit Price, Net Amount Tx. Rows include items like FLAG SEAL/TAMPER INDICATOR, VERIFICATION SVC COLLAR, HYDROTEST, CO2 PORTABLE, FIRE EXTINGUISHER INSPECTION, etc.

PLEASE REMIT PAYMENT FROM THIS INVOICE. WE ACCEPT

THE GOODS AND/OR SERVICES PROVIDED BY CINTAS HAVE BEEN OR WILL BE PROVIDED EXPLICITLY SUBJECT TO CINTAS'S FIRE PROTECTION SERVICES GENERAL TERMS AND CONDITIONS ("THE TERMS"), A COMPLETE COPY OF WHICH HAS BEEN PROVIDED TO YOU, AND ADDITIONAL COPIES OF WHICH ARE AVAILABLE FROM YOUR CINTAS REPRESENTATIVE OR ONLINE AT CINTAS.COM/FIRECONTRACT.



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P.O. BOX 636525
CINCINNATI, OH 452636525
(248)817-3800

Bill to:
MACOMB COUNTY / CHAPATON
23001 E 9 MILE RD
MACOMB COUNTY PUBLIC WORK
SAINT CLAIR SHORES, MI 48080

Serviced:
MACOMB COUNTY / CHAPATON
23001 E 9 MILE RD
MACOMB COUNTY PUBLIC WORK
SAINT CLAIR SHORES, MI 48080

Table with 4 columns: Item, Qty, Description, Unit Price, Net Amount Tx. Description text: CREDIT CARDS AND CHECK BY PHONE, IF YOU HAVE A QUESTION REGARDING BILLING PLEASE CONTACT 248-817-3800, IF YOU WOULD LIKE TO MAKE A PAYMENT PLEASE CONTACT KRISTINE AT 570-891-0419.

THE GOODS AND/OR SERVICES PROVIDED BY CINTAS HAVE BEEN OR WILL BE PROVIDED EXPLICITLY SUBJECT TO CINTAS'S FIRE PROTECTION SERVICES GENERAL TERMS AND CONDITIONS ("THE TERMS"), A COMPLETE COPY OF WHICH HAS BEEN PROVIDED TO YOU, AND ADDITIONAL COPIES OF WHICH ARE AVAILABLE FROM YOUR CINTAS REPRESENTATIVE OR ONLINE AT CINTAS.COM/FIRECONTRACT. CERTAIN EXCERPTS OF THE TERMS ARE ALSO PRINTED ON THE BACK OF THIS PAGE. BY SIGNING THIS DOCUMENT AND/OR ACCEPTING THE GOODS AND/OR SERVICES PROVIDED, YOU (1) ACKNOWLEDGE THAT YOU HAVE RECEIVED, READ, AND UNDERSTAND THE TERMS IN THEIR ENTIRETY, (2) AGREE TO BE BOUND BY THE TERMS, (3) REPRESENT AND WARRANT THAT YOU HAVE THE AUTHORITY TO ENTER INTO THIS AGREEMENT, AND (4) ACKNOWLEDGE THAT ALL WORK HAS BEEN COMPLETED.

Colville Electric Co., LLC

15210 Toepfer Dr.
Eastpointe, MI 48021

Invoice

Invoice #	WO18-1024
Due Date	Date
1/24/2019	12/25/2018

Bill To
Macomb County DPW 23001 Nine Mile Rd. St. Clair Shores, MI 48080

Job Location

P.O. No.	Terms	Tech
	Net 30	

Date	Description	Quantity	Rate	Amount
11/5/2018	Installed feed for submersible sample pump.			
	Grounding Pigtail, solid	1	0.7142	0.71
	3/4" Kellum Grip	1	17.00	17.00
	Labor(@\$60/hr):ND	3.25	60.00	195.00
	Labor(@\$80/hr):JH	3.25	80.00	260.00
	3/4" 90* Explosion Proof Box	1	42.24	42.24
	3/4" Meyers Hub	4	8.24	32.96
	3/4' LB Malleable Iron Conduit Body	1	8.9247	8.92
	3/4' RMC Conduit	10	2.8329	28.33
	3/4' RMC One Hole Strap	4	0.4474	1.79
	4' Square Box, 2-1/8' Deep	2	1.844	3.69
	4' Sq Blank	2	0.7646	1.53
	Service Call Fee	1	75.00	75.00
	12 THHN CU Black	10	0.2489	2.49
	12 THHN CU Blue	10	0.2489	2.49
	12 THHN CU Green	10	0.2489	2.49
	12 THHN CU Red	10	0.2489	2.49

I apologize for the delay on this invoice.	Total	\$677.13
--	--------------	----------

*Past Due Invoices Are Subject To 1.5% Per Month Finance Charge.
If you have any questions, please call 586.774.9110*

Account: **1000 0005 7313**



Questions:
Visit: ConsumersEnergy.com
Call us: **800-805-0490**

Amount Due: **\$773.44**
Please pay by: **February 07, 2019**



**CHAPTON PUMPING STATION
MACOMB CO DRAIN COMM
21777 DUNHAM RD
CLINTON TOWNSHIP MI 48036-1005**



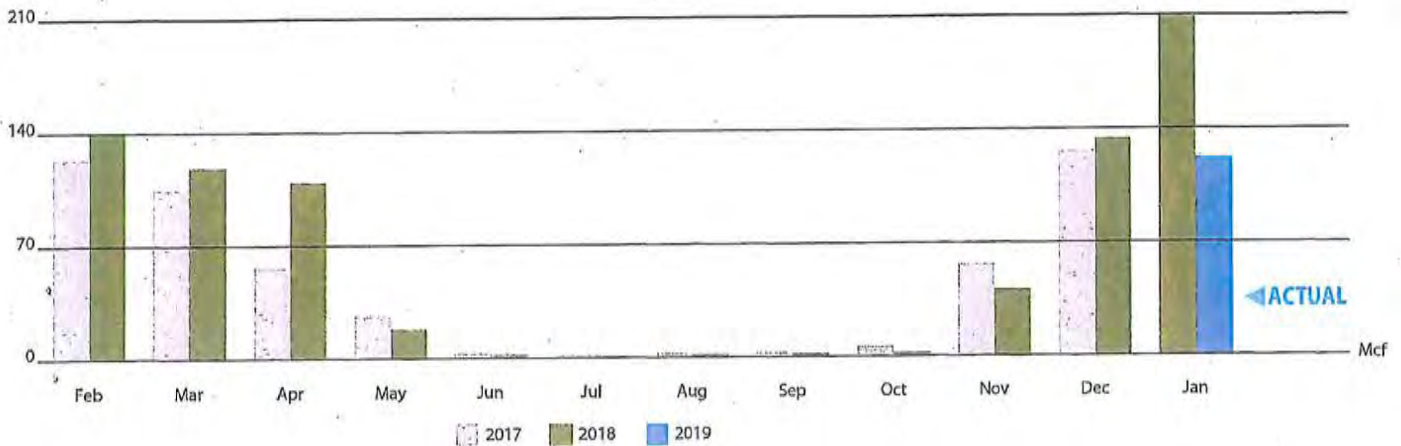
▶ **Thank You** - We received your last payment of **\$720.65** on **January 08, 2019**

▶ **Service Address:**
23001 E 9 MILE RD
SAINT CLAIR SHORES MI
48080-1576

January Energy Bill

Service dates: **December 12, 2018 - January 11, 2019 (31 days)**

Total Natural Gas Use (Mcf - thousand cubic feet)



January Natural Gas Use
122.2 Mcf
January 2018 use: 210 Mcf

Cost per day:
\$24.95

Mcf per day:
3.942

Prior 12 months of gas use:
699 Mcf

STAY SAFE: Call 9-1-1 and 800-477-5050. We'll respond day or night.



Downed power lines.
Stay 25 feet away. Call from a safe location.



If you smell natural gas.
If the "rotten egg" odor of gas is apparent, call from a safe location.



Save Energy and Money This Winter

We all know just how unpredictable Michigan weather can be. Temperature swings can impact your monthly bill. Manage your energy use with energy saving tips and rebates.

Did You Know? Higher energy bills may be caused by extensive cold snaps, expanded shifts or a larger facility.

Learn more at
www.ConsumersEnergy.com/startsaving



Need to talk to us? Visit ConsumersEnergy.com
or call **800-805-0490**
Hearing/speech impaired: Call 7-1-1

Service Address:
23001 E 9 MILE RD; SAINT CLAIR SHORES
MI 48080-1576
Account: **1000 0005 7313**

Account Information

Bill Month: January
Service dates: 12/12/2018 - 01/11/2019
Days Billed: 31
Portion: 12 01/19

Rate Information

Gas Gen Serv Rate GS-2 - Com
Rate: 262

Meter Information

Your next scheduled meter read
date is on or around 02/14/2019

Gas Service:

AMR Meter
Meter Number: 96483303
POD Number: 0000003537725
Beginning Read Date: 12-12
Ending Read Date: 01-11
Beginning Read: 99621
Ending Read: 831 (Actual)
Differential: 1210
Constant: 0.1
Correction factor: 1.01028
Usage: 122.2 Mcf

Total Metered Energy Use: 122.2 Mcf

January Energy Bill

Invoice: 205700829233

Account Summary

Last Month's Account Balance	\$720.65
Payment on January 08, 2019	<u>\$720.65-</u>
Balance Forward	\$0.00

Payments applied after Jan 15, 2019 are not included.

Natural Gas Charges

Customer Charge		\$85.40
Gas Distribution	122.2@ 1.951700	\$238.50
Tax Reform Credit B	122.2@ 0.099800-	\$12.20-
Energy Efficiency	122.2@ 0.349600	\$42.72
IRM Credit B		\$0.86-
Gas Cost Recovery	122.2@ 3.436000	<u>\$419.88</u>
Total Natural Gas		\$773.44

Total Energy Charges

\$773.44

Amount Due: **\$773.44**
by February 07, 2019

If you pay after the due date, a 2% late payment charge
will be added to your next bill.

Please make any inquiry or complaint about this bill before the due date listed on the front.
Visit ConsumersEnergy.com/aboutmybill for details about the above charges.

H 000000000000 1 502 0000 04422000000 872750000001 I

Enclosed:
Please pay by: February 07, 2019
Amount Due: \$773.44

PAYMENT CENTER
PO BOX 740309
CINCINNATI OH 45274-0309

Service Address:
MACOMB CO DRAIN COMM
23001 E 9 MILE RD
SAINT CLAIR SHORES MI 48080-1576



Account: 1000 0005 7313

You can pay your bill by mail, by phone or online
58 See reverse side for more information

Fold, detach and mail this portion with your check made payable to Consumers Energy. Please write your account number on your check.

Account: **1000 0754 2523**



Questions:
Visit: ConsumersEnergy.com
Call us: **800-805-0490**

Amount Due: \$775.70
Please pay by: **February 15, 2019**



**ATTN PUBLIC WORKS
MACOMB COUNTY
21777 DUNHAM RD
CLINTON TOWNSHIP MI 48036-1005**



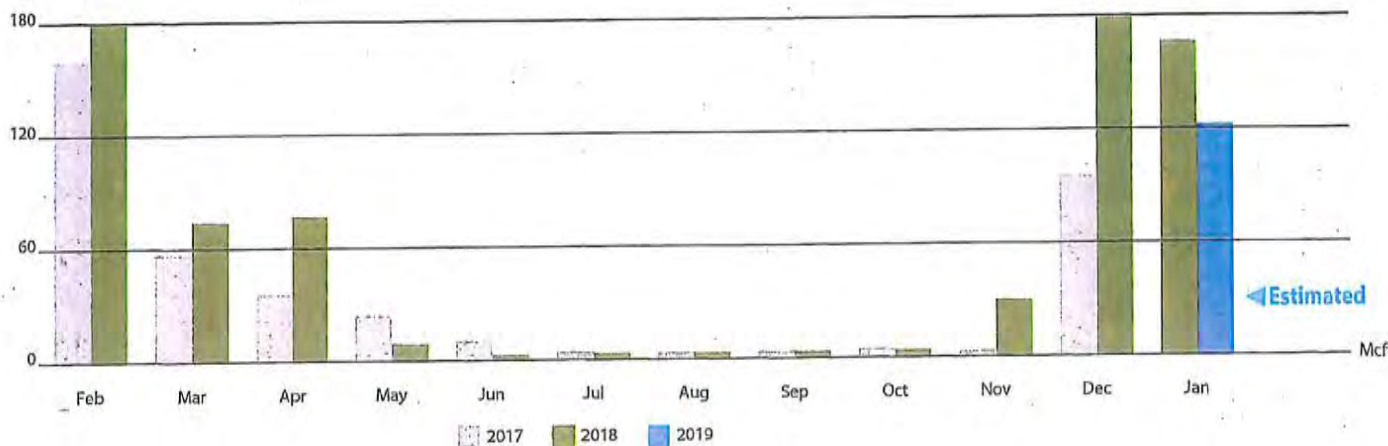
▶ **Thank You** - We received your last payment of **\$1,046.89** on **January 10, 2019**

▶ **Service Address:**
23301 E 9 MILE RD
SAINT CLAIR SHORES MI
48080-0000

January Energy Bill

Service dates: December 21, 2018 - January 21, 2019 (32 days)

Total Natural Gas Use (Mcf - thousand cubic feet)



January Natural Gas Use
122.6 Mcf
January 2018 use: 166 Mcf

Cost per day:
\$24.24

Mcf per day:
3.831

Prior 12 months of gas use:
690 Mcf

STAY SAFE: Call 9-1-1 and 800-477-5050. We'll respond day or night.



Downed power lines.
Stay 25 feet away. Call from a safe location.



If you smell natural gas.
If the "rotten egg" odor of gas is apparent, call from a safe location.



Save Energy and Money This Winter

We all know just how unpredictable Michigan weather can be. Temperature swings can impact your monthly bill. Manage your energy use with energy saving tips and rebates.

Did You Know? Higher energy bills may be caused by extensive cold snaps, expanded shifts or a larger facility.

Learn more at
www.ConsumersEnergy.com/startsaving

Account: **1000 0754 2523**



Questions:
Visit: ConsumersEnergy.com
Call us: **800-805-0490**

Amount Due: **\$1,046.89**
Please pay by: **January 17, 2019**

**ATTN PUBLIC WORKS
MACOMB COUNTY
21777 DUNHAM RD
CLINTON TOWNSHIP MI 48036-1005**



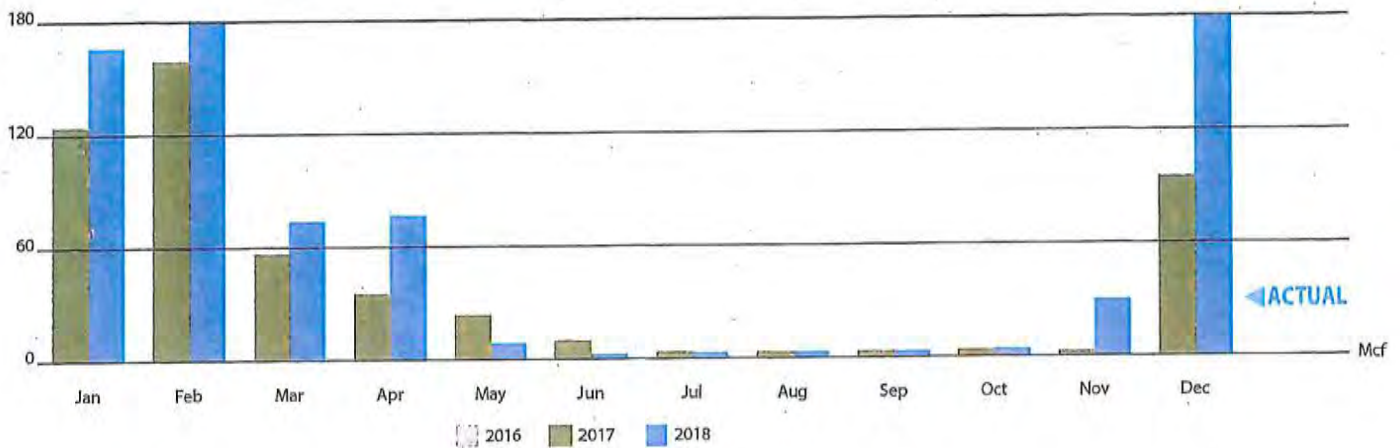
▶ **Thank You** - We received your last payment of **\$236.41** on **December 13, 2018**

▶ **Service Address:**
23301 E 9 MILE RD
SAINT CLAIR SHORES MI
48080-0000

December Energy Bill

Service dates: **November 22, 2018 - December 20, 2018 (29 days)**

Total Natural Gas Use (Mcf - thousand cubic feet)



December Natural Gas Use
179.4 Mcf
December 2017 use: 95 Mcf

Cost per day:
\$36.10

Mcf per day:
6.186

Prior 12 months of gas use:
734 Mcf

STAY SAFE: Call 9-1-1 and 800-477-5050.
We'll respond day or night.



Downed power lines.
Stay 25 feet away. Call from a safe location.



If you smell natural gas.
If the "rotten egg" odor of gas is apparent, call from a safe location.



Explore Energy Efficiency Solutions for Your Business

Discover the many ways your business can save, or tell us a little about your business to find the solutions best suited to you.

Get started
www.ConsumersEnergy.com/startsaving

07000000



Need to talk to us? Visit ConsumersEnergy.com
or call 800-805-0490
Hearing/speech impaired: Call 7-1-1

Service Address:
23301 E 9 MILE RD; SAINT CLAIR SHORES
MI 48080-0000
Account: **1000 0754 2523**

Account Information

Bill Month: December
Service dates: 11/22/2018 - 12/20/2018
Days Billed: 29
Portion: 18 12/18

Rate Information

Gas Gen Serv Rate GS-2 - Com
Rate: 262

Meter Information

Your next scheduled meter read
date is on or around 01/22/2019

Gas Service:

Standard Meter
Meter Number: 40121407
POD Number: 0000000435095
Beginning Read Date: 11-22
Ending Read Date: 12-20
Beginning Read: 7535
Ending Read: 9329 (Actual)
Differential: 1794
Constant: 0.1
Correction factor: 1.00000
Usage: 179.4 Mcf

Total Metered Energy Use: 179.4 Mcf

December Energy Bill

Invoice: 206433855369

Account Summary

Last Month's Account Balance	\$236.41
Payment on December 13, 2018	\$236.41-
Balance Forward	\$0.00

Payments applied after Dec 21, 2018 are not included.

Natural Gas Charges

Customer Charge		\$85.40
Gas Distribution	179.4@ 1.951700	\$350.13
Tax Reform Credit B	123.8@ 0.099800-	\$12.36-
Energy Efficiency	179.4@ 0.333100	\$59.76
IRM Credit B		\$0.86-
Gas Cost Recovery	179.4@ 3.148400	\$564.82

Total Natural Gas \$1,046.89

Total Energy Charges \$1,046.89

Amount Due: \$1,046.89
by January 17, 2019

If you pay after the due date, a 2% late payment charge
will be added to your next bill.

Please make any inquiry or complaint about this bill before the due date listed on the front.
Visit ConsumersEnergy.com/aboutmybill for details about the above charges.

H 000000000000 2 9502 0000 9595104689500000000000 22524523 I

Enclosed: **\$1,046.89**

Please pay by: **January 17, 2019**

PAYMENT CENTER
PO BOX 740309
CINCINNATI OH 45274-0309

Service Address:
MACOMB COUNTY
23301 E 9 MILE RD
SAINT CLAIR SHORES MI 48080-0000

Account: 1000 0754 2523

You can pay your bill by mail, by phone or online
See reverse side for more information



Fold, detach and mail this portion with your check made payable to Consumers Energy. Please write your account number on your check.



DE-CAL, Inc.
 24659 Schoenherr Rd.
 Warren, MI 48089-4775
 Service Phone: 586-619-0281
 Service Fax: 586-486-5242

Service Invoice

Invoice #: WO18250321

Date: 12/21/2018

Billed To: Macomb County Chapaton
 23001 E. 9 Mile Rd.
 St. Clair Shores MI 48080

Location: Macomb Chapaton Pumping
 23001 E. 9 Mile Rd.
 St. Clair Shores MI 48080

Attn: Accounts Payable

Client PO#:	Employee: Cliff Wilkerson	Due Terms: 30DY
--------------------	----------------------------------	------------------------

Assembly#	Part#	Description	Quantity	Price	Ext Price	Sales Tax
		See Attached	1.0000	1,471.000000	1,471.00	N

Notes:

See work order for details

De-Cal Service Group is a division of De-Cal, Inc.

Please Make Checks Payable to: De-Cal, Inc.

Thank you for your prompt payment!

Amount Due: \$ 1,471.00

Service Report

Service Report No : 925-18-032-1



Date: November 09, 2018

Client P.O. #: N/A

HVAC Service

Further Work Required

Site:

Macomb Chapaton Pumping
23001 E. 9 Mile Rd., St. Clair Shores , MI ,
48080

Client:

Macomb County Chaption
23001 E. 9 Mile Rd., St. Clair Shores , MI ,
48080

Reason for Call:

track down parts for GUH#1, to complete repairs to get unit running

Description of Service:

after replacing comb. mtr. found bad pressure switch and ignitor, ordered parts thru B-Y

Technician Work

Name	Date	Reg. hrs	Prem. hrs
Cliff Wilkerson	Nov 9, 2018	2	0

Service Report

Service Report No : 925-18-032-2



Date: December 04, 2018

Client P.O. #: N/A

HVAC Service

Further Work Required

Site:

Macomb Chapaton Pumping
23001 E. 9 Mile Rd., St. Clair Shores , MI ,
48080

Client:

Macomb County Chaption
23001 E. 9 Mile Rd., St. Clair Shores , MI ,
48080

Reason for Call:

track down parts for GUH#1, to complete repairs to get unit running

Description of Service:

picked up parts from B-Y, replaced pressure switch and igniter, started up unit still no pressure switch closing double checked everything found comb. mtr. had wrong rotation, straight from factory, went back to B-Y with pictures to show that factory sent wrong rotation on mtr, ordered right mtr. waiting for mtr to come in

Technician Work

Name	Date	Reg. hrs	Prem. hrs
Cliff Wilkerson	Dec 4, 2018	5	0

Service Report

Service Report No : 925-18-032-3



Date: December 12, 2018

Client P.O. #: N/A

HVAC Service

Ready to Invoice/Work Complete

Site:

Macomb Chapaton Pumping
23001 E. 9 Mile Rd., St. Clair Shores , MI ,
48080

Client:

Macomb County Chaption
23001 E. 9 Mile Rd., St. Clair Shores , MI ,
48080

Reason for Call:

track down parts for GUH#1, to complete repairs to get unit running

Description of Service:

picked up correct comb. mtr. from B-Y, removed wrong mtr. from unit, installed correct comb. mtr., started unit, pressure switch closed properly, ignited properly, unit cycled properly thru T-stat, returned incorrect mtr. back to B-Y

Technician Work

Name	Date	Reg. hrs	Prem. hrs
Cliff Wilkerson	Dec 12, 2018	4	0

DOETSCH

ENVIRONMENTAL SERVICES

21221 Mullin Ave. Warren, MI 48089
 Phone: 586-755-2090 Fax: 586-755-2099
 www.doetschenv.com

Bill To:
 MACOMB COUNTY PUBLIC WORKS
 21777 DUNHAM RD
 CLINTON TOWNSHIP, MI 48036

Ship to:
 CHAPATON PUMP STATION

INVOICE DATE	INVOICE NUMBER	CUSTOMER PO	PAYMENT TERMS
Dec 31, 2018	70521		Net 10 Days

1.00 RENTAL EQUIPMENT	1,024.39 EACH	FINAL RENTAL BILL	1,024.39
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Total Invoice Amount	1,024.39
Payment/Credit Applied	

Check/Credit Memo	TOTAL	1,024.39
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1



INVOICE

SEND ALL PAYMENTS TO:

SUNBELT RENTALS, INC.
PO BOX 409211
ATLANTA, GA 30384-9211

INVOICE NO.	84054860-0003
ACCOUNT NO.	2940904
INVOICE DATE	12/07/18
PAGE	1 of 1

INVOICE TO

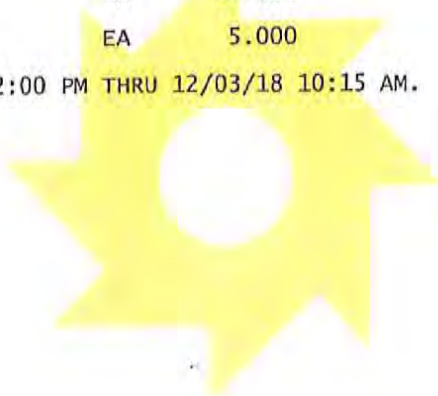
102-2181-2718
DOETSCH INDUSTRIAL SERVICES
21221 MULLIN AVE
WARREN MI 48089-3086



JOB ADDRESS
CHAPATON PUMP STATION
23001 E 9 MILE
SAINT CLAIR SHORES, MI 48080 1576
810-499-9233

RECEIVED BY Shothhoefer, Joe	CONTRACT NO. 84054860
PURCHASE ORDER NO. 10182	
JOB NO. CHAPATON PUMP STATION	
BRANCH STERLING HEIGHTS MI PC247 36000 MOUND ROAD STERLING HEIGHTS, MI 48310 586-698-9515	

QTY	EQUIPMENT #	Min	Day	Week	4 Week	Amount
1	6,000LB MINI EXCAVATOR CAB 435938 Make: JOHN DEERE Model: 27D Ser #: 1FF027DXCCG256895 HR OUT: 1554.300 HR IN: 1565.100 TOTAL: 10.800 Billed from 11/28/18 thru 12/03/18	325.00	325.00	825.00	1725.00	825.00
1	24" COMPACT EXCAVATOR BUCKET #smooth edge					N/C
Rental sub-total:						825.00
SALES ITEMS:						
Qty	Item number	Unit	Price			
1	ENVIRONMENTAL ENVIRONMENTAL	EA	11.550	11.55		
8.4	DIESEL 2141XXX000 DIESEL FINAL BILL: 11/28/18 12:00 PM THRU 12/03/18 10:15 AM.	EA	5.000	42.00		



Equipment. Service. Guaranteed.

REMIT TO:

SUNBELT RENTALS, INC.
PO BOX 409211
ATLANTA, GA 30384-9211

NET DUE UPON RECEIPT

Invoices not paid within 30 days may be subject to a 1-1/2% per month charge.

SUBTOTAL	878.55
SALES TAX	52.71
INVOICE TOTAL	931.26

910000053785

00000812393 B



DTE Energy

Payment Coupon

Account Number	91000053785
Due Date:	February 01, 2019
Total Due:	\$8,123.93

MACOMB COUNTY
 MACOMB COUNTY DRAIN COMM
 21777 DUNHAM RD
 CLINTON TWP MI 48036-1005

Mail Payments to:
 DTE Energy
 P.O. Box 630795
 Cincinnati OH 45263-0795

Please detach and return coupon with account number on check. Agencies are not authorized to accept payment of this bill.

Account Information

MACOMB COUNTY
 MACOMB COUNTY DRAIN COMM
 21777 DUNHAM RD
 CLINTON TWP, MI 48036

19-025

Account Number	9100-0005-3785
-----------------------	-----------------------

DTE-Energy Federal ID No.	38-3217752
---------------------------	------------

Programs you are enrolled in:

SolarCurrents Program

How to contact us:

Power Outage	See Detail Charges
Billing Inquiry	1-734-397-4309

Please make any inquiry or complaint about this bill to DTE Energy before the Due Date.
 DTE Energy is regulated by the Michigan Public Service Commission, Lansing, Michigan

Important Information

Beginning in January, the Power Supply Cost Recovery (PSCR) factor will increase from a credit of (0.087) cents per kwh to a surcharge of 0.181 cents per kwh. The PSCR factor allows DTE Electric to recover from customers the actual fuel and purchased power expense - there is no profit or markup.



DTE Energy

Summary Of Charges

Account Number 9100-0005-3785

Previous Balance as of 12/10/2018	7,525.12
Payment(s) and Credit(s)	- 7,525.12
Remaining Balance	\$0.00

Current Charges

Service Location	Item	Service Type	Rate	Bill Period	Amount
23001 E 9 Mile Rd	7004376662	General Service Municipal Pumping-Net Metering Cat1	EFCND3_WP	12/07 - 01/08/19	8,123.93
		Taxes			0.00
		Miscellaneous Charges			0.00
		Current Bill			\$8,123.93

Amount Due on or before Due Date of 02/01/2019 **\$8,123.93**

Your current charges are due on February 1, 2019. A 2% late payment charge will be applied if paid after the due date.



Detail Charges

For Service at: 23001 E 9 Mile Rd, St Clair Shores, MI 48082

Outage Contact Number: 1-313-235-1300

Invoice: 200001283632

Billing Period: 12/07/2018 through 01/08/2019

Days Billed: 33

Metering Information

Meter Number	Start Date	Start Read	Stop Date	Stop Read	Read Difference	Units Multiplier	Usage Used	Type
6321448	12/07	312.8A	01/08	318.5A	5.7	6,400.0000	36,480.0	P - In-V
6321448	12/07	390.1A	01/08	397.8A	7.7	6,400.0000	49,280.0	P - In-W
6321449	12/07	0.0A	01/08	0.0A	0.0	- 6400.000	0.0	P - Out-W
6321449	12/07	0.9A	01/08	0.9A	0.0	- 6400.000	0.0	P - Out-V
6321451	12/07	0.4A	01/08	0.4A	0.0	6,400.0000	0.0	P - In-V
6321451	12/07	0.4A	01/08	0.4A	0.0	6,400.0000	0.0	P - In-W
Total KVARH							36,480.00	
Total KWH							49,280.00	

Invoice: 200001283632 Service Name: Chapaton Pumping Station

Item: 7004376662 Cycle: 05

General Service Municipal Pumping-Net Metering Cat1

Billing Status Information

1	On-peak Billing Demand	1290	KW	ESTABLISHED	12/31/2018	18:30
3	65% High OP Bill Dmd June-Oct prec 11 mths	2246	KW	ESTABLISHED	10/01/2018	12:00
8	Highest Single Billing Demand	1290	KW	ESTABLISHED	12/31/2018	18:30
A	Current PV High Monthly Demand	1290	KW	ESTABLISHED	12/31/2018	18:30
B	50% of the Contract Capacity for PV	0	KW			
C	Primary Voltage Maximum Demand	4818	KW	ESTABLISHED	09/25/2018	22:30
	Contract Capacity for Location	6738	KW	ESTABLISHED	08/16/2016	05:00
	Power Factor (ratio) for all voltages	80	PCT			
	Total Number of days in the Billing Period	33	DAYS			
	Avg Kilowatthours Used Per Day This Period	1493	KWH			
	Avg Kilowatthours Used Per Day A Year Ago	1183	KWH			
	kWh percentage change from a year ago	26	PCT			
	Metered outflow	0	KWH			
	Net Delivery Billed (Inflow)	49280	KWH			
	Net Inflow (In - Out)	49280	KWH			

Charges for 12/07/2018 through 01/08/2019

Power Supply Charges:

Power Supply Energy:						
Power Supply Energy Charge	49,280	KWH			Per Total KWH	0.00
Power Supply Capacity Charge	49,280	KWH	@ \$	0.0299700	Per Total KWH	1,476.92
Power Supply Non Capacity Charge	49,280	KWH	@ \$	0.0478000	Per Total KWH	2,355.58
Surcharges:						
Power Supply Cost Recovery Factor	49,280	KWH	@ \$	0.0018100	Per Total KWH	89.20
Sub Total:						3,921.70

Delivery Charges:

Service Charge						11.25
Distribution:						
Distribution Energy	49,280	KWH	@ \$	0.0361400	Per Total KWH	1,780.98
Surcharges:						
Transitional Recovery Mechanism	49,280	KWH	@ \$	0.0013440	Per Total KWH	66.23
Tax Credit B	49,280	KWH	@ \$	-0.0053360	Per Total KWH	- 272.81
Nuclear Surcharge	49,280	KWH	@ \$	0.0007650	Per Total KWH	37.70
Energy Waste Reduction	2	MTR	@ \$	38.5100000		77.02
LIEAF Factor	2	MTR	@ \$	0.9300000		1.86
Sub Total:						1,702.23
Special Facilities Charge						2,500.00

Invoice Subtotal

8,123.93

Michigan State Sales Tax On Taxable Portion

0.00

Invoice Total

\$8,123.93





We are DTN

We've returned to our previous DTN name -- a powerhouse brand that many of our customers have known and trusted since 1984.

Here's what you can expect from us:

- * The same trusted world-class solutions and industry-leading customer service
- * Powerful new innovations to help you meet your growing challenges
- * Unmatched long-term investment and commitment to you and the Weather industry

Account No.	Invoice No.	Invoice Date
0322513	5479508	18-Jan-2019

BETZ,JOSEPH
 MACOMB COUNTY OPW
 21777 DUNHAM
 CLINTON TOWNSHIP, MI 48036

New Charges	\$ 1,466.25
Late Fees	\$ 0.00
Total Due	\$ 1,466.25

Please send your payment 7-10 days before the due date to allow time for payment processing. To ensure proper payment posting, detach and return lower portion with your payment.

Customer Service

Billing Customer Service:

888-826-4282, weatherbilling@dtn.com

Technical Support:

800-485-4000

Postal Correspondence:

DTN
 9110 W Dodge Rd Ste 100
 Omaha, NE 68114-3334

Be sure to include your name, telephone number and DTN account number whenever you contact us.

Pay My Bill

Online: Visit myaccount.dtn.com to submit payments or update your contact information 24 hours a day.

By Mail: Send your check and payment slip to the address on payment slip below.

By Phone: Call billing customer service at the number provided to pay by credit card or make changes to your account MONDAY THROUGH FRIDAY 7:00AM TO 5:00PM (CST).

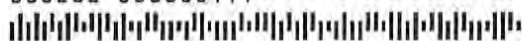
Detach and return this payment slip with your check payable to DTN



DTN, LLC
 9110 W Dodge Rd Ste 100
 Omaha, NE 68114-3334

#BWNCVKR
 0322513

000202 000000411



BETZ,JOSEPH
 MACOMB COUNTY OPW
 21777 DUNHAM RD
 CLINTON TOWNSHIP MI 48036-1005



2

T1190118.001-403-000000411

Account No.	Invoice No.	Due Date
0322513	5479508	08-Feb-2019
	Amount Due	\$ 1,466.25
Payment enclosed		.



DTN, LLC
 26385 NETWORK PLACE
 CHICAGO, IL 60673-1263

10000000054795080000000003225133 00000146625

Account Status

New Invoice	Due Date	Balance	Total
5479508	08-Feb-2019	\$ 1,466.25	\$ 1,466.25
TOTAL DUE			\$ 1,466.25

New Charges

Detailed Charges

Customer: MACOMB COUNTY OPW, CLINTON TOWNSHIP, MI
 Account Number: 0322513 UserID: MACOMB
 Email: JOSEPH.BETZ@MACOMBGOV.ORG

Service Period
 02/15/19-05/14/19 WxSentry Trans Online-Platinum \$ 924.00
SUBTOTAL \$ 924.00

Customer: MACOMB COUNTY OPW, CLINTON TOWNSHIP, MI
 Account Number: 0322513 UserID: MACOMB2
 Email: JOSEPH.BETZ@MACOMBGOV.ORG

Service Period
 02/15/19-05/14/19 WxSentry Transp Online-Std \$ 110.25
SUBTOTAL \$ 110.25

Customer: MACOMB COUNTY OPW, CLINTON TOWNSHIP, MI
 Account Number: 0322513 UserID: MACOMB3
 Email: JOSEPH.BETZ@MACOMBGOV.ORG

Service Period
 02/15/19-05/14/19 WxSentry Transp Online-Std \$ 144.00
SUBTOTAL \$ 144.00

Customer: MACOMB COUNTY OPW, CLINTON TOWNSHIP, MI

Subject to DTN Terms and Conditions

Customer's acceptance and activation of the DTN goods or services constitutes express acceptance of the Terms and Conditions, a copy of which was provided to Customer upon inception of the service. Any other terms and conditions presented by the Customer, contrary to those provided DTN, do not apply. Canceling service will result in the billing for the duration of the then-current term under the DTN Subscription Agreement.

Services Provided By:
 DTN, LLC
 Omaha, NE 68114-3334
 Tax ID (EIN) - 20-5551424
 GST: 83187 6255 RT0001

PST
 QC: 1216123332
 SK: 2448102
 MB: 087448-1
 BC: PST-1000-7804

Payment Information

If payment is not received by the due date, late fees and/or collection charges may be assessed. Customer understands that DTN may reduce or disconnect services offered to Customer for non-payment of any charges due. Customer agrees that DTN may charge a reconnection fee in the event that service is disconnected for nonpayment. A \$25.00 USD fee will be assessed for all returned checks. For your convenience, DTN accepts the following credit cards: Master Card, VISA, Discover, and American Express.

T1190118.001-404-00000411

10 Years of Excellence!

For the 10th straight year, we have topped our competitors as the most accurate provider of precipitation and short-term temperature forecasts.

The study was done by ForecastWatch.com: the independent, leading analyst of forecast predictions and actual outcomes within the weather industry.

When your business relies on accurate weather information, you can trust that you are receiving the best possible information from us.

Electronic Payment Information:

Must reference DTN Account No. and Invoice No.

Banking Details: Remit in USD

DTN, LLC
 Account No.: 464642771
 (ACH) - ABA (Routing)#: 071000013
 (Wire) - ABA (Routing)#: 021000021
 SWIFT ID: CHASUS33

Bank Address:

(ACH) - JPMorgan Chase, Chicago, IL
 (Wire) - JPMorgan Chase, New York, NY

Account Number: 0322513 UserID: MACOMB4

Email: JOSEPH.BETZ@MACOMBGOV.ORG

Service Period

02/15/19-05/14/19 WxSentry Transp Online-Std \$ 144.00

SUBTOTAL \$ 144.00

Customer: MACOMB COUNTY OPW, CLINTON TOWNSHIP, MI

Account Number: 0322513 UserID: MACOMB5

Email: JOSEPH.BETZ@MACOMBGOV.ORG

Service Period

02/15/19-05/14/19 WxSentry Transp Online-Std \$ 144.00

SUBTOTAL \$ 144.00

Total New Charges \$ 1,466.25



V27220 (02)

PHONE: (313) 891-3164 (810) 238-3349
FAX: (313) 369-2533

Michigan Fire Extinguisher

INVOICE

Bill To
Macomb County Public Works Attn: Accounts Payable 23001 E. 9 Mile Rd St. Clair Shores, MI 48080

Ship To
Chapaton Pumping Station 23001 E. 9 Mile Rd St. Clair Shores, MI 48080

Date	Invoice #	P.O. Number	Terms	Due Date	Project
1/8/19	110550		Net 30	2/7/19	

Quantity	Description	Price Each	Amount
1	Replaced panel and devices. Tested all devices. Services provided in accordance with the proposal submitted 11/18.	5,870.00	5,870.00
	Notes - Return to regain AC power. - Land PLL wires. Michigan Sales Tax <i>New Fire detection box, and devices @ Chap. W.</i>	6.00%	0.00
		Total	\$5,870.00

To ensure proper credit to your account, please return bottom portion with your payment.

Macomb County Public Works Attn: Accounts Payable 23001 E. 9 Mile Rd St. Clair Shores, MI 48080
--

Invoice #
110550

Amount
\$5,870.00
Please Send Your Payment To: 2991 Momentum Place Chicago, IL 60689-5329



Fishbeck, Thompson, Carr & Huber, Inc.
engineers | scientists | architects | constructors

Federal I.D. No. 38-1841857 | Incorporated

Payment Options

Remit Wire/ACH payments to Acct: 100094457 ABA: 072413829
Remit checks to: 1515 Arboretum Drive, SE | Grand Rapids, Michigan 49546

2018369

Attention: Mr Vincent Astorino
Macomb County Public Works Commissioner
21777 Dunham Road
Clinton Township, MI 48036
United States

Invoice: 380038
Invoice Date: 1/7/2019
Project: 181748
Project Name: Macomb Co PW/8 1/2 Drain SRF
Project Plan
Bill Term: 1

For Professional Services Rendered Through 12/28/2018

P.O. WWS-2018-xxx

		<u>Billings</u>				
		<u>Fee</u>	<u>Available</u>	<u>To Date</u>	<u>Previous</u>	<u>Current</u>
A - MCPWO		25,000.00	25,000.00	941.50	0.00	941.50
<i>Rate Labor</i>	941.50					
						<u>Current Billings</u>
						941.50
						Amount Due This Bill
						<u>941.50</u>

A - MCPWO

Rate Labor

<u>Class</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Engineer	5.00	124.0000	620.00
Senior Engineer	1.50	157.0000	235.50
Staff Engineer	1.00	86.0000	86.00
Total Rate Labor			941.50

Total Bill Task: A - MCPWO

941.50

Total Project: 181748 - Macomb Co PW/8 1/2 Drain SRF Project Plan

941.50



Fishbeck, Thompson, Carr & Huber, Inc.
 engineers | scientists | architects | constructors
 Federal I.D. No. 38-1841857 | Incorporated

Payment Options

Remit Wire/ACH payments to Acct: 100094457 ABA: 072413829
 Remit checks to: 1515 Arboretum Drive, SE | Grand Rapids, Michigan 49546

Attention: Mr Vincent Astorino
 Macomb County Public Works Commissioner
 21777 Dunham Road
 Clinton Township, MI 48036
 United States

Invoice : 380086
 Invoice Date : 1/7/2019
 Project : 130622
 Project Name : Macomb Co PW/As-needed Assist
 Bill Term : 1

For Professional Services Rendered Through 12/28/2018

J - Macomb Co PW/SEMSD_Chapaton As
 Needed

Work Included updating the SEMSD System Map
Rate Labor 2,062.00

Current
Billings
 2,062.00

Current Billings 2,062.00
Amount Due This Bill 2,062.00

Project: 130622 - Macomb Co PW/As-needed Assist

Invoice: 380086

J - Macomb Co PW/SEMSD_Chapaton As Needed

<u>Rate Labor</u> <u>Class</u>	<u>Hours</u>	<u>Rate</u>	<u>Amount</u>
Senior Engineer	10.50	180.0000	1,890.00
Staff Engineer	2.00	86.0000	172.00
Total Rate Labor			2,062.00
Total Bill Task: J - Macomb Co PW/SEMSD_Chapaton As Needed			2,062.00

Total Project: 130622 - Macomb Co PW/As-needed Assist

2,062.00



Knowledgeable • Professional • Attentive • Likeable

28838 Van Dyke • Warren, MI 48093
Phone: 586.978.7200 • Fax: 586.978.2200
www.hesco-mi.com

Invoice No. 10355

Date: 01/23/2019

Billed To: Macomb County Public Works
21777 Dunham Road
Clinton Twp MI 48036

Project: 2018251S 8.5 Mile Laser Flow Metering Stations

Contact: Vince Astorino

P.O.# 4-10-234

Due Date: 02/22/2019

Description	Qty	Rate	Amount
8.5 Mile Flow Meters Installation	1.000	10,800.00	10,800.00

Thank you for your prompt payment!

Non-Taxable Amount:	10,800.00
Taxable Amount:	0.00
Sales Tax:	0.00
Amount Due	10,800.00

Replacement tools & ladder
 8 1/2 Chap
 More saving.
 More doing.

20500 13 MILE RD
 ROSEVILLE MI 48066 586-415-9620
 2707 00022 72201 01/07/19 01:20 PM
 CASHIER CYNTHIA

051751029376 16' FG EXT <A> 189.00N - 97002
 16' FG EXTENSION LADDER TI 250LB
 078477267806 PORC SCKT X <A>
 PORCELAIN SOCKET EXTENDER
 2@2.49
 045242132522 2PK BS BLADE <A> 4.98N
 MILWAUKEE 10/14TPI BANDSAW BLADE-2PK 14.97N > 72613
 045242132225 2PK BS BLADE <A> 14.97N
 MILWAUKEE 14TPI BANDSAW BLADE-2PK
 045242237227 DP CT BD SAW <A> 299.00N - 97002
 MKE MILW 11A DEEP CUT BAND SAW W CAS

SUBTOTAL 522.92
 SALES TAX 0.00
 TAX EXEMPT
 TOTAL \$522.92
 XXXXXXXXXXXXX9843 HOME DEPOT USD\$ 522.92
 AUTH CODE 007072/6221914 TA
 MACOMB COUNTY PUBLIC WORKS
 SEMROW TREVOR
 AID A0000000049999D8400305 THD PLCC PROX

\$488.00 (97002)
 \$34.92 (72613)

PRO XTRA MEMBER STATEMENT
 PRO XTRA ###-###-6742 SUMMARY
 THIS RECEIPT PO/JOB NAME: CHAPATON
 PRO XTRA SPEND THIS VISIT: \$522.92
 2019 PRO XTRA SPEND 01/06: \$73.21
 This purchase qualifies for FUEL DISCOUNTS and 60 DAYS TO PAY on The Home Depot Commercial Credit Card. Ask an Associate to learn more or go to homedepot.com/financeoptions.



RETURN POLICY DEFINITIONS
 POLICY ID DAYS POLICY EXPIRES ON
 A 11 365 01/07/2020

 DID WE NAIL IT?
 Take a short survey for a chance TO WIN A \$5,000 HOME DEPOT GIFT CARD
 Opine en español
www.homedepot.com/survey
 User ID: WTT 147398.144713
 PASSWORD: 19057 144691

Entries must be completed within 14 days of purchase. Entrants must be 18 or older to enter. See complete rules on website. No purchase necessary.

Invoice 63406

V66440

Customer MIS1

MICHIGAN DOOR SYSTEMS
P O BOX 419
FRASER, MI 48026-0419

Telephone 586/792-8060

Bill To:

MISCELLANEOUS ACCOUNTS

Ship To:

CHAPATON PUMPING STATION
23001 E. 9 MILE ROAD
ST. CLAIR SHORES, MI 48080
PETE 586-772-3425

Date		Ship Via'		F.O.B.		Terms		
11/26/18		SERVICE		Origin		NET 10 DAYS		
Purchase Order Number			Order Date		Salesperson		Our Order Number	
18-9336			11/19/18		SK		46603	
Quantity		B.O.	Item Number	Description	Tax	Unit Price	Amount	
Required	Ship							
1	1		SL57C	83" CLEAR CONTINUOUS GEAR HINGE	Y	0.00	0.00	
1	1		LABOR	LABOR TO SERVICE ALUMINUM FULL VIEW ENTRY DOOR THAT THE FRAME BROKE LOOSE FROM DOOR. - ANCHORED FRAME BACK TO WALL - FURNISHED AND INSTALL CONTINUOUS GEAR HINGE - LEFT DOOR IN GOOD WORKING ORDER	N	500.00	500.00	
							NonTaxable Subtotal	500.00
							Taxable Subtotal	0.00
							Tax @ 6.000%	0.00
							Total	500.00



sprint.com/contactus

1-800-927-2199
(*2 from your Sprint Phone)

9:05:11

Account Information

Account Name:
MACOMB CO CHAPATON
BASIN

Account Number:
299514228

Invoice Number:
299514228-188

Bill Date:
Jan 07, 2019

Bill Period:
Dec 04 - Jan 03, 2019

TIN Number:
84-1116272

ABA Number:
111-000-012

Current P.O.:
038598

Last Bill

Previous Total Due

\$439.41

Plans

\$513.39

Payments - Thank you!

-\$439.41

Sprint Surcharges*

\$19.39

Balance Forward

\$0.00

Government Taxes & Fees

\$2.25

Charges This Bill

\$535.03

This Bill

Balance Forward

\$0.00

Charges This Bill

\$535.03

Last three months (new charges)

Total Due Jan 27

\$535.03



Pay Online
sprint.com/my/sprint

Pay by Phone
1-800-784-2808
(*3 from your Sprint Phone)

Pay by Mail
Return the form below with
a check payable to: Sprint

Please see the News and Notices section on page 2 for important information and changes to Sprint's policies.

* Any unpaid balance after the due date may be subject to a late payment charge per your contract.

* Sprint surcharges are rates we choose to collect from you at our discretion to help defray certain costs, including but not limited to costs associated with government programs and network connections. Surcharges are not taxes or amounts we are required to collect from you by law. Surcharges may include, but are not limited to: Federal USF, Regulatory Change, Administrative Change, Gross Receipts Changes, and other charges. The amounts and components used to calculate surcharge amounts are subject to change.

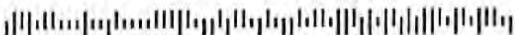
005624 27



PO Box 629023 El Dorado Hills, CA 95762



PO Box 4181
Carol Stream, IL 60197-4181



Detach and return this remittance form with your payment.
Make checks payable to Sprint in U.S. dollars. DO NOT SEND CASH.
Account Number 299514228

Amount Due by Jan 27

\$535.03

Amount Enclosed

\$ 535.03

MACOMB CO CHAPATON BASIN
21777 DUNHAM RD
CLINTON TOWNSHIP, MI 48036-1005



299514228 00000053503 000000000000 000000535036



Account Name: MACCOMB CO CHAPATON BASIN
 Account Number 299514228
 Invoice Number 299514228-188

2 of 11
 Bill Date: Jan 07, 2019
 Bill Period: Dec 04 - Jan 03, 2019

SPRINT NEWS AND NOTICES

This section contains important updates about your Sprint Services, including Service or Rate Changes, Promotions and Offers.

International, US Territories & Possessions Rates

Int'l long distance, roaming, data and text rates and plans, and inclusion in discounted pricing offers are subject to change from time to time without notice. Visit sprint.com/international to check for included destinations and the most up to date voice, text and data rate information.

Phone Security

Sprint encourages you to set a phone passcode or lock to help prevent unauthorized access. See your phone's user guide for instructions. Also consider downloading a security app for your phone. Report stolen phones to Sprint to protect your account. For more information visit sprint.com/stolenphone.

Software Updates Available

Keep your phone's software current by checking for updates regularly. Log on to sprint.com any time to check your alerts or go to sprint.com/learn and follow the instructions for your phone. That's getting it done right now.

Sprint Accessibility

Sprint offers accessible billing formats, a variety of hearing aid compatible handsets, as well as directory assistance support. Please visit sprint.com/accessibility for more information or email accessibility@sprint.com.

IMPORTANT INFORMATION RELATING TO YOUR SPRINT BILL

Correspondence

Please send all correspondence including billing inquiries to: Sprint Customer Service PO Box 629023 El Dorado Hills, CA 95762. Do not enclose your payment with the correspondence. You may also contact Sprint Customer Care at the number listed on your invoice or by going to sprint.com.

Protect your Voicemail

Use a passcode to protect against unauthorized access. If you don't use a passcode, anyone who has your handset can access your messages; therefore we strongly recommend you set one up. It's easy - just access your voicemail and follow the prompts.

Want to save paper?

EMAIL: _____

Check the boxes that apply:

- E-Bill - receive your bill by email (you will no longer receive paper bills).
- Receive Sprint updates and special offers via email.



Account Name: MACOMB CO CHAPATON BASIN
 Account Number: 299514228
 Invoice Number: 299514228-188

3 of 11
 Bill Date: Jan 07, 2019
 Bill Period: Dec 04 - Jan 03, 2019

Account Overview

Subscribers on Account: 10

USAGE CHARGES

Account Breakdown	Page	Plans	Misc. Charges & Adjustments	Equipment	Voice/ Usage Mins	Directory Assistance	Direct Connect Usage	Txt/ Usage	Data/ Usage	Sprint Premium Services	Third Party Charges	Sprint Surcharges	Gov Taxes & Fees	Totals (\$)
299514228, MACOMB CO CHAPATON BASIN														
Subscriber Breakdown														
(989) 850-1044, MACOMB CO CHAPATON 39346 Connection Plan Unit	P4		46.99	-	-	-	-	-	-	-	-	-	-	46.99
(989) 557-1148, BOB BUGANELLI Custom UNL Voice Data Plan	P4		44.99	-	12.00	-	-	-	0.0066GB	-	-	1.96	0.25	47.20
(989) 557-1151, PHIL DEHRING Custom UNL Voice Data Plan	P4		44.99	-	694.00	-	-	17	0.2209GB	-	-	1.96	0.25	47.20
(989) 557-9981, RON LUPO Custom UNL Voice Data Plan	P5		44.99	-	-	-	-	-	-	-	-	1.96	0.25	47.20
(989) 589-0258, LARRY LAVIGNE Custom UNL Voice Data Plan	P5		44.99	-	-	-	-	-	0.0099GB	-	-	1.96	0.25	47.20
(989) 615-8294, PETE THOMBLV Custom UNL Voice Data Plan	P5		44.99	-	-	-	-	-	-	-	-	1.96	0.25	47.20
(989) 630-1107, SHAWN SCHWEISER Custom UNL Voice Data Plan	P5		44.99	-	-	-	-	-	-	-	-	1.96	0.25	47.20
(989) 630-1359, CHRISTOPHER BENDA Custom UNL Voice Data Plan	P6		53.24	-	-	-	-	-	0.0153GB	-	-	1.96	0.25	55.45
(989) 741-1272, MACOMB CO CHAPATON Custom UNL Voice Data Plan	P6		89.98	-	-	-	-	-	-	-	-	3.71	0.25	93.94
(989) 745-9920, TREVOR SEMROW Custom UNL Voice Data Plan	P6		53.24	-	-	-	-	-	0.3559GB	-	-	1.96	0.25	55.45
Total Charges (\$)			513.99						695.00					555.08
Total Usage								17	0.6009GB					





3882

Account Name: MACOMB CO CHAPATON BASIN
Account Number: 299514228
Invoice Number: 299514228-188

4 of 11
Bill Date: Jan 07, 2019
Bill Period: Dec 04 - Jan 03, 2019

LAST BILL

Previous Total Due \$439.41

Payments

Payment Check #2967 Dec 19, 2018 -439.41

Total Payments -\$439.41

BALANCE FORWARD \$0.00

(586) 350-1044, MACOMB CO CHAPATON BASIN

PLANS

3G/4G Connection Plan Unltd Jan 04 - Feb 03 37.99

3G/4G Connection Plan Unltd Jan 04 - Feb 03 9.00

Sprint Complete - Includes Insurance Jan 04 - Feb 03 9.00

TOTAL PLANS \$46.99

TOTAL FOR (586) 350-1044, MACOMB CO CHAPATON BASIN \$46.99

(586) 557-1148, BOB BUGAMELLI

PLANS

Custom UNL Voice Data Plan Jan 04 - Feb 03 44.99

Custom UNL Voice Data Plan Jan 04 - Feb 03 44.99

TOTAL PLANS \$44.99

SPRINT SURCHARGES

Federal Univ Serv Assess Non-LD 7.290% 1.87

State Univ Serv Assessment 0.352% 0.09

TOTAL SPRINT SURCHARGES \$1.96

GOVERNMENT TAXES & FEES

State E911 Tax 0.000% 0.25

TOTAL GOVERNMENT TAXES & FEES \$0.25

TOTAL FOR (586) 557-1148, BOB BUGAMELLI \$47.20

(586) 557-1151, PHIL DEHRING

PLANS

Custom UNL Voice Data Plan Jan 04 - Feb 03 44.99

Custom UNL Voice Data Plan Jan 04 - Feb 03 9.00

TOTAL PLANS \$44.99

SPRINT SURCHARGES

Federal Univ Serv Assess Non-LD 7.290% 1.87

State Univ Serv Assessment 0.352% 0.09

TOTAL SPRINT SURCHARGES \$1.96

GOVERNMENT TAXES & FEES

State E911 Tax 0.000% 0.25

TOTAL GOVERNMENT TAXES & FEES \$0.25

TOTAL FOR (586) 557-1151, PHIL DEHRING \$47.20

Usage

Anytime Minutes (Unlimited) 684

Text (Unlimited) 16

MMS/Picture Mail (Unlimited) 1



...continued, (586) 557-1151, PHIL DEHRING

Data (Unlimited, GB) 0.2015
Data Roaming (0.1, GB) 0.0193

(586) 557-9381, RON LUPPO

PLANS

Custom UNL Voice Data Plan

Custom UNL Voice Data Plan

TOTAL PLANS

SPRINT SURCHARGES

Federal Univ Serv Assess Non-LD

State Univ Serv Assessment

TOTAL SPRINT SURCHARGES

GOVERNMENT TAXES & FEES

State E911 Tax

TOTAL GOVERNMENT TAXES & FEES

TOTAL FOR (586) 557-9381, RON LUPPO

(586) 569-9258, LARRY LAVIGNE

PLANS

Custom UNL Voice Data Plan

Custom UNL Voice Data Plan

TOTAL PLANS

SPRINT SURCHARGES

Federal Univ Serv Assess Non-LD

State Univ Serv Assessment

TOTAL SPRINT SURCHARGES

Account Name: MACOMB CO CHAPATON BASIN
Account Number: 299514228
Invoice Number: 299514228-188

Page 1 of 1
Bill Date: Jan 07, 2019
Bill Period: Dec 04 - Jan 03, 2019

GOVERNMENT TAXES & FEES
State E911 Tax 0.0000% 0.25
TOTAL GOVERNMENT TAXES & FEES \$0.25

TOTAL FOR (586) 569-9258, LARRY LAVIGNE

Usage

Data (Unlimited, GB) 0.0089

Data Roaming (0.1, GB) 0

(586) 615-6294, PETE TROMBL Y

PLANS

Custom UNL Voice Data Plan

Custom UNL Voice Data Plan

TOTAL PLANS

SPRINT SURCHARGES

Federal Univ Serv Assess Non-LD

State Univ Serv Assessment

TOTAL SPRINT SURCHARGES

GOVERNMENT TAXES & FEES

State E911 Tax

TOTAL GOVERNMENT TAXES & FEES

TOTAL FOR (586) 615-6294, PETE TROMBL Y

(586) 630-1107, SHAWN SCHMEISER

PLANS

Custom UNL Voice Data Plan

Custom UNL Voice Data Plan

TOTAL PLANS

0.0089

0

Jan 04 - Feb 03

44.99

\$44.99

1.87

0.09

\$1.96

0.25

\$0.25

\$47.20

1.87

0.09

\$1.96

44.99

\$44.99

005924 4/7

continues...



...continued, (586) 630-1107, SHAWN SCHMEISER

Account Name: MACOMB CO CHAPATON BASIN
Account Number: 299514228
Invoice Number: 299514228-188

6 of 4
Bill Date: Jan 07, 2019
Bill Period: Dec 04 - Jan 03, 2019

SPRINT SURCHARGES

Federal Univ Serv Assess Non-LD 7.290% 1.87
State Univ Serv Assessment 0.352% 0.09
TOTAL SPRINT SURCHARGES \$1.96

GOVERNMENT TAXES & FEES

State E911 Tax 0.000% 0.25
TOTAL GOVERNMENT TAXES & FEES \$0.25

TOTAL FOR (586) 630-1107, SHAWN SCHMEISER \$47.20

(586) 634-1359, CHRISTOPHER BENDA

PLANS

Custom UNL Voice Data Plan Jan 04 - Feb 03 44.99
Equipment Service & Repair Program Jan 04 - Feb 03 8.25
TOTAL PLANS \$53.24

SPRINT SURCHARGES

Federal Univ Serv Assess Non-LD 7.290% 1.87
State Univ Serv Assessment 0.352% 0.09
TOTAL SPRINT SURCHARGES \$1.96

GOVERNMENT TAXES & FEES

State E911 Tax 0.000% 0.25
TOTAL GOVERNMENT TAXES & FEES \$0.25

TOTAL FOR (586) 634-1359, CHRISTOPHER BENDA \$55.45

Usage
Data (Unlimited, GB) 0.0158

(586) 741-1272, MACOMB CO CHAPATON BASIN

PLANS

Custom UNL Voice Data Plan Dec 04 - Jan 03 44.99
Custom UNL Voice Data Plan Jan 04 - Feb 03 44.99
TOTAL PLANS \$89.98

SPRINT SURCHARGES

Federal Univ Serv Assess Non-LD 7.290% 3.53
State Univ Serv Assessment 0.352% 0.18
TOTAL SPRINT SURCHARGES \$3.71

GOVERNMENT TAXES & FEES

State E911 Tax 0.000% 0.25
TOTAL GOVERNMENT TAXES & FEES \$0.25

TOTAL FOR (586) 741-1272, MACOMB CO CHAPATON BASIN \$93.94

Usage

Data (Unlimited, GB) 0
Data Roaming (0.1, GB) 0

(586) 746-9820, TREVOR SEMROW

PLANS

Custom UNL Voice Data Plan Jan 04 - Feb 03 44.99
Equipment Service & Repair Program Jan 04 - Feb 03 8.25
TOTAL PLANS \$53.24



...continued, (586) 746-9820, TREVOR SEMROW
SPRINT SURCHARGES

Account Name: MACOMB CO CHAPATON BASIN
Account Number: 299514228
Invoice Number: 299514228-188

7 of 13
Bill Date: Jan 07, 2019
Bill Period: Dec 04 - Jan 03, 2019

Federal Univ Serv Assess Non-LD 7.290% 1.87

State Univ Serv Assessment 0.3522% 0.09

TOTAL SPRINT SURCHARGES \$1.96

GOVERNMENT TAXES & FEES

State E911 Tax 0.0000% 0.25

TOTAL GOVERNMENT TAXES & FEES \$0.25

TOTAL FOR (586) 746-9820, TREVOR SEMROW \$55.45

Usage

Data (Unlimited, GB) 0.3558

Data Roaming (0.1, GB) 0





3881



Call Details

Account Name: MACOMB CO CHAPATON BASIN
 Account Number: 299514228
 Invoice Number: 299514228-188

8 of 11
 Bill Date: Jan 07, 2019
 Bill Period: Dec 04 - Jan 03, 2019

Type

AU Anytime/Plan Usage
 AM Off Network - Included in America Plan
 CW Call Waiting
 NW Night and Weekends

☎ (586) 557-1148, BOB BUGAMELLI

Voice
 Call time displays as Central Time (CT) or local time depending on how and where the call was made.

On	At	To / From	Destination	Type	Mins	Cost	
Jan 03	10:03 am	(313) 324-8290	DETROIT,MI	AU	02:00	-	
	10:05 am	(800) 477-4747	Toll Free Call	AU	10:00	-	
Totals						12:00	\$0.00

Total minutes used may not be the same across all invoice sections due to the presence of non-chargeable calls.

☎ (586) 557-1151, PHIL DEHRING

Voice
 Call time displays as Central Time (CT) or local time depending on how and where the call was made.

On	At	To / From	Destination	Type	Mins	Cost
Dec 04	10:53 am	(586) 873-2406	WARREN,MI	AU	01:00	-
	11:02 am	(586) 873-2406	Incoming	AU	02:00	-
	02:11 pm	(586) 219-2979	WARREN,MI	AU	01:00	-
	02:16 pm	(810) 310-0312	Incoming	AU	04:00	-
	02:54 pm	(586) 219-2979	Incoming	AU	01:00	-
	03:02 pm	(586) 598-0335	MT CLEMENS,MI	AU	01:00	-
	04:56 pm	(586) 923-1486	Incoming	AU	01:00	-
	06:56 pm	(586) 651-5110	ROMEO,MI	AU	01:00	-

On	At	To / From	Destination	Type	Mins	Cost
Dec 05	10:22 am	(810) 656-3242	WARREN,MI	NW/AU	02:00	-
	10:38 am	(517) 215-0029	ADRIAN,MI	AU	02:00	-
	10:44 am	(810) 310-0312	CAPAC,MI	AU	02:00	-
	12:21 pm	(810) 310-0312	Incoming	AU	01:00	-
	02:03 pm	(586) 651-5110	ROMEO,MI	AU	01:00	-
	02:30 pm	(586) 651-5110	Incoming	AU	02:00	-
	03:22 pm	(586) 873-2406	WARREN,MI	AU	04:00	-
	03:34 pm	(517) 215-0029	Incoming	AU	11:00	-
	05:19 pm	(810) 300-6973	PORT HURON,MI	AU	01:00	-
Dec 08	06:46 pm	(586) 873-2406	WARREN,MI	NW/AM	09:00	-
Dec 09	05:50 pm	(586) 473-8031	ARMA,MI	NW/AU	01:00	-
	05:59 pm	(586) 873-2317	WARREN,MI	NW/AU	01:00	-
	05:55 pm	(586) 873-2406	WARREN,MI	NW/AU	02:00	-
	06:45 pm	(810) 300-6973	PORT HURON,MI	NW/AU	11:00	-
Dec 10	11:43 am	(586) 823-1430	ROMEO,MI	AU	01:00	-
	12:04 pm	(810) 343-1104	SOUTHFIELD,MI	AU	01:00	-
	12:30 pm	(586) 823-1430	Incoming	AU	01:00	-
	12:30 pm	(586) 823-1430	ROMEO,MI	AU	04:00	-
	01:29 pm	(586) 873-2317	WARREN,MI	AU	04:00	-
	05:22 pm	(810) 343-1104	SOUTHFIELD,MI	AU	04:00	-
	05:47 pm	(810) 300-6973	PORT HURON,MI	AU	03:00	-
	06:00 pm	(586) 772-3425	ROSEVILLE,MI	AU	02:00	-
Dec 11	06:30 am	(586) 923-1486	MT CLEMENS,MI	AU	01:00	-
	08:37 am	(810) 310-0312	Incoming	AU	09:00	-
	10:32 am	(586) 598-0336	Incoming	AU	04:00	-
	03:07 pm	(810) 300-6973	PORT HURON,MI	AU	01:00	-
	03:32 pm	(586) 873-2406	WARREN,MI	AU	02:00	-
	03:33 pm	(586) 873-2317	WARREN,MI	AU	01:00	-
	04:10 pm	(810) 300-6973	PORT HURON,MI	AU	02:00	-
Dec 12	09:54 am	(586) 752-0600	ROMEO,MI	AU	03:00	-
	03:28 pm	(810) 305-0295	MEMPHIS,MI	AU	15:00	-
	05:11 pm	(586) 473-8373	Incoming	AU	02:00	-
	05:50 pm	(810) 300-6973	PORT HURON,MI	AU	03:00	-
Dec 13	12:34 pm	(586) 615-2496	MT CLEMENS,MI	AU	02:00	-

continues...



...continued (586) 557-1151, PHIL DEHRING-Voice

Account Name: MACOMB CO CHAPATON BASIN
 Account Number: 289514228
 Invoice Number: 299514228-188

3 of 11
 Bill Date: Jan 07, 2019
 Bill Period: Dec 04 - Jan 03, 2019

On	At	To / From	Destination	Type	Minutes	Cost	On	At	To / From	Destination	Type	Minutes	Cost
Dec 14	08:24 am	(810) 300-6973	PORT HURON,MI	AU	01:00	-	Dec 18	08:58 am	(810) 310-0312	CAPAC,MI	AU	05:00	-
	08:30 am	(810) 300-6973	PORT HURON,MI	AU	01:00	-		09:21 pm	(586) 873-2406	Incoming	NW/AU	01:00	-
	10:19 am	(586) 473-6375	Incoming	AU	01:00	-		12:24 pm	(810) 300-6973	PORT HURON,MI	AU	01:00	-
	03:51 pm	(810) 310-0312	Incoming	AU	02:00	-		12:47 pm	(810) 300-6973	Incoming	AU	05:00	-
	06:01 pm	(586) 873-2317	WARREN,MI	AU	01:00	-		01:38 pm	(586) 784-5911	ARMADA,MI	AU	02:00	-
Dec 15	01:24 pm	(810) 556-3242	Incoming	NW/AU	05:00	-		02:26 pm	(586) 405-2884	MT CLEMENS,MI	AU	07:00	-
	04:09 pm	(810) 556-3242	Incoming	NW/AU	03:00	-		02:36 pm	(810) 310-0312	CAPAC,MI	AU	02:00	-
	04:14 pm	(810) 556-3242	Incoming	NW/AU	01:00	-		02:46 pm	(810) 310-0312	Incoming	AU	01:00	-
	04:35 pm	(586) 873-2406	WARREN,MI	NW/AU	01:00	-		04:10 pm	(810) 300-6973	PORT HURON,MI	AU	05:00	-
	04:40 pm	(586) 873-2317	WARREN,MI	NW/AU	01:00	-	Dec 19	07:42 am	(810) 310-0312	CAPAC,MI	AU	01:00	-
	05:13 pm	(586) 873-2406	WARREN,MI	NW/AU	01:00	-		07:56 am	(810) 310-0312	Incoming	AU	02:00	-
	05:23 pm	(586) 873-2406	Incoming	NW/AU	05:00	-		09:08 am	(810) 305-0295	MEMPHIS,MI	AU	01:00	-
	05:28 pm	(586) 873-2406	Incoming	NW/AU	01:00	-		11:13 am	(810) 305-0295	Incoming	AU	01:00	-
Dec 16	08:28 am	(586) 843-8585	Incoming	NW/AU	01:00	-		12:57 pm	(586) 873-2406	WARREN,MI	AU	03:00	-
	09:33 am	(810) 300-6973	PORT HURON,MI	NW/AU	10:00	-		01:22 pm	(586) 873-2406	Incoming	AU	02:00	-
	10:46 am	(810) 305-0295	MEMPHIS,MI	NW/AU	05:00	-		01:24 pm	(810) 310-0312	Incoming	AU	03:00	-
	10:51 am	(810) 310-0312	CAPAC,MI	NW/AU	02:00	-		04:43 pm	(810) 310-0312	CAPAC,MI	AU	01:00	-
	10:53 am	(810) 305-0295	MEMPHIS,MI	NW/AU	01:00	-		04:44 pm	(810) 310-0312	CAPAC,MI	AU	03:00	-
	10:54 am	(810) 310-0312	CAPAC,MI	NW/AU	03:00	-	Dec 20	06:13 pm	(810) 300-6973	PORT HURON,MI	AU	03:00	-
	11:28 am	(810) 556-3242	LAPERR,MI	NW/AU	01:00	-		12:13 pm	(512) 285-2482	ELGIN, TX	AU	01:00	-
	11:29 am	(810) 556-3242	LAPERR,MI	NW/AU	01:00	-		12:21 pm	(586) 873-2406	WARREN,MI	AU	01:00	-
	11:30 am	(734) 890-1858	ANN ARBOR,MI	NW/AU	02:00	-		12:38 pm	(586) 749-6162	NEW HAVEN,MI	AU	03:00	-
	12:15 pm	(734) 890-1858	ANN ARBOR,MI	NW/AU	01:00	-		12:43 pm	(586) 540-7884	ROME,MI	AU	01:00	-
	12:16 pm	(810) 556-3242	LAPERR,MI	NW/AU	01:00	-		01:33 pm	(586) 943-8585	Incoming	AU	02:00	-
	12:29 pm	(586) 337-3181	ROME,MI	NW/AU	01:00	-		02:01 pm	(810) 364-9270	PORT HURON,MI	AU	02:00	-
	12:39 pm	(810) 556-3242	Incoming	NW/AU	02:00	-		02:26 pm	(586) 784-5911	ARMADA,MI	AU	01:00	-
	01:01 pm	(586) 873-2406	WARREN,MI	NW/AU	01:00	-		02:28 pm	(586) 784-5911	ARMADA,MI	AU	01:00	-
	04:06 pm	(810) 300-6973	PORT HURON,MI	NW/AU	01:00	-		02:28 pm	(586) 419-4483	MT CLEMENS,MI	AU	01:00	-
	04:36 pm	(810) 300-6973	PORT HURON,MI	NW/AU	01:00	-		02:27 pm	(586) 419-4483	MT CLEMENS,MI	AU	01:00	-
	04:36 pm	(586) 337-3181	ROME,MI	NW/AU	02:00	-		04:02 pm	(586) 784-5911	ARMADA,MI	AU	02:00	-
	04:52 pm	(810) 434-7168	PORT HURON,MI	NW/AU	01:00	-		04:04 pm	(810) 364-9800	PORT HURON,MI	AU	05:00	-
	05:11 pm	(586) 873-2406	WARREN,MI	NW/AU	01:00	-		04:12 pm	(601) 849-2400	LAUREL,MS	AU	05:00	-
	05:13 pm	(586) 873-2406	Incoming	NW/AU	01:00	-		04:16 pm	(810) 364-9800	PORT HURON,MI	AU	07:00	-
	05:19 pm	(586) 873-2406	WARREN,MI	NW/AU	02:00	-		04:57 pm	(586) 873-2406	WARREN,MI	AU	02:00	-
Dec 17	01:38 pm	(586) 873-2406	Incoming	AU	01:00	-		05:57 pm	(586) 873-2406	WARREN,MI	AU	01:00	-
	01:40 pm	(810) 300-6973	PORT HURON,MI	AU	01:00	-							-



...continued, (586) 557-1151, PHIL DEHRING-Voice

Account Name: MACOMB CO CHAPATON BASIN
Account Number: 299514228
Invoice Number: 299514228-188

Bill Date: Jan 07, 2019
Bill Period: Dec 04 - Jan 03, 2019

On	At	To/From	Destination	Type	Mins	Cost	On	At	To/From	Destination	Type	Mins	Cost
Dec 21	06:38 pm	(586) 243-7276	MT CLEMENS,MI	AU	04:00	-	Dec 27	09:03 pm	(810) 300-6973	PORT HURON,MI	NW/AU	01:00	-
	06:46 pm	(586) 243-7276	Incoming	AU	01:00	-		12:13 pm	(586) 540-7864	ROMEO,MI	AU	01:00	-
	06:51 pm	(586) 943-8585	ROSEVILLE,MI	AU	03:00	-		12:52 pm	(586) 540-7864	ROMEO,MI	AU	01:00	-
	08:17 am	(586) 943-8585	ROSEVILLE,MI	AU	02:00	-		03:04 pm	(810) 300-6973	PORT HURON,MI	AU	01:00	-
	08:22 am	(810) 300-6973	PORT HURON,MI	AU	03:00	-		03:42 pm	(810) 300-6973	Incoming	AU	02:00	-
	08:55 am	(586) 515-1124	Incoming	AU	03:00	-		04:19 pm	(810) 300-6973	PORT HURON,MI	AU	01:00	-
	02:40 pm	(810) 310-0312	CAPAC,MI	AU	13:00	-		07:29 pm	(586) 784-9863	ARMADA,MI	AU	02:00	-
	02:53 pm	(810) 310-0312	CAPAC,MI	AU	03:00	-	Dec 28	10:02 am	(586) 873-2406	Incoming	AU	04:00	-
	04:26 pm	(586) 651-5110	ROMEO,MI	AU	01:00	-		11:17 am	(586) 873-2406	WARREN,MI	AU	01:00	-
	04:47 pm	(810) 300-6973	PORT HURON,MI	AU	01:00	-		11:50 am	(586) 873-2406	Incoming	AU	08:00	-
	05:26 pm	(586) 873-2406	WARREN,MI	AU	02:00	-		02:12 pm	(810) 310-0312	Incoming	AU	27:00	-
	05:44 pm	(810) 300-6973	Incoming	AU	02:00	-		02:46 pm	(810) 956-3409	PORT HURON,MI	AU	01:00	-
	06:21 pm	(810) 310-0312	Incoming	AU	04:00	-	Dec 29	08:16 am	(810) 300-6973	PORT HURON,MI	NW/AU	02:00	-
	06:23 pm	(586) 873-2406	Incoming	CW/AU	01:00	-		10:54 am	(810) 650-1613	PORT HURON,MI	NW/AU	02:00	-
	09:19 pm	(586) 873-2406	WARREN,MI	NW/AU	01:00	-		10:55 am	(810) 627-0766	Incoming	NW/CW/AU	01:00	-
Dec 22	07:23 am	(810) 300-6973	PORT HURON,MI	NW/AU	01:00	-		01:02 pm	(810) 305-0295	MEMPHIS,MI	NW/AU	03:00	-
	12:32 pm	(810) 300-6973	Incoming	NW/AU	01:00	-		01:10 pm	(810) 305-0295	Incoming	NW/AU	03:00	-
	01:39 pm	(810) 305-0295	MEMPHIS,MI	NW/AU	02:00	-		01:31 pm	(810) 305-0295	Incoming	NW/AU	02:00	-
	01:44 pm	(810) 310-0312	CAPAC,MI	NW/AU	05:00	-		05:57 pm	(586) 943-8585	ROSEVILLE,MI	NW/AU	03:00	-
	01:59 pm	(810) 310-0312	Incoming	NW/AU	03:00	-		06:01 pm	(810) 304-1146	YALE,MI	NW/AU	01:00	-
	05:12 pm	(810) 679-9676	Incoming	NW/AU	03:00	-	Dec 30	11:38 am	(810) 310-0312	Incoming	NW/AU	05:00	-
	09:14 am	(810) 310-0312	Incoming	NW/AU	05:00	-		05:24 pm	(810) 650-7772	Incoming	NW/AU	03:00	-
Dec 23	12:08 pm	(586) 405-2384	MT CLEMENS,MI	NW/AU	02:00	-		05:36 pm	(810) 300-6973	PORT HURON,MI	NW/AU	03:00	-
	03:03 pm	(810) 310-0312	CAPAC,MI	NW/AU	02:00	-		09:01 pm	(586) 873-2406	WARREN,MI	NW/AU	05:00	-
	03:25 pm	(810) 310-0312	CAPAC,MI	NW/AU	02:00	-	Dec 31	09:43 am	(810) 304-1146	YALE,MI	AU	01:00	-
	04:40 pm	(810) 310-0312	CAPAC,MI	NW/AU	02:00	-		09:56 am	(586) 943-8585	ROSEVILLE,MI	AU	02:00	-
	05:38 pm	(810) 310-0312	Incoming	NW/AU	02:00	-		11:26 am	(810) 300-6973	PORT HURON,MI	AU	01:00	-
Dec 24	10:46 am	(810) 434-7168	PORT HURON,MI	AU	02:00	-		11:32 am	(810) 533-9248	Incoming	AU	01:00	-
	10:48 am	(810) 300-6973	PORT HURON,MI	AU	01:00	-		04:43 pm	(586) 772-9425	ROSEVILLE,MI	AU	03:00	-
	11:06 am	(586) 784-9863	ARMADA,MI	AU	04:00	-		05:29 pm	(586) 873-2406	Incoming	AU	01:00	-
	11:53 am	(810) 300-6973	Incoming	AU	05:00	-		05:41 pm	(248) 568-3244	Incoming	AU	03:00	-
	09:30 pm	(586) 943-8585	ROSEVILLE,MI	NW/AU	01:00	-		05:34 pm	(231) 838-2822	PETOSKEY,MI	AU	01:00	-
Dec 25	11:02 am	(586) 873-2406	Incoming	AU	06:00	-		06:52 pm	(231) 448-2004	ST JAWES,MI	AU	13:00	-
	07:56 pm	(810) 300-6973	PORT HURON,MI	AU	01:00	-		10:37 pm	(810) 300-6973	Incoming	NW/AU	01:00	-
	09:36 am	(810) 300-6973	PORT HURON,MI	AU	01:00	-	Jan 01	12:16 am	(586) 598-0336	Incoming	NW/AU	02:00	-
	09:40 am	(810) 533-9248	SOUTHFIELD,MI	AU	01:00	-		12:36 am	(586) 598-0336	Incoming	NW/AU	03:00	-
	10:22 am	(810) 300-6973	Incoming	AU	03:00	-		09:29 am	(586) 598-0336	MT CLEMENS,MI	AU	07:00	-
	11:00 am	(810) 310-0312	Incoming	AU	08:00	-		10:01 am	(810) 300-6973	Incoming	AU	03:00	-
	03:09 pm	(810) 305-0295	MEMPHIS,MI	AU	02:00	-		10:12 am	(586) 943-8585	Incoming	AU	02:00	-
	05:46 pm	(810) 300-6973	PORT HURON,MI	AU	01:00	-		10:29 am	(810) 679-9676	CROSWELL,MI	AU	01:00	-

continues...



Account Name: MACOMB CO CHAPATON BASIN
 Account Number: 299514228
 Invoice Number: 299514228-188

11 of 11
 Bill Date: Jan 07, 2019
 Bill Period: Dec 04 - Jan 03, 2019

...continued, (586) 557-1151, PHIL DEHRING-Voice

On	At	To / From	Destination	Type	Mins	Cost
10:30 am		(810) 679-9676	Incoming	AU	04:00	-
03:06 pm		(249) 588-3244	PONTIAC,MI	AU	01:00	-
03:11 pm		(810) 304-1146	VALE,MI	AU	02:00	-
07:08 pm		(954) 771-2802	FTLAUDERDL,FL	AU	01:00	-
07:08 pm		(954) 855-2237	FTLAUDERDL,FL	AU	01:00	-
07:09 pm		(954) 471-5748	FTLAUDERDL,FL	AU	46:00	-
Jan 02	08:58 am	(810) 679-9676	Incoming	AU	02:00	-
	09:39 am	(810) 392-2850	MEMPHIS,MI	AU	01:00	-
	09:43 am	(810) 543-1388	MEMPHIS,MI	AU	01:00	-
	09:53 am	(586) 469-5499	MT CLEMENS,MI	AU	03:00	-
	10:54 am	(810) 543-1388	Incoming	AU	02:00	-
	10:57 am	(810) 679-9676	CROSWELL,MI	AU	09:00	-
	03:51 pm	(810) 300-6973	PORT HURON,MI	AU	03:00	-
Jan 03	09:56 am	(586) 480-9368	Incoming	AU	01:00	-
	10:15 am	(810) 679-9676	CROSWELL,MI	AU	02:00	-
	01:50 pm	(810) 310-0312	Incoming	AU	03:00	-
	07:14 pm	(586) 873-2406	WARREN,MI	AU	09:00	-
Totals					684:00	\$0.00

Total minutes used may not be the same across all invoice sections due to the presence of non-chargeable calls.



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
Water Resources Division
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

INVOICE

Issued under authority of Public Act 451 of 1994, as amended.
Federal ID #38-6000134

V0719
DA

CHAPATON RETENTION TREATMENT BASIN
BRENT AVERY
23001 EAST NINE MILE ROAD
SAINT CLAIR SHORES, MI 48080
US

Invoice Number:	761-10390822
Customer Id:	182955
Invoice Date:	December 01, 2018
Total Due:	\$6,000.00

CHAPATON RTB
23001 EAST NINE MILE ROAD
SAINT CLAIR SHORES, MI 48080

**FAILURE TO SUBMIT PAYMENT BY THE DATE DUE WILL RESULT IN
PENALTIES AS PRESCRIBED BY LAW.**

Account No.:
MI0025585

Invoice Item	Qty	Unit Cost	Sales Tax	Total Cost
NPDES Annual Permit Fee, 2019 MI0025585, Chapaton RTB	1.00	\$6,000.00	\$0.00	\$6,000.00

PAY ONLINE at <https://miwaters.deq.state.mi.us>
Using your MiWaters account, select Financials from the side panel to make a payment.

Total Invoice: **\$6,000.00**
Payment Due: January 15, 2019

For questions please contact (517) 284-5588

REMIT PAYMENT TO: **STATE OF MICHIGAN**
TO ENSURE PROPER CREDIT, SEND THIS PORTION WITH PAYMENT TO:

**MDEQ - NP1
CASHIERS OFFICE
PO BOX 30657
LANSING, MI 48909-8157**

Account No.:
MI0025585

INVOICE NUMBER 761-10390822 WRD NP1

(Please note or make any address corrections below.)

CHAPATON RETENTION TREATMENT BASIN
BRENT AVERY
23001 EAST NINE MILE ROAD
SAINT CLAIR SHORES, MI 48080
US

Total Due: **\$6,000.00**



MOTOR CITY ELECTRIC TECHNOLOGIES INC.
 AUTOMATION AND CONTROLS SOLUTIONS
 9440 GRINNELL
 DETROIT, MI 48213-1151
 PHONE (313) 921-5300 FAX (313) 921-5310
 AN EQUAL OPPORTUNITY EMPLOYER

INVOICE

13030 MACOMB COUNTY PUBLIC WORKS
 21777 DUNHAM ROAD
 CLINTON TOWNSHIP, MI 48036

Customer
 P.O. Number

Job Number	Sub Job	Contract Number	Date Performed	Application Date	Number
819500	0	001	11/28/2018	1/9/2019	92238

JOE BETZ

Item No	Description of Work	Contract Amount	Previous Billings	Current Amount	To Date Complete & Stored	Balance To Finish	Current Retainage
001	T&M	\$1,068.00	-	\$1,068.00	\$1,068.00	-	-
Totals:		\$1,068.00		\$1,068.00	\$1,068.00		
Less Retained:							
Invoice Total:				\$1,068.00			

AS NEEDED ELECTRICAL AND ENGINEERING SERVICE

SEE ATTACHED INVOICE SUMMARY AND FIELD REPORT

CHAPATON: 100% = \$1,068.00

complete electrical construction

"We hereby certify that the articles and services covered by this invoice were produced and performed in compliance with all applicable requirements of Section 6, 7 and 12 of the Fair Labor Standards Act, as amended, and of regulations and orders of the United States Department of Labor issued under Section 14 thereof."



9440 GRINNELL, DETROIT, MI 48213-1151

FIELD REPORT

MOTOR CITY ELECTRIC TECHNOLOGIES

REPORT NO: G181210-
093825

CUSTOMER: Macomb County Public Works DATE: 11/28/2018 MCE JOB NO: 919500 SHEET OF

LOCATION OF WORK: Remote CUSTOMER ORDER NO:

WORK PERFORMED:

11-28: Adding Milk River sites to County Scada. Configured all settings for connectivity through SESMD firewall to MR LAN. 11-29: Completed all network settings to establish connectivity with all MR sites and tested.

LABOR

LABOR CLASSIFICATION / NAME	STRAIGHT TIME			TIME AND ONE HALF			DOUBLE TIME			TOTAL	
	HRS	RATE	COST	HRS	RATE	COST	HRS	RATE	COST		
<i>Engineer-Wireless/Network</i>										<i>Subtotal:</i>	<i>\$1,068.00</i>
Myers, Eric	12.00	\$89.00	\$1,068.00		\$125.00	\$0.00		\$160.00	\$0.00		\$1,068.00
										TOTAL:	\$1,068.00

REPORT SUMMARY	ST HRS	OT HRS	DT HRS	COST	TAX	MARKUP	OH & P	REPORT TOTAL
Labor	12.00			\$1,068.00		\$0.00	\$0.00	\$1,068.00
REPORT TOTALS:	12.00			\$1,068.00		\$0.00	\$0.00	\$1,068.00



Invoice Summary

Motor City Electric Technologies Inc.
9440 Grinnell, Detroit, MI 48213-1151

Macomb County Public Works

Job No: 919500
Invoice No: 92238
Invoice Date: 1/9/2019

Invoice Detail

INVOICE DETAIL	ST HRS	OT HRS	DT HRS	COST	TAX	MARKUP	OH & P	INVOICE TOTAL
Labor	12.00			\$1,068.00		\$0.00	\$0.00	\$1,068.00
Invoice Totals:	12.00			\$1,068.00		\$0.00	\$0.00	\$1,068.00

Invoice Detail by Field Report

11/28/2018 Remote

Report Number: G181210-0938	ST HRS	OT HRS	DT HRS	COST	TAX	MARKUP	OH & P	REPORT TOTAL
Labor	12.00			\$1,068.00		\$0.00	\$0.00	\$1,068.00
Report Totals:	12.00			\$1,068.00		\$0.00	\$0.00	\$1,068.00



FIELD REPORT

G 919500-181210-093825
 Job No YMMDD HHMMSS

MOTOR CITY ELECTRIC TECHNOLOGIES - (313) 921-5300/FAX (313) 923-5310

CUSTOMER: Macomb County DATE: November 28, 2018 JOB NO: 919500 SHEET 1 OF 2

LOCATION OF WORK: Remote CUSTOMER ORDER NO: _____

WORK PERFORMED: 11-28: Adding Milk River sites to County Scada. Configured all settings for connectivity through SESMD firewall to MR
(BE AS DESCRIPTIVE AS POSSIBLE)
LAN. 11-29: Completed all network settings to establish connectivity with all MR sites and tested.

LABOR

	NAME	CLASSIFICATION	STRAIGHT TIME	TIME AND ONE HALF	DOUBLE TIME	SHIFT	COMMENTS
1	Eric Myers	ENGINEER	4.00	0.00	0.00	1	11-28
2	Eric Myers	ENGINEER	8.00	0.00	0.00	1	11-29
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
TOTAL HOURS			12.00	0.00	0.00		

EQUIPMENT

	DESCRIPTION	QUANTITY	DESCRIPTION	QUANTITY	DESCRIPTION	QUANTITY
1	Service Truck	0	18 < None >	0.00	35 < None >	0
2	Pick Up Truck	0	19		36	
3	Rolling Set Up	0	20		37	
4	Manlift Scissors to 25'	0	21		38	
5	Manlift Boom to 40'	0	22		39	
6	< None >	0	23		40	
7			24		41	
8			25		42	
9			26		43	
10			27		44	
11			28		45	
12			29		46	
13			30		47	
14			31		48	
15			32		49	
16			33		50	
17			34		51	

167454

NOVALYNX CORPORATION
PO BOX 240
GRASS VALLEY, CA 95945-0240
Phone: (530) 823-7185
Fax: (530) 823-8997
Email: nova@novalynx.com
Federal Tax ID: 68-0237829
DUNS 96-137-3214

INVOICE

Invoice No: 53960
Customer ID: MACOMB CPS

Bill To: MACOMB COUNTY PUBLIC WORKS
ATTN: ACCOUNTS PAYABLE
23001 E 9 MILE RD
SAINT CLAIR SHORES, MI 48080-1576

Ship To: MACOMB COUNTY PUBLIC WORKS
ATTN: KRISTOFER BENDA
23001 E 9 MILE RD
SAINT CLAIR SHORES, MI 48080-1576

<i>Invoice Date</i>		<i>Ship Via</i>		<i>F.O.B. Point</i>		<i>Payment Terms</i>		
10/08/18		UPS GROUND		Origin		Net 30		
<i>Purchase Order Number</i>			<i>Order Date</i>		<i>Sales Person</i>		<i>Our Order Number</i>	
189332			10/02/18		Mary Sweetser - mary@novalynx.com		810003	
<i>Quantity</i>			<i>Part Number</i>		<i>Description</i>		<i>Unit Price</i>	<i>Amount</i>
<i>Required</i>	<i>Shipped</i>	<i>B.O.</i>						

1	1		260-2500E-12	12" ELEC RAIN GAUGE 0.01" INCLUDES 25' HEATER CABLE AND 25' SIGNAL CABLE	1045.00	1045.00
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Invoice subtotal	1045.00
Freight charges	56.89
Invoice total	1101.89

Thank You
101



PVS Nolwood Chemicals, Inc.

10900 Harper Avenue, Detroit, MI 48213
Telephone: 313-925-0300 Fax: 313-571-2225

V6531 (01)



INVOICE
No. 620494

Sold To: Macomb County Public Works
57769 21777 Dumham
Clinton Twp, MI 48036

Ship To: Chapaton Retention Basin
57770 23001 Nine Mile Rd.
St. Clair Shores, MI 48089

Ship ID: 653659	Load ID 364183	Payment Terms:	Net 30 Days
Sales Order: 613787		Freight Type	DIRW-del
Customer PO: pete		Ship Via	CommCarBk
Invoice / Ship Date: 12/11/2018		Originating Warehouse:	DIRW

SO Line	Quantity Ordered	Ord UOM	Qty to Follow	Product Description	Quantity Shipped	Quantity Invoiced	Inv UOM	Unit Price	Total
1	45,000.00	LB	0.00	PVS N Sodium Hypochlorite 12.5% Bulk	46,652.49	4,620.00000	GA	1.13200	5,229.84

Reference 266624D

Please Pay This Amount
\$5,229.84

Please Remit To: PVS Nolwood Chemicals, Inc.
25210 Network Place
Chicago, IL 60673-1503



St. Clair Shores Water Bill

ACCOUNT NUMBER 23287-00	SERVICE ADDRESS 23001 NINE MILE	SERVICE TYPE Government
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PREVIOUS BALANCE	0.00
Water	2800.16
Sewer	3797.18
Customer Chg	342.00
Retention Basins O&M	0.49
Storm Water	678.83

PREVIOUS READ 1297	CURRENT READ 1343 A	CONSUMPTION 591	FROM: SERVICE PERIOD TO: 09/16/2018 12/13/2018
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DUE DATE 01/21/2019	PAY AFTER DUE DATE 7999.59	PAY BY DUE DATE 7618.66
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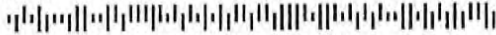
CURRENT BALANCE	7618.66
------------------------	----------------

MONTHLY BUDGET

19.009

Temp-Return Service Requested

8276 1 AB 0.408 8276-8276-20



MACOMB COUNTY PUBLIC WORKS
21777 DUNHAM RD
CLINTON TWP MI 48036-1005

**PLEASE RETAIN THIS UPPER PORTION FOR YOUR RECORDS.
YOUR CANCELLED CHECK IS YOUR RECEIPT.**

Water rate: \$4.738/unit
Sewer rate: \$6.425/unit
Total rate: \$11.163
One unit = 748 gallons



City of St. Clair Shores

27600 Jefferson Ave.
St. Clair Shores, MI 48081

FOR FURTHER INFORMATION PLEASE CALL:
BILLING INFORMATION - (586) 447-3317
SERVICE INFORMATION - (586) 445-5374
VISIT US ON THE WEB AT www.scsmi.org

To Pay by Credit Card or Electronic Check



Visit www.scsmi.org
Online Payments and Services
or call 1-855-414-9009 (credit card only)

Point and Pay LLC, the service provider, charges a fee for this service of:
3.00% for credit cards (\$1.50 minimum)
Electronic checks are provided as a FREE service.

IMPORTANT INFORMATION - SEE REVERSE SIDE

REMOVE DOCUMENT ALONG THIS PERFORATION
AND MAKE SURE RETURN ADDRESS APPEARS THROUGH WINDOW



St. Clair Shores Water Bill

Due Date	Pay After Due Date	PAY BY DUE DATE
01/21/2019	7999.59	7618.66

Service Address

23001 NINE MILE

City of St. Clair Shores
27600 Jefferson Ave
Saint Clair Shores MI 48081-2075

Account Number

23287-00





TELEDYNE INSTRUMENTS, INC.

Everywhere you look™

Federal ID: 95-4888283

Page 1 of 2

V54617

Remit to: 12497 Collections Center Drive
Chicago, IL 60693
ABA# 121-000-358
Acct# 12331-07806

Sold To:
Macomb County Public Works
Commissioner
21777 Duham Road
CLINTON, MI 48036

Invoice

Bill To:
Macomb County Public Works
Commissioner
21777 Duham Road
CLINTON, MI 48036

Ship To:
Macomb County Public Works
Pete Trombley 586-772-3425
23001 E 9 Mile Road
Saint Clair Shores, MI 48080

Sales Order	Customer PO	Customer Reference	Payment Terms	Discount	Customer No	Invoice No
00345918	1227242		Net 30		0049154	S020301234

Carrier	Tracking Number	Teledyne Contact Information	Invoice Date
FedEx Ground		Wilson, Donna May 402-465-3055	1/14/2019

Delivery Terms	Named Destination	Packing List	RMA Number
ORIG-S&HAd		00347885	

Line	Item Number	Description	Tax U/M	Quantity	Unit Price	Amount
	685800064	SMPLR 5800 115V W/BATTERY BKUP 5800 Refrigerated Sampler (115 VAC, 60 Hz) with battery backed power. Includes control panel, refrigeration unit, distributor arm, battery backed connector adaptor, 6.5 AH lead-acid battery, battery bracket, two pump tubes, instruction manual, and pocket guide. To receive a complete system you must also order a bottle configuration kit and suction line with strainer. ***Includes 2 year limited warranty***	ea	1	6,230.00	6,230.00
	Serial Number(s):	603004106: 219A01380 625800064: 219A00216				
	685800009	BTL KIT 1-10L PLST 1-bottle Configuration. Includes one polyethylene 2.5-gallon (10-liter) round bottle, locating base, one cap and two discharge tubes.	ea	1	188.00	188.00
	609004379	S/L W/STR 3/8X25 S 3/8 inch ID x 25 ft. long vinyl suction line with standard weighted polypropylene strainer. Includes tubing coupler.	ea	1	115.00	115.00

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.

Seller's acceptance of this Order is expressly conditioned upon the Buyer's assent to Seller's General Terms and Conditions of Sale as stated in Seller's Offer and found at the applicable Teledyne company internet website listed below. Seller is proceeding with the performance of Buyer's Order strictly on this basis. Teledyne Isco, Teledyne Tekmar, Teledyne Hanson, Teledyne Leeman Labs, and Teledyne Cetac are registered business names of Teledyne Instruments, Inc., a subsidiary of Teledyne Technologies Incorporated. Teledyne Ethics Line 1-877-666-6968.

Continued Next Page



TELEDYNE INSTRUMENTS, INC.

Everywhere you look™

Federal ID: 95-4888283

Remit to: 12497 Collections Center Drive
Chicago, IL 60693
ABA# 121-000-358
Acct# 12331-07806

Sold To:
Macomb County Public Works
Commissioner
21777 Duham Road
CLINTON, MI 48036

Invoice

Bill To:
Macomb County Public Works
Commissioner
21777 Duham Road
CLINTON, MI 48036

Ship To:
Macomb County Public Works
Pete Trombley 586-772-3425
23001 E 9 Mile Road
Saint Clair Shores, MI 48080

Sales Order	Customer PO	Customer Reference	Payment Terms	Discount	Customer No	Invoice No
00345918	1227242		Net 30		0049154	S020301234
Carrier	Tracking Number	Teledyne Contact Information			Invoice Date	
FedEx Ground		Wilson, Donna May 402-465-3055			1/14/2019	
Delivery Terms	Named Destination	Packing List				
ORIG-S&HAD		00347885				

Line	Item Number	Description	Tax	U/M	Quantity	Unit Price	Amount
	685800020	5800 CABLE WITH FLY LEADS 5800 refrigerated sampler multipurpose cable with 16 unterminated leads, 10 ft. (3 m). Includes instruction sheet.		ea	1	99.00	99.00

Shipping & Handling 370.00

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.

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Invoice Amount

7,002.00 USD



Wade Trim
 500 Griswold Street • Suite 2500 • Detroit, MI 48226
 313.961.3650 • FAX: 313.961.0898 • www.wadetrim.com
 Federal ID 38-1802386

INVOICE

Terms: Net 30 Days
 1.5% Per Month After 30 Days
 18% Annual Rate

Macomb County Public Works
 P.O. Box 806
 Mt. Clemens, MI 48046-0806
 Attention: Stephen Downing
 Engineer II-Waste Water Services

Invoice Date : January 7, 2019
 Invoice # : M2013462
 Project # : MCW200401D

Remit payment to : Wade Trim
 500 Griswold Street
 Suite 2500
 Detroit, MI 48226

Re: Basin Segmentation/Disinfection Sys

For Professional Services rendered from 11/25/2018 through 12/28/2018

Chapaton RTB Segmentation and Disinfection

WWS 18-006

\$117,500 - Original Contract Amount
 \$ 9,275 - Change Order #1

\$126,775 - Current Contract Amount

Total Salaries	\$29,508.75
Total Expenses	\$0.00
Professional Services Rendered	\$29,508.75

Amount Due This Invoice	\$29,508.75
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Statement	
Prior Invoices	\$79,317.50
This Invoice	\$29,508.75
Total Invoiced	\$108,826.25
Paid to Date	\$80,758.75
Amount Outstanding	\$48,067.50

Fee Summary	
Authorized Fee	\$126,775.00
Total Invoiced	\$108,826.25
Amount Remaining	\$17,948.75

Wade Trim

Wade Trim
 500 Griswold Street • Suite 2500 • Detroit, MI 48226
 313.961.3650 • FAX: 313.961.0898 • www.wadetrिम.com
 Federal ID 38-1802386

INVOICE

Terms: Net 30 Days
 1.5% Per Month After 30 Days
 18% Annual Rate

Invoice Date : January 7, 2019
 Invoice # : M2013462
 Project # : MCW200401D

Phase: 200 -- Chapaton RTB Segmentation&Disinfect**Rate Schedule Labor**

<i>Classification</i>	<i>Hours</i>	<i>Rate</i>	<i>Amount</i>
PM - Senior Professional	18.50	\$195.00	\$3,607.50
Professional Engineer I	80.00	\$120.00	\$9,600.00
Professional Engineer IV	38.00	\$175.00	\$6,650.00
Project Admin	0.50	\$65.00	\$32.50
Project Specialist III	19.00	\$165.00	\$3,135.00
Senior Professional	33.00	\$195.00	\$6,435.00
Total Rate Schedule Labor	189.00		\$29,460.00

Total Phase : 200 -- Chapaton RTB Segmentation&Disinfect Labor : \$29,460.00
 Expense : \$0.00

Phase: 201 -- CO#1 Canal Mapping and Survey**Rate Schedule Labor**

<i>Classification</i>	<i>Hours</i>	<i>Rate</i>	<i>Amount</i>
PM - Senior Professional	0.25	\$195.00	\$48.75
Total Rate Schedule Labor	0.25		\$48.75

Total Phase : 201 -- CO#1 Canal Mapping and Survey Labor : \$48.75
 Expense : \$0.00

Total Project: MCW200401D -- Basin Segmentation/Disinfection Sys \$29,508.75

Chapaton RTB Segmentation / Disinfection

Conducted meetings with technical staff to review study progress, schedule and coordinate study efforts.
 Held project progress meeting No. 2. Completed computational fluid dynamic (CFD) modeling for RTB short circuit analysis with preferred segmentation option. Continued development of draft report. Change Order 1: Working on conversion of point cloud into BIM model.

Budget to Actual
 8.5 Mile Relief
 As of Jan 31, 2019 = 33%

47,890.00

DESCRIPTION	2019 FINAL BUDGET	ENCUMBERED	ACTUAL	REMAINING BUDGET	PCT UTILIZED
REVENUE ACCOUNTS					
Interest Earned	26,000		27,934	(1,934)	107.4%
Other Revenue	1,500		13,554	(12,054)	903.6%
8.5 O&M/Charge Required Revenue	3,898,266		1,949,133	1,949,133	50.0%
PY Revenue-Fund Balance	1,946,000			1,946,000	0.0%
Rental Fee	15,360		6,402	8,958	41.7%
Total Revenue Accounts	5,887,126	-	1,997,023	3,890,103	33.9%
EXPENSE ACCOUNTS					
Application/Permt Fee	3,000			3,000	0.0%
Dues, Training, Conf, Subs.	5,750		7,125	(1,375)	123.9%
Engineering					
Chapaton East Disinfection System Improvement	50,000			50,000	0.0%
Various Design/Study projects	240,000		44,770	195,230	18.7%
Design of Improvements	50,000			50,000	0.0%
As Needed Engineering	75,000		4,936	70,064	6.6%
Chapaton Improvements-Office Space	250,000			250,000	0.0%
TRC Basin Equipment	100,000		990	99,010	1.0%
9 Mile & 8 1/2 Mile Rehab	100,000			100,000	0.0%
Basin Structural Integrity Study	60,000			60,000	0.0%
Basin Expansion Design	1,000,000		31,013	968,987	3.1%
In-System Storage Design(Gates on 8.5 Tunnel)	500,000			500,000	0.0%
New Equipment					
Office Supplies	750		106	644	14.1%
Operating Supplies	82,750		19,489	63,261	23.6%
Other Professional Svcs	47,920		28,226	19,694	58.9%
Personnel Services	875,405		3,058	872,347	0.3%
Repair & Maintenance	100,615		83,594	17,021	83.1%
Switch gear(Label and maintenance)	45,000			45,000	0.0%
Painting interior and garage facade	20,000			20,000	0.0%
Instrumentation all buildings	30,000			30,000	0.0%
Canal seawall sheeting	5,000			5,000	0.0%
Driveway grate	12,000			12,000	0.0%
Pumping and screening improvements	1,250,000			1,250,000	0.0%
CHA-EB Chem Flow Meter - Basin Gates (Pumps 4-5)	10,000			10,000	0.0%
Security Fence Structures Around Gate Actuators	60,000			60,000	0.0%
Electrical Upgrade Program	10,000			10,000	0.0%
Pump Station Exterior Wall Upgrades-Basin Kneewall	4,000			4,000	0.0%
9 Mile Dewatering Gate	5,000			5,000	0.0%
SRF Replacemnet Reserve	259,215			259,215	0.0%
Scada System					
Utilities	190,073		5,279	184,794	2.8%
Utilities	284,148		44,247	239,901	15.6%
Total Expense Accounts	5,887,126	-	297,939	5,589,187	5.1%

	O&M Balance 9/30/2018	O&M	Total 1/31/2019
Cash - Operating	4,445,246	1,699,084	6,144,330
Accounts Receivable			0
Assets			0
Liabilities			0
Revenues		1,997,023	1,997,023
Expenditures		297,939	297,939
			0
Equity*	4,445,246		6,144,330

Detail of 2018 Equity*

5 year maintenance of switchgear	38,000	Instrumentation all buildings	30,000
9 Mile Dewatering Gate	5,000	Outfall Gate Reserve	7,000
Canal seawall sheeting	5,000	Painting interior and garage facade	20,000
CHA-EB Chem Flow Meter - Basin Gates (Pumps 4-5)	10,000	Pump Station Exterior-Basin Kneewall	4,000
Chapaton East disinfection system improvement	50,000	Pumping and screening improvements	1,250,000
Design of Improvements	50,000	RTB/PS Ventilation Design	60,000
Disinfection Systems Improvement Study	120,000	Sampling Pumps	2,500
Driveway grate	12,000	Scada Reserve	80,000
Electrical Upgrade Program	10,000	Security Fence Structures -Gate Act	60,000
Emergency Reserve	818,956	Spare Rain Gauge	2,500
Flow Meter	150,000	SRF Replacement Reserve	1,555,290
HVAC design	60,000	Switch gear(Label and maintenance)	45,000