

MACOMB INTERCEPTOR DRAIN
AUGUST 13, 2018
11:00 A.M.
AGENDA

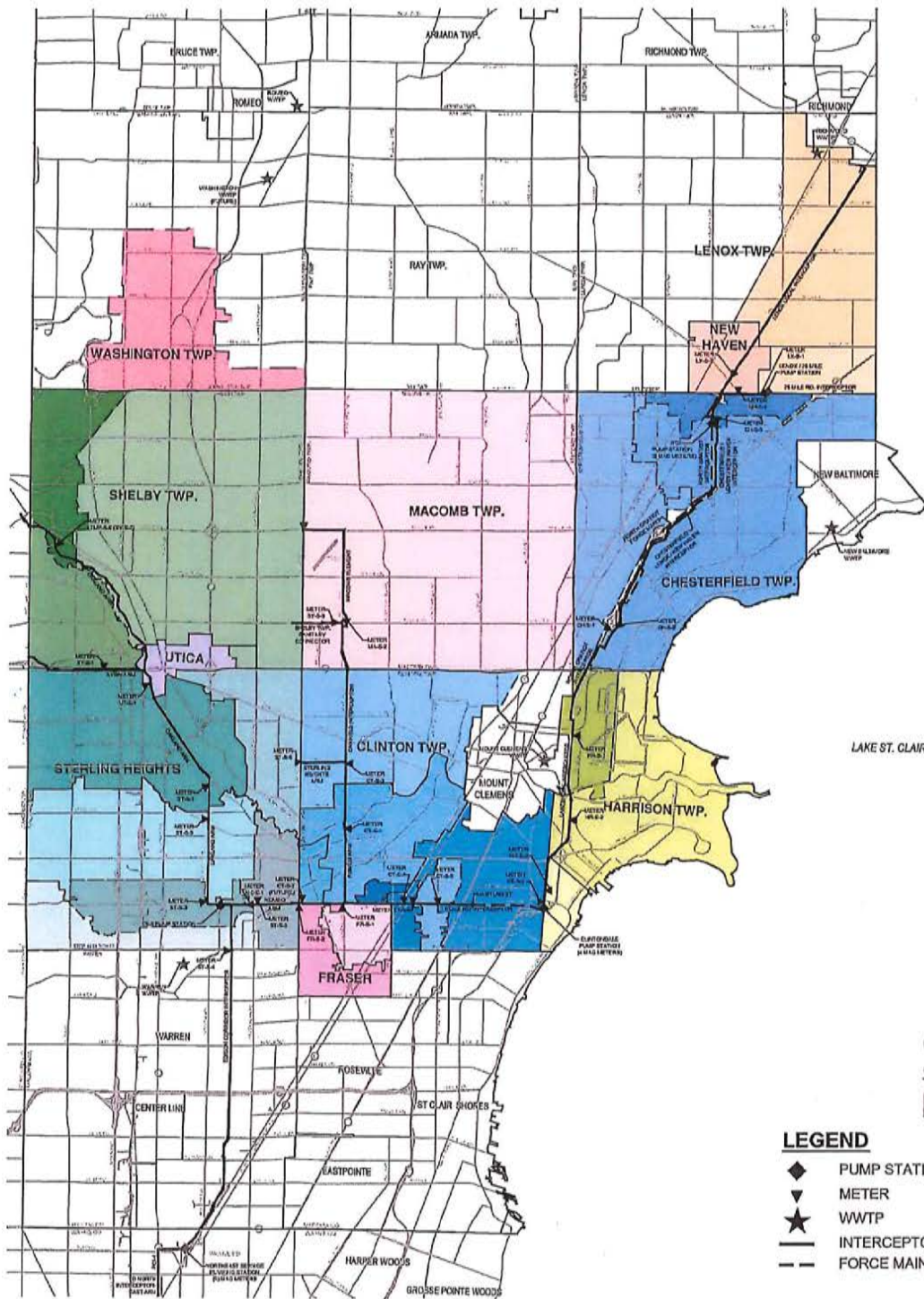
	Page
1. Call of meeting to order and roll call	
2. Approval of Agenda for August 13, 2018	
3. Approval of Minutes for July 9, 2018	3
4. Public participation	
5. Lakeshore Interceptor Grease Removal Recommendation – Vince Astorino	6
Motion: Motion to approve award of contract to Doetsch Environmental Services for removal of the fatberg upstream of the Clintondale Pump Station for a not-to-exceed amount of \$99,500	
6. Chesterfield Township Library Purchase Agreement – Candice Miller	18
Motion: To approve the Real Estate Purchase Agreement between Chesterfield Township Library and the Macomb Interceptor Drain Drainage District for the property located at 21 Mile Road and Sugarbush (Parcel ID #09-32-127-033)	
7. Restoration Agreement and Release for replacement of a gate and fence – <u>Green Lantern</u> – Evans Bantios	28
Motion: To approve the Restoration Agreement and Release totaling \$1,984, as full and final resolution of all claims relating to Green Lantern, and authorize Aloia & Associates to proceed to finalize the transaction	
8. Retention of Dr. Gary Brierley (Doctor Mole Incorporated) – Candice Miller	34
Motion: To approve the Engagement Agreement with Doctor Mole Incorporated to conduct a professional review and recommendation for future rehabilitation needs of the MID system	
9. Wastewater Master Plan Change Order No. 2 – Vince Astorino	47
Motion: To approve Change Order No. 2 to the Fishbeck, Thompson, Carr & Huber, Inc. Master Plan Contract for a St. Clair Shores sewer Separation study to be funded by Lake St. Clair Clean Water Initiative Funds	

- | | | |
|-----|---|----|
| 10. | Consideration for approval of invoices (see attached) | 50 |
| 11. | MIDD Financial Report – Bruce Manning | 53 |
| 12. | Old Business | |
| 13. | New Business | |
| 14. | Adjourn | |

Next Regular Meeting

September 10, 2018 at the Office of the Macomb County Public Works Commissioner,
21777 Dunham Road, Clinton Township, Michigan 48036

MACOMB INTERCEPTOR DRAIN DRAINAGE DISTRICT



LEGEND

- ◆ PUMP STATION
- ▼ METER
- ★ WWTP
- INTERCEPTOR
- - - FORCE MAIN



Candice S. Miller

MACOMB COUNTY PUBLIC WORKS COMMISSIONER

fish

UPDATED: FEBRUARY 2017

An adjourned meeting of the Intra-County Drainage District for the **MACOMB INTERCEPTOR DRAIN DRAINAGE DISTRICT** was held in the Office of the Macomb County Public Works Commissioner, 21777 Dunham Road, Clinton Township, Michigan, on July 9, 2018 at 10:32 A.M.

PRESENT: Candice Miller, Chair
Robert Mijac, Member

ABSENT: Bryan Santo, Member

ALSO PRESENT: Robert Leonetti, Macomb County Board of Commissioners; Karen Czernel, Deputy, Vincent Astorino, P.E., Operations and Flow Manager, Bruce Manning, Financial Manager, Dan Heaton, Public Relations Manager, Barbara Delecke, Administrative Services, Macomb County Public Works (MCPW); Annemarie Lepore, Aloia & Associates; Jordan Scott, Sterling Heights Dept. of Public Works

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

Adopted: YEAS: 2
NAYS: 0

Minutes of the meeting of June 11, 2018 were presented. A motion was made by Mr. Mijac and supported by Ms. Miller to approve the minutes as presented.

Adopted: YEAS: 2
NAYS: 0

The Restoration Agreement and Permit cost is for a license-to-use for the Gair residence property.

A motion was made by Mr. Mijac, supported by Ms. Miller to approve the Restoration Agreement and Permit totaling \$1,500.00, as a full and final resolution of all claims relating to 16610 15 mile Road (Gair residence), and to authorize Aloia & Associates to proceed to finalize the transaction.

Adopted: YEAS: 2
NAYS: 0

The Settlement Agreement and Release is for repair and restoration work at 34941 Eberlein.

A motion was made by Mr. Mijac, supported by Ms. Miller to approve the Settlement Agreement and Release totaling \$19,295.00, as a full and final resolution of all claims relating to 34941 Eberlein, and authorize Aloia & Associates to proceed to finalize the transaction.

Adopted: YEAS: 2
NAYS: 0

Forcemain cleaning is an annual maintenance item. A pig is installed in the forcemain and sent through the entire pipe. Flowmore Services has performed the pigging operation in the past.

A motion was made by Mr. Mijac, supported by Ms. Miller to approve the proposal submitted by Flowmore Services in the amount of \$16,435.00 for cleaning two forcemains approximately 27,000 feet each.

Adopted: YEAS: 2
NAYS: 0

The MID is the administrator of the shared services grant awarded to Southeast Macomb Sanitary District (SEMSD). The grant will be used to determine if the drainage districts can be merged to consolidate services. The SEMSD Board approved the additional work to the Wastewater Master Plan.

A motion was made by Mr. Mijac, supported by Ms. Miller to approve grant funded Change Order No. 1 to include Tasks 1, 2 and 3 and increase Fishbeck, Thompson, Carr & Huber's (FTC&H) contract by \$110,574 for the development of a Master Plan.

Adopted: YEAS: 2
NAYS: 0

There is one underground flow structure that is in need of rehabilitation. Three proposals were submitted for the rehabilitation of SY-S-1. Hubbell, Roth & Clark, Inc. (HRC) submitted the proposal with the highest technical score and lowest cost.

A motion was made by Mr. Mijac, supported by Ms. Miller to approve the proposal from HRC for design and engineering of SY-S-1 Meter Pit Rehabilitation.

Adopted: YEAS: 2
NAYS: 0

A system-wide odor and corrosion control study will be conducted through the MIDDD. Equipment will be installed throughout the system to determine where the odor is and where the major corrosion is taking place.

A motion was made by Mr. Mijac, supported by Ms. Miller to approve the proposal from CH2M Engineers, Inc. (CH2M0 for engineering services to conduct a comprehensive Odor & Corrosion Study of the MIDDD and NGI systems.

Adopted: YEAS: 2
NAYS: 0

The Chair presented the invoices totaling \$5,648,571.02 to the board for review and approval.

A motion was made by Mr. Mijac, supported by Ms. Miller to approve the invoices as presented.

Adopted: YEAS: 2
NAYS: 0

A motion to receive and file the financial report given by Mr. Manning was made by Mr. Mijac and supported by Ms. Miller.

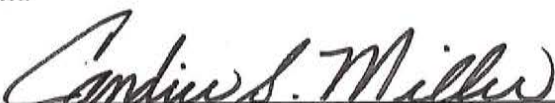
Adopted: YEAS: 2
NAYS: 0

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

Adopted: YEAS: 2
NAYS: 0

Request for Proposals (RFPs) were sent out to perform a design study on the entire ITC Corridor, which is the section of pipe downstream from the 1978, 2004 and 2017 sinkholes. Proposals for the design phase will be brought to the next board meeting.

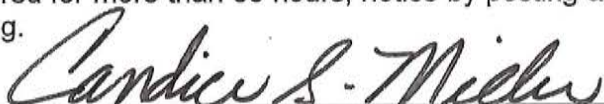
The meeting was adjourned at 11:02 a.m.



Candice S. Miller
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 District shown on the attached set of minutes, on July 9, 2018, 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
Macomb County Public Works Commissioner

DATED: 7/11/18

9328.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: August 3, 2018

Subject: Lakeshore Interceptor Grease Removal Recommendation

The Lakeshore Interceptor is a 11-foot concrete pipe and approximately 50 feet deep that transports sanitary flow from Chesterfield Twp., Clinton Twp., Harrison Twp., Lenox Twp., New Haven, and Selfridge ANG to the Clintondale Pump Station (CPS).

During the 2017 MID Interceptor Inspections, it was found that a very large greaseball or "fatberg" has formed just upstream of CPS. I have included a picture below of this. This fatberg, if left alone, could cause significant damage to the automated screening facility at CPS, the pumps at CPS, or eventually could completely restrict flow through the pipe causing basement backups upstream and a serious public health hazard.

We reached out to two different companies to provide a quote to perform this work and their not-to-exceed (NTE) numbers are below with the quotes attached.

- Doetsch Environmental Services = \$99,500
- National Industrial Maintenance, Inc. = Approximately \$100,000 (No official proposal submitted)

National Industrial did not submit a proper proposal and were ultimately very hesitant to perform this type of work as this is outside of their typical operations. Doetsch provided a NTE value of \$99,500 and have assumed this work might take 20 days to complete. They have proposed to begin cleaning for 3 days to establish a baseline if the work can be completed within that time period.

After reviewing the proposals submitted, it is my recommendation that we move forward with Doetsch Environmental Services with the NTE limit of **\$99,500.00**. We have budgeted \$100,000 to perform this work as of July 1, 2018. I also recommend having the motion of allowing them to mobilize at the cost of \$6,500 and to begin cleaning for 3 days to establish the baseline for the amount of days needed. If they are going to exceed the projected 20 days, then the MIDD Chairperson can make the decision to proceed with the additional costs or stop work.



Doetsch

ENVIRONMENTAL SERVICES
21221 Mullin Ave. Warren MI 48089

January 17, 2018

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

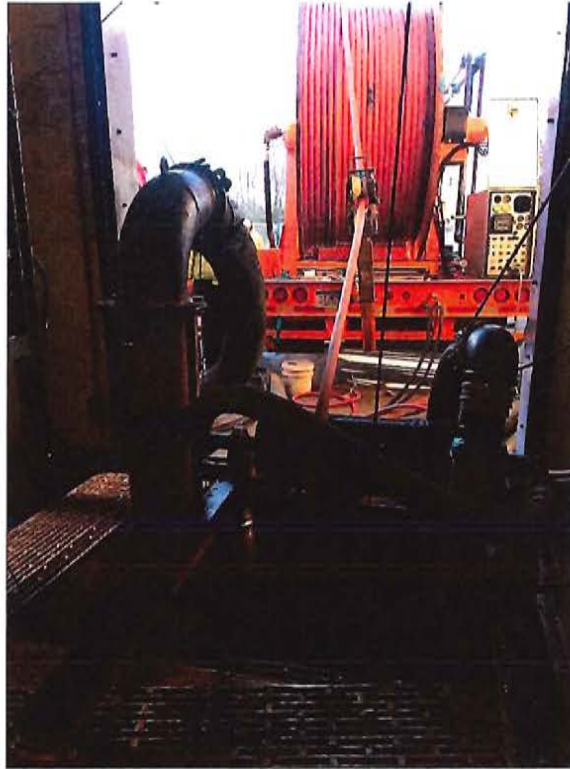
RE: MID Clintondale Cleaning Budget

Mr. Rozycki,

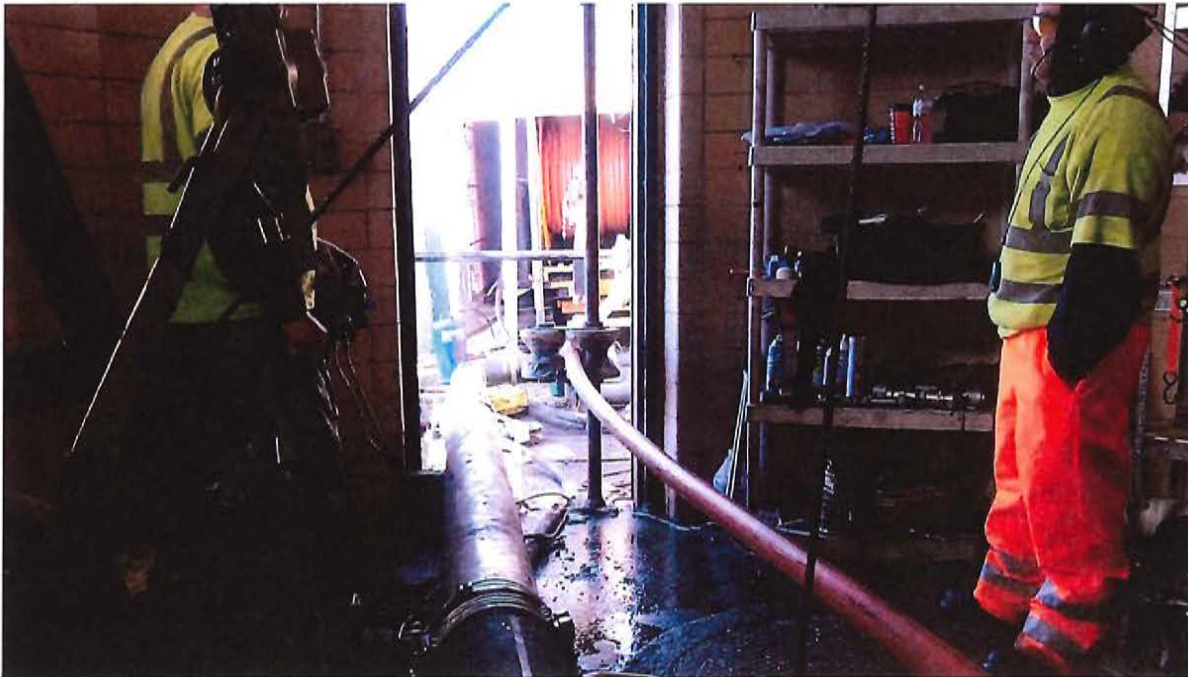
Please review the following photo story for a review of proposed cleaning operations at Clintondale PS.



Inside the pump station looking out



Lifting Rack, suspended pipeline, hydraulic winch and HPU



Inside building set up



Vacuum box, trailer and tractor, low sided dump box and 6" pump



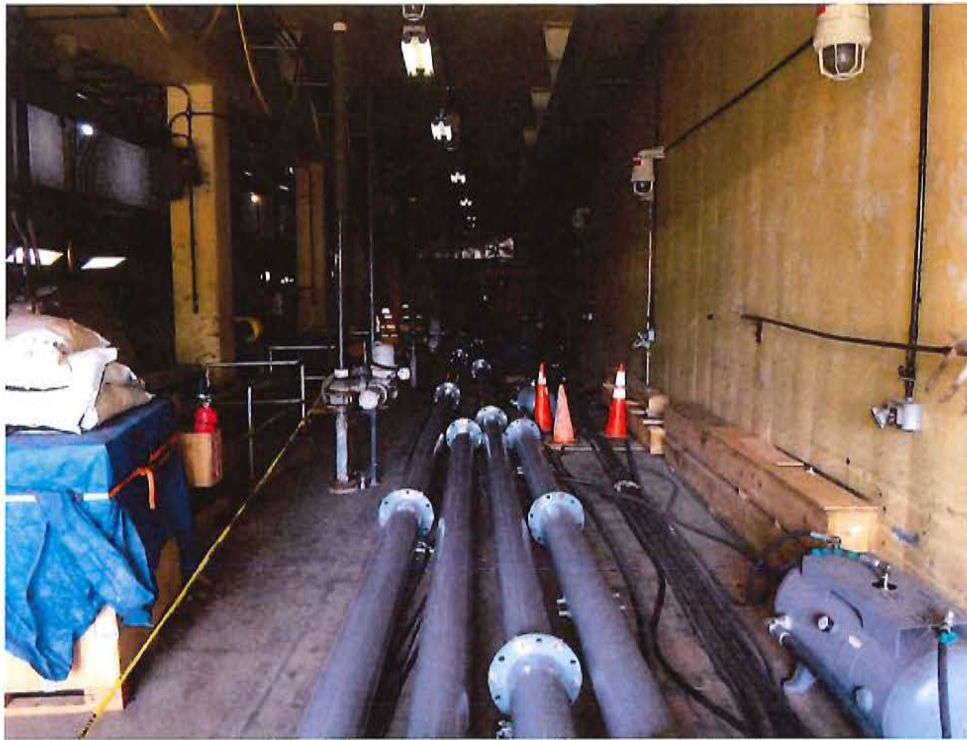
High pressure pump unit.



Remote reels at the bar screen



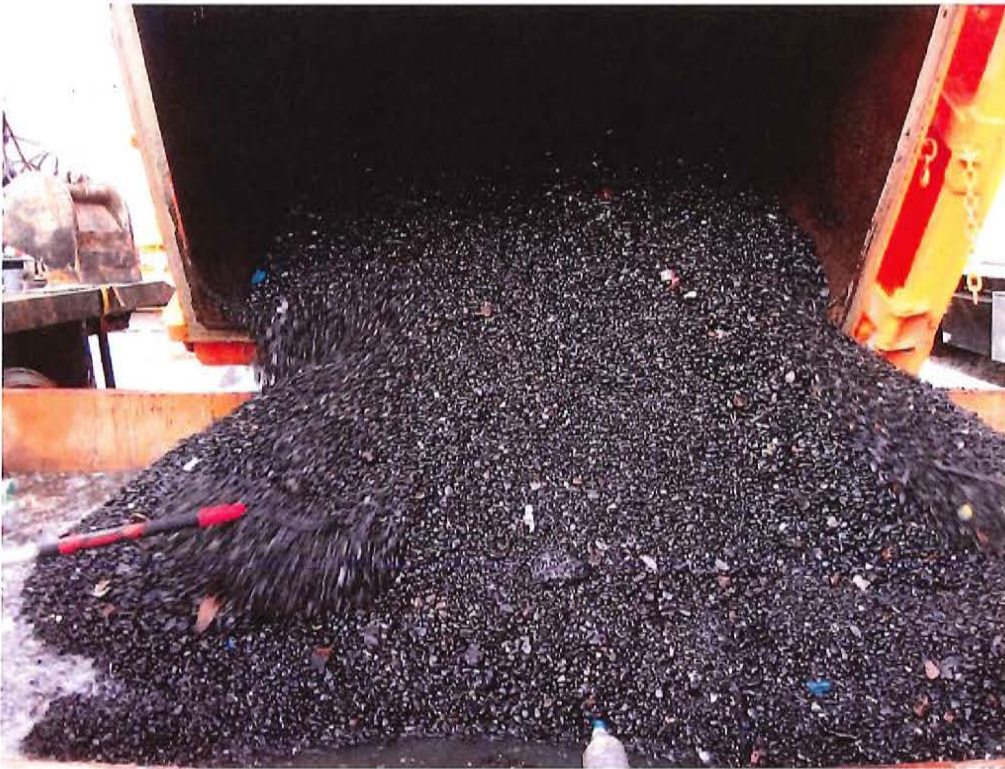
Distance from bar rack to building exit.



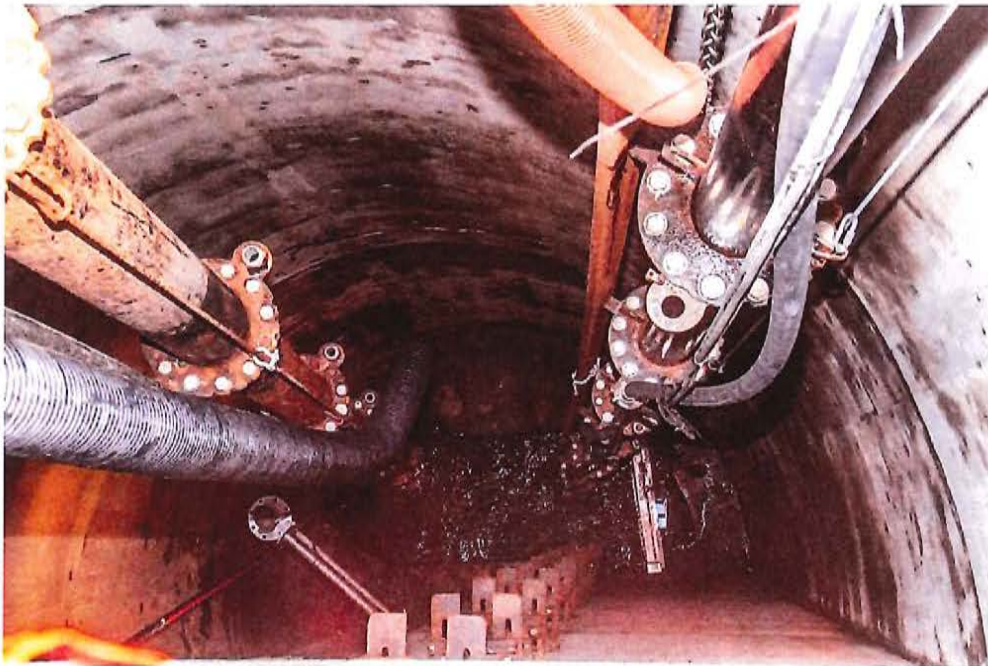
Remote Pipeline with air injection (looking in opposite direction).



Debris / water separator, air compressor and vacuum truck. Outside building.



Resulting Debris.



Vacuum and submersible pump simultaneous extraction.



Current set up at pump station in TN





Impact rack used at DC Potomac Pump Station

Scope:

- Set cleaning equipment at the PS screen house, not to impede traffic.
- Access either side of well
- Use two methods of extraction, vacuum with air injection and also an 8" submersible pump.
- Remote hose reel would be used in building
- Impact rack for grease mat will be fabricated and installed in line to protect bar screens from large grease chunks.
- Grease mat may be cut with custom nozzle or with high pressure water from upstream manhole.
- Line will be cleaned hydraulically of grease and debris.
- All work will be sonar/cctv verified.

From field survey:

- 30" of debris at grease mat
- 13" – thickness of grease mat
- Grease mat starts 75' u/s of manhole
- Debris is 36" at manhole and tapers downstream to 40"

Recommend a day rate comparable to the 15 Mile operation, I would like to view the RedZone data to better approximate debris levels and then to approximate a time frame. From initial data, 450 tons seems plausible.

Budget: 50 days @ \$10,500.00 = \$525,000.00

Option B:

Clean only the grease mat:

- Set up equipment at manhole in street (equipment to be left staged during offshift hours)
- Equipment will be a high pressure truck to cut the grease and vacuum truck to extract at manhole (no set up at bar racks).
- A platform will be erected to work from and to "funnel" grease chunks towards vacuum tube.
- Pulverized grease slurry can be hauled to disposal or drained back into interceptor.
- Require garden hose hook up at pump station to equipment in road (will provide ramps).

Mobilization and platform building: \$6,500.00

Price per day: \$4,650.00 per day (10 hours onsite)

Estimate 20 days, unknown amount of current grease and amount of sediment under it (may inhibit ability to float downstream).

Propose to begin cleaning for 3 days and get a baseline of how much grease can be cut in a shift, extrapolate this by the length of the mat, if estimate looks realistic, then cleaning will continue.

Thank you for the opportunity to be of service,

A handwritten signature in blue ink, appearing to read "Joseph G. Schotthoefer IV". The signature is written in a cursive style with a small flourish at the end.

Joseph.G Schotthoefer IV

MACOMB INTERCEPTOR DRAIN DRAINAGE DISTRICT
AGENDA ITEM WORKSHEET

Meeting Date: Monday, August 13, 2018

Property: 21 Mile & Sugarbush / vacant / Parcel ID 09-32-127-033

Synopsis: The Chesterfield Township Library Board has made an offer to purchase this Property for \$100,000.00 to build their new Chesterfield Township Library. This sale has been facilitated by Commissioner Miller. The Property has been listed for sale for a long period of time without receiving any offers, and it also has an area of wetlands which could hinder its market value and development possibilities.

Recommendation: Approve the enclosed Real Estate Purchase Agreement:

REAL ESTATE PURCHASE AGREEMENT

THIS REAL ESTATE PURCHASE AGREEMENT (the “**Agreement**”) is made this day of August ____, 2018 (the “**Effective Date**”), by and between CHESTERFIELD TOWNSHIP LIBRARY, a Township Library organized pursuant to Act 164 of 1877 (the “**Purchaser**”), and the MACOMB INTERCEPTOR DRAIN DRAINAGE DISTRICT, as Seller (the “**MIDDD**”). (Sometimes the “**Purchaser** and “**MIDDD**” are singularly referred to as “**Party**” and jointly referred to as “**Parties in this Agreement**”)

1. General Terms and Conditions. Subject to the terms and conditions of this Agreement, Purchaser hereby offers to purchase, and MIDDD agrees to sell to Purchaser, the Subject Property described in paragraph 2 of this Agreement. Purchaser acknowledges and agrees the offer to purchase real estate presented in this Agreement is being submitted to the MIDDD c/o the Macomb County Department of Public Works (“**MCPW**”).

2. Subject Real Property. The real property that is the subject of this Agreement, legally described on **Exhibit A**, is commonly known as:

Address: 21 Mile Road, Chesterfield, Michigan, 48047
Parcel/Tax ID: 09-32-127-033
Legal Description: See **Exhibit A**

together with all structures, improvements, appurtenances, rights, tenements and hereditaments, now with the land, and subject to any easements, covenants and restrictions of record and zoning laws and ordinances affecting the real property (the “**Subject Property**”). Purchaser acknowledges that upon consummation of the sale contemplated by the Agreement that Purchaser will acquire whatever title to the Subject Property that is being offered by the MIDDD, “as is,” “where is,” subject to assessments, debt service fees, taxes, liens, easements, or claims of rights of others, if any.

3. Eligibility of Purchaser. The Chesterfield Township Library Board of Trustees represents and warrants that it, and/or any affiliated Board Member is not: (a) under 18 years of age; (b) an employee of the MIDDD, MCPW or Macomb County; or (c) an agent or immediate member of the household of an employee of the MIDDD, MCPW or Macomb County. For breach of this warranty, the MIDDD shall have the right to terminate this Agreement without and further liability on the part of the MIDDD and Purchaser shall be deemed to be in default as provided in Paragraph 6 below.

4. Offer to Purchase and Sale of Real Property. Subject to the terms and conditions herein, MIDDD Agrees to sell and convey to Purchaser, and Purchaser agrees to purchase the Subject Property from the MIDDD for One Hundred Thousand and 00/100 (\$100,000.00) in U.S. Dollars (the “**Purchase Price**”).

5. Terms of Payment. The Purchase Price shall be paid by Purchaser to the MIDDD as follows:

- a. The entire unpaid balance of the Purchase Price shall be paid by the

Purchaser at closing in cash, certified funds, cashier's check or wire transfer.

- i. Certified Funds. As used in this Agreement, the term "Certified Funds" shall mean, funds that are guaranteed by bank, (cashier's check), or paid in cash (subject to the cash limit as defined herein below).
- ii. Cash Limit. No more than Ten Thousand and 00/100 (\$10,000.00) Dollars in total may be paid in cash to MCPDW to pay all, or any part of the Purchase Price.

6. Due Diligence and Access to Property. Purchaser shall have the right to inspect and determine the feasibility of the purchase of the Property within ninety (90) days of the Effective Date (the "**Due Diligence Period**"), including, but not limited to investigations relating to zoning and municipal restrictions, easements and title encumbrances, available utilities, development potential, and conducting soil tests, structural, subsurface, environmental, wetlands, topographical analysis or any other test or analysis the Purchaser desires in order to determine the feasibility of the purchase of the Property in the Purchaser's sole discretion (the "**Due Diligence**"). During the Due Diligence Period, Purchaser, its agents and representatives, shall have reasonable access to the Property, including, the right to inspect the Property via Purchaser's employees, appraisers, agents, architects, environmental consultants and engineers. All appraisals, inspections, audits, tests, that Purchaser requests shall be at the Purchaser's sole cost and expense, and shall be performed during reasonable business hours with reasonable prior advance to the MIDD. Purchaser shall, at its sole cost and expense, restore any damage to the Subject Property resulting from any of Purchaser's inspections or testing. Purchaser shall also indemnify, defend, and hold the MIDD harmless with respect to any personal liability, bodily injury, property damage, and construction and/or mechanic's liens resulting from Purchaser's entry and conduct of due diligence activities upon the Subject Property, including but not limited to all attorneys' fees and costs incurred in connection therewith. Upon the MIDD's written request, Purchaser shall provide a PDF or paper copy to the MIDD of any testing results or reports pertaining to the Subject Property arising out of Purchaser's due diligence activities.

If the Purchaser deems that the purchase of the Subject Property is not acceptable, which shall be in Purchaser's sole, subjective, and discretionary decision, Purchaser may terminate this Agreement by written notice delivered to MIDD on or before the expiration of the Due Diligence Period. Upon the timely termination of this Agreement, neither party shall have any further liability or obligation to the other under this Agreement. In the event Purchaser does not terminate this Agreement on or before the expiration of the Due Diligence Period, then Purchaser shall be deemed to have approved all matters relating to Property (other than the conditions to closing set forth in this Agreement), and the Purchaser shall be bound to close.

7. Covenant Deed. Purchaser acknowledges that it will receive a Covenant Deed transferring whatever rights, title and interest the MIDD had in the Subject Property at the time of the Closing. The Purchaser will also receive a Property Transfer Affidavit that must be submitted to the Sterling Heights Assessor in accordance with state law.

8. "AS IS" Sale. THE PROPERTY IS BEING SOLD "AS IS", "WHERE IS" AND "WITH ALL FAULTS" AS OF CLOSING, WITHOUT ANY REPRESENTATION OR WARRANTY AS TO ITS CONDITION, FITNESS FOR ANY PARTICULAR PURPOSE,

MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED. THE MIDDD SPECIFICALLY DISCLAIMS ANY WARRANTY, GUARANTY OR REPRESENTATION, ORAL OR WRITTEN, PAST OR PRESENT, EXPRESS OR IMPLIED CONCERNING THE PROPERTY. PURCHASER ACKNOWLEDGES THAT PURCHASER IS PURCHASING THE PROPERTY BASED SOLELY UPON PURCHASER'S OWN INDEPENDENT INVESTIGATIONS AND FINDINGS AND NOT IN RELIANCE UPON ANY INFORMATION PROVIDED BY THE MIDDD'S MCPW'S OR MACOMB COUNTY'S, EMPLOYEES, AGENTS, OR CONTRACTORS.

9. General Release. Purchaser releases MIDDD and its agents, employees and representatives, including the MCPW, Macomb County and the Macomb County Public Works Commissioner Candice S. Miller, from any and all claims demands, causes of action, judgments, losses, damages, liabilities, costs and expenses (including without limitation attorney's fees whether suit is instituted or not) whether known or unknown, liquidated or contingent (collectively "Claims") arising from or related to (a) the sale administered by the MIDDD, the MCPW or their agents, employees and contractors, or (b) any defects, errors or omissions in the design, condition or construction of the Property, whether the same are a result of negligence or otherwise, or (c) other conditions (including, but not limited to environmental conditions, wetlands, zoning and suitability) affecting the Property, whether the same are a result of negligence or otherwise, or (d) the ownership, title, possession, occupancy, use, management or leasing of the Property.

10. Environmental Release. The release set forth in Paragraph 9 above specifically includes any Claims under any Environmental Laws, or with respect to any environmental risk. "Environmental Laws" includes, but is not limited to the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (42 U.S.C. §§6901 et seq.), the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (42 U.S.C. §§9601 et seq.), the Emergency Planning and Community Right to Know Act (42 U.S.C. §§11001 et seq.), the Clean Air Act (42 U.S.C. §§7401 et seq.), the Clean Water Act (33 U.S.C. §§1251 et seq.), the Toxic Substances Control Act (15 U.S.C. §§2601 et seq.), the Hazardous Materials Transportation Act (49 U.S.C. §§1801 et seq.), the Occupational Safety and Health Act (29 U.S.C. §§651 et seq.), the Federal Insecticide, Fungicide and Rodenticide Act (7 U.S.C. §§136 et seq.), and the Safe Drinking Water Act (42 U.S.C. §§300f et seq.), as any of the same may be amended from time to time, and any state or local law dealing with environmental matters, and any regulations, orders, rules, procedures, guidelines and the like promulgated in connection therewith, regardless of whether the same are in existence on the date of this Agreement.

11. Claims Liability. The Purchaser acknowledges and agrees hold the MIDDD harmless from any and all losses, liabilities, actions, claims, debts, demands, judgments, liabilities, costs and attorneys' fees arising out of, claimed on account of, or in any manner predicated upon loss of or damage to property and injuries, illness or disabilities to or death of any and all persons whatsoever, including the Purchaser, members of the general public, or to the property of any legal or political entity including State, local and interstate bodies, in any manner caused by or contributed to by the Purchaser, its agents, contractors, servants, employees, or any person subject to its control while in, upon or about the sale site and/or the site of the Subject Property during due diligence and before Closing, or while the Subject Property is in the possession of or subject to the control of the Purchaser, its agents, servants or employees after the Subject Property has been removed from the MIDDD's ownership, possession and control.

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12. Default. In the event Purchaser defaults in its obligations to perform any of the covenants and agreements contained herein to be performed by Purchaser after acceptance and within the time for performance as specified herein, then MIDD D may either (i) be entitled to an action for specific performance of the sale and the agreement to purchase the Subject Property expressly provided herein, including the recoupment of actual attorney fees and costs associated with the enforcement of this Agreement, as its sole remedy, or (ii) be entitled to terminate this Agreement.

13. Closing. The closing of this transaction shall take place within seven (7) days of the close of the Due Diligence Period defined in Paragraph 6, at the offices of the MCPW, or at another mutually acceptable location agreed to by the parties (the "Closing"). At Closing, the Purchaser may obtain a title insurance policy at its own expense; however, the MIDD D will have no obligation or responsibility to issue or pay for any title insurance policy at or before Closing.

a. Closing Deliveries. At Closing (or such other times as may be specified below), MIDD D and/or Purchaser, as appropriate, shall deliver or cause to be delivered the following:

- i. Covenant Deed. A Covenant Deed transferring whatever rights, title and interest the MIDD D had in the Subject Property at the time of the sale.
- ii. Closing Statement. A closing statement conforming to the relevant provisions of this Agreement.
- iii. Property Transfer Affidavit. A property transfer affidavit to be submitted by Purchaser to the Chesterfield Township Assessor in accordance with state law.

Purchaser shall be responsible to pay for any and all escrow fees, closing costs and recording fees arising out of the Closing. The Purchaser shall also pay any and all state and local transfer taxes applicable to the transfer of title at Closing, if any.

14. Possession. MIDD D shall deliver possession of the Subject Property to Purchaser at Closing.

15. Headings. The headings of various Sections in this Agreement are for convenience only, and are not to be utilized in construing the content or meaning of the substantive provisions hereof.

16. Governing Law. This Agreement shall be governed by and construed in accordance with the laws of the State of Michigan, without regard to conflicts of law principles.

17. Severability. Whenever possible, each provision of this Agreement and all related documents shall be interpreted in such a manner as to be valid under applicable law but to the extent any provision is invalid or prohibited under applicable law such provision shall be ineffective to the extent of such invalidity or prohibition without invalidating the remainder of such provisions of this Agreement.

18. Assignment. Purchaser shall have no right to assign this Agreement or any of its rights, title or interests without the express written consent of the MIDDD, which may be withheld in its sole discretion, except in the event that Purchaser assigns its rights to an affiliated and/or commonly controlled entity, in which case Purchaser shall not need consent from MIDDD.

19. Counter-Parts/Electronic Signatures. This Agreement may be executed in one or more counter-parts, each of which shall be deemed an original, but all which together can constitute one and the same document. All electronic copies of signatures of this Agreement shall be treated as an original for all purposes.

20. Notices. All notices and other communications hereunder shall be in writing and shall be effective if and when sent by registered or certified U.S. mail or reputable same-day or overnight courier, postage prepaid or otherwise accounted for by sender, and sent to the addresses set forth below (or at such other address for a party as shall be specified in a notice given in accordance with this Agreement):

If to MIDDD: Macomb Interceptor Drain Drainage District
c/o Macomb County Department of Public Works
Attn: Tamara Keskeny, Manager Real Property
21777 Dunham Road
Clinton Township, MI 48036
E-mail: tamara.keskeny@macombgov.org

with copy to: Benjamin J. Aloia, Esq.
Aloia & Associates, P.C.
48 S. Main Street, Ste. 3
Mount Clemens, MI 48043
Email: aloia@aloiaandassociates.com

If to Purchaser: Elizabeth Madson
Library Director
Chesterfield Township Library
50560 Patricia Avenue
Chesterfield, MI 48051
Email: emadson@chelibrary.org

with copy to: David E. Nykanen, Esq.
Friedlaender Nykanen & Rogowski, PLC
40700 Woodward Ave., Suite 302
Bloomfield Hills, MI 48304
Email: dnykanen@fnrplc.com

Either party may, by written notice to the other, change the address to which notices are to be sent. Unless otherwise provided herein, all notices shall be deemed given as provided above, except that a notice of a change of address shall be deemed given when actually received. Seller's affidavit

of the date and time of deposit in a mailbox or with the express mail service or the postmark, whichever is earlier shall constitute evidence of the effective date when the notice has been given.

21. Entire Agreement. This written Agreement, including all Exhibits incorporated herein, embodies the entire understanding between the parties hereto with respect to the subject matter contained herein, and supersedes any and all prior negotiations, discussions, understandings and written or oral agreements among them with respect to the subject matter. The terms of this Agreement are contractual and not merely recital and supersede and control any previous course of dealing or usage of trade. In the event there is any conflict between the terms of this Agreement and the terms of any acknowledgment or other documents relating to this Agreement, the terms of this Agreement shall control. All of the documents attached to this Agreement as Exhibits are hereby integrated into this Agreement, and have been reviewed and approved by each party, and each party acknowledges its consent to sign those documents at Closing.

22. Voluntary and Knowing Ratification and Construction. Each Party acknowledges that it has retained counsel of its own choosing concerning the claims released in this Agreement; that each Party has read and fully understands the terms of this Agreement and/or has had it reviewed and approved by their counsel of choice, with adequate opportunity and time for such review; that this Agreement has been the result of negotiations; and that each Party is fully aware of its contents and of its legal effect. Accordingly, this Agreement will not be construed against any Party because such Party drafted this Agreement. Instead, this Agreement will be interpreted as though drafted equally by all Parties. Each Party enters into this Agreement freely and voluntarily and with a full understanding of its terms. Each Party acknowledges that, except as expressly set forth in this Agreement; no representations of any kind or character have been made to it by the other to induce its execution of this document. Each Party further state that the only representations made to it to obtain its consent to this Agreement is stated in this agreement and that each Party is signing this Agreement voluntarily and without coercion, intimidation, or threat of retaliation.

23. Waiver. The failure of any party to enforce at any time any of the provisions of this Agreement shall in no way be a waiver of such provision or in any way affect the validity of this Agreement or any part of this Agreement or the right of any party thereafter to enforce each and any such provision. No waiver of any breach of this Agreement shall be held to be a waiver of any other breach of this Agreement.

24. Amendment. This Agreement may not be amended, changed or modified in any manner except by an instrument in writing signed by each of the parties hereto and their duly appointed board representatives.

25. Authority. The signatories of each Party below have signed this Agreement with the authority and approval of their respective boards, including the Drain Board for the Macomb County Interceptor Drain Drainage District and the Chesterfield Township Library Board of Trustees. This Agreement shall be binding upon the parties, and their respective Boards, officers, agents, employees, successors and permitted assigns.

26. No Brokers. Purchaser and the MIDD acknowledge that there are no real estate brokers or salespersons representing either Party in this sale. Each Party represents and warrants to the other party that neither party, nor anyone acting on the behalf of either party, has incurred any liability to any broker or finder in connection with the transaction contemplated by this Agreement and each Party agrees to defend and indemnify the other Party against claims of any such broker or anyone claiming by, through or under such Party. These representations, warranties and indemnities shall survive Closing and/or termination of this Agreement for any reason.

IN WITNESS WHEREOF, the Purchaser has executed this Agreement on the date written below,

Macomb Interceptor Drain Drainage District:

Dated: _____, 2018

/s/ _____
By: Candice S. Miller
Its: Chairperson

PURCHASER:

Chesterfield Township Library

Dated: Aug 1, 2018

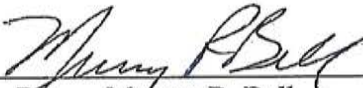
/s/ 
By: Myrney R. Bell
Its: President, Chesterfield Township Library
Board of Trustees

EXHIBIT A

Subject Property Legal Description

Real property situated in the Township of Chesterfield, County of Macomb, State of Michigan, described as follows:

A parcel of land located in and being that part of Lot 11 lying Southerly of South line of 21 Mile Road, except East 245 feet, Supervisor's Plat No. 10, according to the plat thereof as recorded in Liber 18, Page 32 of Plats, Macomb County Records

Commonly known as: Vacant, 21 Mile Road, Chesterfield, Michigan, 48047
Parcel ID No. 09-32-127-033

MACOMB INTERCEPTOR DRAIN DRAINAGE DISTRICT
AGENDA ITEM WORKSHEET

Meeting Date: Monday, July 13, 2018
Name of Project: 15 Mile Interceptor Collapse
Subject Property: 15505 15 Mile Road ("Green Lantern")

Case Synopsis: This is a request for the MIDDD's review and approval of the enclosed Restoration Agreement and Release for a total compensation amount of **\$1,984.00**. The cost is for the replacement of a gate and fence that was removed from the Subject Property.

This agreement resolves all outstanding compensation and restoration claims relating to 15505 15 Mile Road. All totals included in the enclosed Restoration Agreement and Release were previously discussed and recommended for approval by Macomb County Public Work's administration.

Recommendation: Approve the enclosed Restoration Agreement and Release totaling **\$1,984.00**, as a full and final resolution of all claims relating to 15505 15 Mile Road, and authorize Aloia & Associates to proceed to finalize the transaction.

RESTORATION AGREEMENT AND RELEASE

Property Owner: Green Lantern East, LLC, Resident Agent: John Spreitzer ("Property Owner")

Address: 15505 15 Mile Road, ID# 11-30-351-010 ("Subject Property")

The repair and restoration work described above shall be constructed in a workmanlike manner, and in accordance with applicable State, County and City standards, and upon completion, the MIDD and/or its agents shall have no further obligation to repair the Subject Property. The permissive rights set forth herein shall start as of the date the MIDD and/or its contractor commences work on the above project and shall terminate on the date all restoration work is complete on the Project.

The MIDD and the Property Owner both acknowledge that restoration is complete on the Subject Property and all equipment has been removed. The work was completed in a workmanlike manner in accordance with the items listed in **Exhibit A**.

Notwithstanding the foregoing, in lieu of any claim raised by Property Owner related to the Subject Property, the MIDD shall pay Property Owner One Thousand Nine Hundred Eighty-Four and 00/100 Dollars (\$1,984.00), within forty-five (45) days from the date Property Owner signs this Agreement. Upon payment of funds referenced herein, and except as provided in the immediately following paragraph, the Property Owner hereby releases, holds harmless and forever discharges the MIDD, the County of Macomb, the Macomb County Department of Public Works and the Macomb County Department of Public Works Commissioner Candice S. Miller, and their respective predecessors, successors, contractors, employees, engineers, consultants and agents acting by, through or in concert with any of them (collectively "Releasees"), from any and all claims, damages, liabilities, additional repairs, known and unknown, arising out of the Project and accruing prior to the date hereof and related to the Subject Property, whether in law or equity, common law or statute, including but not limited to claims pursuant to MCL 213.1, et. seq., MCL 213.351, et. seq., and MCL 691.1417 through MCL 691.1419. Except as provided in the immediately following paragraph, this Agreement also specifically resolves all claims that the Property Owner had or could have claimed under the Michigan Uniform Condemnation Procedures Act, MCL 213.51, et. seq.

Notwithstanding any, or all, of the foregoing, it is expressly understood and agreed that this Agreement shall not constitute, nor be construed as, a waiver of any alleged claim for lost profits that the Property Owner believes it may have resulting from the Project. Furthermore, but consistent with the all of the provisions of this Agreement, the MIDD does not waive the right to defend or dispute this alleged claim and reserves the right to raise any defenses to this potential claim which may be available in equity and law.

This Agreement constitutes the sole and entire agreement of the parties to this Agreement with respect to the subject matter contained herein, and supersedes all prior and contemporaneous understandings and agreements, both written and oral, with respect to such subject matter.

This Agreement may be executed in counterparts, each of which shall be deemed an original, but

all of which together shall be deemed to be one and the same agreement. This Agreement shall be deemed to be the joint work product of the parties and any rule of construction that a document shall be interpreted or construed against a drafter of such document shall not be applicable. If any provision of this Agreement is held to be unenforceable, invalid, or void to any extent for any reason, that provision will remain in force and effect to the maximum extent allowable, and the enforceability and validity of the remaining provisions of this Agreement will not be affected. This Agreement may only be amended, modified or supplemented by an agreement in writing signed by each party hereto. This Agreement is binding of the Property Owner's heirs, trusts, agents, members, shareholders, successors and assigns.

This Agreement shall be governed and construed in accordance with the laws of the State of Michigan. Any legal suit or action arising out of or based upon this Agreement or restoration work contemplated herein shall be instituted in the courts located in Macomb County, Michigan.

It is expressly understood that this Agreement is a resolution of a disputed claim and is not to be construed as an admission of liability by Releasees under any theory of law or equity, and that liability by the Releasees is expressly denied.

General Terms:

- a. Validity of Agreement: If any provision of this Agreement or the application thereof to any person or circumstances shall be invalid or unenforceable to any extent, the remainder of this Agreement and the application of such provisions to other persons or circumstances shall not be affected thereby and shall be enforced to the greatest extent permitted by law.
- b. Law and Venue: It is the intention of the parties hereto that this Agreement shall be interpreted, construed, and enforced according to the laws of Michigan. Macomb County shall be the exclusive jurisdiction to enforce this Agreement.
- c. No Oral Modification Clause: Neither this Agreement nor any provisions thereof may be changed, waived, discharged, or terminated orally, but only by an instrument in writing signed by all of the parties to this Agreement.
- d. Mutual Drafters: This Agreement has been voluntarily drafted by all parties hereto and all parties have had the opportunity to consult the counsel of their choice. Each party acknowledges that they have read and fully understand the terms of this Agreement and/or reviewed it with their counsel, with adequate opportunity and time to review and edit the Agreement. This Agreement has been a result of negotiations, and each party is fully aware of its contents and its legal effect. This Agreement has been signed by each party voluntarily, without coercion, intimidation or the threat of retaliation.
- e. Entire Agreement: This Agreement embodies the entire understanding of the parties and all of the terms and conditions with respect to the matters discussed in this Agreement; it supersedes and annuls any and all other or former agreements, contracts, promises, or representations, whether written or oral, expressed or implied, made by, for, or on behalf of the parties regarding these matters; and it may not be altered, superseded, or otherwise modified except in writing

signed by all of the signatories to this Agreement. All executed copies of this Agreement are duplicate originals, equally admissible as evidence.

- f. Counterparts: This Agreement may be executed in counterparts, including facsimile signatures or transmissions of signatures in Adobe Acrobat (PDF) format, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.
- g. Authority: The individuals signing this Agreement, on behalf of their respective parties, represent and warrant that they have the authority to sign this Agreement.
- h. Cooperation: All parties agree to cooperate fully and execute any and all supplementary documents and take all additional actions that may be necessary or appropriate to give full force and effect to the basic terms of this Agreement. Time is of the essence in this Agreement.
- i. Waiver: Failure by any party to enforce any of the remedies provided to it in this Agreement will not be deemed a waiver of those rights.

[Signatures on following page]

EXHIBIT A

Property Owner: Green Lantern East, RA: John Spreitzer ("Property Owner")


Address: 15505 15 Mile Road, ID# 11-30-351-010 ("Subject Property")

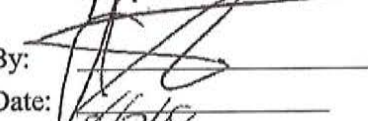
Description of items repaired and/or restored:

1. Kings Forest Condominiums/Green Lantern/Hollywood Plaza – Emergency Access Drive: Private Property. Removed temporary access drive, graded and placed topsoil and seed. Replaced concrete curb & gutter on Kings Forest Boulevard and in Green Lantern parking lot, both adjacent to temporary access drive being removed.
2. The gate that was removed from the back corner of the Property Owner's parking lot shall be replaced by Property Owner.
3. The green belt on 15 Mile Road was repaired and re-seeded.
4. The approach into the Property Owner's parking lot from 15 Mile Road was re-poured up to the sidewalk.
5. Sprinkler irrigation was restored.

IN WITNESS WHEREOF, the Property Owner and the MIDD have executed this Restoration Agreement and Release on the dates indicated below.

Property Owner:

By: 
Date: Thomas J. Spivey
8/7/18

By: 
Date: 8/7/18

Witness:

By: Nicole Rodriguez
Date: 8/7/18

By: Nicole Rodriguez
Date: _____

MACOMB INTERCEPTOR DRAIN
DRAINAGE DISTRICT

Witness:

By: Candice S. Miller
Its: Authorized Board Member and
Macomb County Public Works Commissioner

Date: _____

By: _____

Date: _____



Candice S. Miller

Public Works Commissioner
Macomb County

TO: MIDDD Board
FROM: Candice S. Miller, Board Chairperson
RE: Retention of Dr. Gary Brierley
DATE: August 7, 2018

As you are aware, we have retained the engineering firm Hubbell, Roth & Clark, Inc. ("HRC") to complete a SAW study and to make recommendations for future maintenance of the MIDDD system. HRC's report is not completed, but it has indicated that its recommendations will entail a major, long-term financial commitment by the MIDDD and its ratepayers.

Before adopting HRC's recommendation and committing to a course of action, I believe it is strongly advisable, as a matter of due diligence, that we obtain a second opinion. I am recommending to the board that we engage Gary Brierley, Ph.D, P.E. He is one of the foremost experts in the world on underground tunnel systems. Dr. Brierley's extensive and very impressive resume is attached.

Dr. Brierley has recommended that he form a small committee of experts, including two of our county engineers, to study the system and to make a recommendation. He believes there is a good possibility the MIDDD can realize substantial savings without sacrificing quality or results. Once his committee has a consensus recommendation, Dr. Brierley would submit the recommendation for peer review by HRC. Dr. Brierley has requested a budget of \$100,000 for his committee's work, which he believes could be completed in approximately 60 days. With the potential cost of rehabilitating our system, this is a small price to pay to make sure we have fully studied all available options and are making the best decision for our ratepayers.

Dr. Brierley has recommended that, if he devises an alternative rehabilitation method that we would like to explore, we start with a test section, which could be carefully reviewed and studied before we committed to broader implementation. If we reach this step, Dr. Brierley will propose a budget for the test section, and the Board can determine whether to proceed at that time. We also may simply decide to proceed with HRC's recommendations, after studying all of our options.

I am recommending and requesting that the Board approve the engagement of Dr. Brierley. I have attached a proposed contract for services that has been prepared by our legal counsel.

ENGAGEMENT AGREEMENT

This Engagement Agreement ("Agreement") is entered into effective August 8, 2018 between the **Macomb Interceptor Drain Drainage District**, a Michigan body corporate and drainage district formed under Chapter 20 of the Drain Code of 1956, with its principal place of business at 21777 Dunham Road, Clinton Township, Michigan 48036 ("CLIENT") and **Doctor Mole Incorporated**, a Colorado corporation with a principal place of business at 990 S. Broadway, Suite 222, Denver, Colorado 80209 ("DR. MOLE").

- A. CLIENT owns and operates a sewer interceptor system known as the Macomb Interceptor Drain (the "MID").
- B. CLIENT is currently studying long-term rehabilitation options for the MID and is in the process of obtaining a recommendation from the firm of Hubbell, Roth & Clark, Inc. ("HRC").
- C. DR. MOLE is a consulting firm with substantial expertise in underground tunnel systems and rehabilitation projects.
- D. CLIENT is engaging DR. MOLE to conduct a professional review of the HRC recommendation and to explore and to make recommendations regarding available alternative rehabilitation methods.

WHEREFORE, CLIENT and DR. MOLE agree as follows:

- 1. **Scope of Services.** CLIENT has engaged DR. MOLE to:
 - a. Conduct a professional review of the HRC recommendation;
 - b. Form a committee, the composition of which shall be determined by DR. MOLE, to study the HRC recommendation and the MID system and to make recommendations regarding rehabilitation of the MID system.
 - i. The committee shall include one or more owner representative(s).
 - ii. The committee members, other than the owner representative(s), will be subcontractors of DR. MOLE.
- 2. **Payment Terms.**
 - a. DR. MOLE will invoice CLIENT for its services, including any amounts due to its subcontractors. DR. MOLE will be responsible for paying its subcontractors.
 - b. CLIENT shall pay DR. MOLE according to the following rate schedule:
 - i. \$250 per hour for work performed by DR. MOLE.

- ii. \$195 per hour for work performed by subcontractor Todd Kilduff.
 - iii. Between \$165 per hour to \$240 per hour for work performed by subcontractor Brierley Associates.
 - c. The total cost of DR. MOLE's services hereunder, including expenses and subcontractor costs, shall not exceed One Hundred Thousand Dollars (\$100,000) without further written approval of the MIDDD.
 - d. CLIENT shall reimburse DR. MOLE for reasonable out-of-pocket expenses that are related to the performance of DR. MOLE's services hereunder.
 - e. DR. MOLE shall submit monthly invoices to CLIENT.
3. **Termination.** CLIENT may terminate this Agreement at any time and for any reason, by providing written notice to DR. MOLE. In the event of termination, CLIENT shall pay DR. MOLE for services rendered prior to DR. MOLE's receipt of the notice of termination.
4. **Standard of Care.** DR. MOLE shall perform all services rendered under this Agreement in a prompt and professional manner, with the care and skill ordinarily used by members of the subject profession practicing under similar circumstances.
5. **Miscellaneous.**
- a. This Agreement and each of its provisions may not be amended, modified, waived, or assigned in the absence of a written instrument executed by both parties.
 - b. This Agreement constitutes the final and entire agreement between the parties relating to the subject matter hereof and supersedes all prior oral or written agreements of any kind related to the subject matter hereof.
 - c. This Agreement shall be construed and governed in accordance with the law of the State of Michigan, without regard to conflict of law provisions. The parties consent to the jurisdiction of the State and Federal courts of the State of Michigan for any dispute arising out of or in any way connected with this Agreement.
 - d. This Agreement may be executed in counterparts. An executed facsimile or copy of this Agreement shall be effective as an original.

[SIGNATURES ON FOLLOWING PAGE]

CLIENT:

MACOMB INTERCEPTOR DRAIN DRAINAGE DISTRICT

By: _____

Candice S. Miller

Its: Board Chairperson

DR. MOLE:

DR. MOLE INCORPORATED

By:  _____

Dr. Gary Brierley

Its: President

Dated: August 8, 2018

Doctor Mole Incorporated
990 S. Broadway, Suite 222
Denver, CO 80209
gbrierley@drmoleinc.com
303.797.1728

GARY BRIERLEY, PH.D., P.E.

PRESIDENT

Dr. Brierley has more than 48 years of experience with both the technical and nontechnical aspects of underground engineering and construction management. From the technical perspective, Dr. Brierley began his career with the Bachelor of Science degree in Engineering from Tufts University in 1968 and the Master's and Doctor's degrees from the University of Illinois in 1970 and 1975, respectively. Beginning as a project manager in 1970, Dr. Brierley has worked on literally hundreds of projects involving all types of underground design and construction including soil and rock engineering, building foundations, braced excavations, ground improvement and slope stability. Beginning in the 1970's, Dr. Brierley concentrated on the design and construction of underground projects by managing the instrumentation program for Dupont Circle Subway Station in Washington, D.C. This assignment formed the basis for his doctoral dissertation which addressed the structural performance of large, shallow underground openings in rock. Since that time he has worked on more than 500 major soil and rock tunneling projects involving design, construction management and consultation for owners, contractors, engineers, public agencies, and attorneys.

Dr. Brierley has taught at the Universities of Illinois, Rochester, Colorado at Denver and the Colorado School of Mines. He has lectured extensively on tunnel design and construction, subsurface investigations, rock mechanics, blasting vibrations, foundation design, and the non-technical aspects of professional practice at numerous colleges and professional meetings. He is the author of more than 100 professional papers and is active in many professional societies.

From the nontechnical perspective, Dr. Brierley is expert in all aspects of office management, project management and business development.

- President, Doctor Mole Incorporated (2013 – Present)
- President, Brierley Associates, LLC | Denver, CO (1999 – 2012)
- Chairman, Expert Witness & Ethics Committee, ACEC | Denver, CO (2011-present)
- Director of Tunnel Design and Sr. Vice President, Haley & Aldrich, Inc. | Boston, MA (1991 to 1999)
- President, Brierley & Lyman, Inc. | Denver, CO (1987 to 1991)
- Vice President of Tunneling and Underground Construction, CRS Serrine | Houston, TX (1984 to 1987)
- Manager, Geotechnical Division of Stone & Webster Engineering | Denver, CO (1981 to 1984)
- Office Manager and Vice President, Haley & Aldrich of New York | Rochester, NY (1975 to 1981)
- Project Engineer, Haley & Aldrich, Cambridge, MA (1970-1975)



Education

Ph.D., Civil Engineering, University of Illinois, 1975
M.S., Civil Engineering, University of Illinois, 1970
B.S., Civil Engineering, Tufts University, 1968

Professional Registrations

Professional Registrations

CO, FL, MA, NY, TX, NCEES

Inactive/Previously Registered

AL, AK, CT, GA, ID, IN, KS, KY, LA, ME, MI, MD, MN, NH, NJ, OR, OK, PN, RI, SC, VT, VA, WA, WV, WI, DC

Professional Societies

American Counsel of Engineering Companies
American Society of Civil Engineers
Former President, American Underground Construction Assoc.
Former Chairman, Underground Technology Research Council
Former Member, U.S. National Committee on Tunneling Technology
Society of Mining Engineers
International Tunneling Association

Honorary Societies/Awards

Distinguished Alumni Award 2014 – University of Illinois

Geotechnical Award, Boston Society of Civil Engineering ACEC 1974, 1975 and 1976

National Science Foundation





REPRESENTATIVE PROJECT EXPERIENCE

SFPUC – Mountain Tunnel Advisory Committee, San Francisco, CA

Dr. Brierley is serving on the Technical Advisory Panel (TAP) for the Mountain Tunnel. Under contract with the San Francisco Public Utilities Commission (SFPUC). The 22-mile long Mountain Tunnel was constructed in the 1920's as part of the City of San Francisco's water supply facilities. Over time the tunnel's cast-in-place concrete lining has undergone significant deterioration which when combined with possible seismic impacts has caused serious concerns about lining stability. As required by SFPUC the TAP is assisting with the evaluation of a variety of options for the rehabilitating the tunnel.

Crystal Springs Bypass Pipeline, San Francisco Bay Area, CA

The San Francisco Public Utilities Commission replaced the existing Crystal Springs Bypass Pipeline with at 4,500-foot long by 15-foot diameter New Crystal Springs Bypass Tunnel. The purpose of the new tunnel is to improve the long-term reliability of the water transmission system in the service area. Technical challenges included tunneling through the difficult rock of the Franciscan formation, a highly disrupted mass of rocks, large and small, embedded in a crushed, fine-grained material. The sheared and crushed material of the mélange is weak and easily eroded, while, at the same time, large outcroppings of quite-resistant rock masses are common. Further complicating tunneling, the alignment lies in a seismically active area, and crosses the San Andreas Fault. Abetting the technical difficulties, the project involved complex socio-environmental environmental issues in the design studies. In addition to the tunnel, this project included two deep shafts. The North Shaft is located in an area of limited surficial access requiring a complicated sequence of construction activities for making the required connections at the ground surface. This shaft was excavated to 18-feet in diameter and to a depth of 80-feet. While President of Brierley Associates, Gary Brierley served as Project Manager overseeing a team tasked with providing the lead engineer, tunnel design, geotechnical characterization, and specification and submittal review.

SR99, Alaska Way, Seattle, WA

Dr. Brierley served on an expert panel and reported to HNTB who served as the designer for this extremely innovative and technically challenging project. HNTB's responsibilities included all design-related activities such as lining design, protection of adjacent structures, ventilation, portal cuts and structures and numerous additional responsibilities.

The Caldecott Tunnel 4th Bore, Oakland, CA

Dr. Brierley served as Partner-In-Charge for Brierley Associates (BA) work on the Fourth Bore of Caldecott. BA served as field engineer for Tutor Perini on this project and was responsible for evaluating all ground support requirements based on extensive geological field mapping and the evaluation of instrumentation readings. BA's work on this project was highly successful, contributing to the project being completed ahead of schedule and below budget.

Tren Urbano, DMJM, Puerto Rico

Dr. Brierley served for more than five years on the Geotechnical Consulting Board for the underground related portions of the Tren Urbano Project in San Juan, Puerto Rico. Dr. Brierley participated in all aspects of planning, design and geotechnical engineering for the Rio Piedras segment. Dr. Brierley also helped with design consultation for the proposed Minillas extension. Probably the most interesting aspect of this project is the fact that all work was procured under a design/build contracting under which is rarely done in the United States for underground construction projects in urban areas. In addition, the tunnels and lift station were constructed beneath more than 100 existing structures.

Contract A-146 and A-171, Metro Rail, Los Angeles, CA

Assisted Shank-Qhbayashi with the instrumentation programs for Metro Rail Project tunnel contracts A-146 and A-171. The tunnels are part of a subway system in downtown Los Angeles. The twin, 18.5 ft. finished diameter tunnels for contract A-



146 will be driven for 2,000 ft. in soft ground and will pass directly beneath several major downtown buildings. The twin, 18.5 ft. finished diameter by 4,950 ft.-long tunnels for contract A-171 will be driven in siltstone beneath city streets. Instrumentation was used to monitor ground movements in response to tunneling, and to observe the results of construction activities, especially compaction grouting work for contract A-146. Compaction grouting was required by project designers to minimize the potential for building foundation settlement.

Dulles International Airport, HNTB, Alexandria, VA

Perform design services for the fixed facilities of a proposed Automated People Mover System. Design work includes running tunnels and station shells; mechanical and electrical fit-out of the tunnels; a new tunnel for United Airlines' proposed baggage conveyor system; tunnels for baggage tugs, the East Utility Tunnel and the APM Vehicle Maintenance Facility, as well as full ventilation and fire life safety systems for all the tunnels. This assignment includes Schematic Design through Detailed Design, resulting in several complete construction packages.

L.A. Metro, Red Line Extension, Los Angeles, CA

Dr. Brierley served as a member of the Performance Improvement Team for the Red Line Extension in Los Angeles, CA. The team evaluated many design, construction, cost and scheduling concepts for the work in an effort to reduce cost and streamline production. The team also evaluated waterproofing concepts for the stations and the technical feasibility of building some stations in critical areas by mining methods rather than by cut-and-cover. Many of the suggestions made by the team were incorporated into the program.

Muni Turnback Project, San Francisco, CA

The Muni Metro Turnback project links five existing Muni Metro lines to surface tracks at the newly completed South Embarcadero Roadway and the Muni Metro extension. The new 18 ft. diameter twin steel tunnels allow for the underground switching and storage of vehicles. The 840 ft. long Muni Metro tunnels cross above existing BART tunnels below Market Street at a separation of 11 ft., where they continue above the BART tunnels to the Spear Street shaft. While advancing the tunnels in December 1994, the wooden hull of a buried mid-19th century ship was encountered. Tunneling started on October 1, 1994 and proceeded with full face breasting and excavation with pneumatic spade on a 24-hour per day, six day operation/one-day maintenance schedule per week. The first shield was assembled in the shaft. After breakthrough, the shield skin was left in place. Resident Tunnel Engineering Services were provided to the construction management team for the project. The Resident Tunnel Engineer reported directly to the Construction Manager and was responsible for monitoring the tunneling and instrumentation portions of the work.

NORS Tunnel Project Claims Assistance, Los Angeles, CA

Expert technical assistance and witness before disputes review board for resolution of claims of approximately \$3 million arising from construction of a 13 mile long sewer tunnel. Services included a two day presentation to the disputes review board that included the formal presentation of results of analyses, rebuttals to the contractor's presentation and questions and answers to inquiries from the board.

Lake Merced Tunnel, San Francisco, CA

Brierley personnel provided construction management and resident engineering services during construction of 8,500 ft. of combined sewer and stormwater overflow tunnel. A large, 18 ft. diameter open-face shield was used to excavate through sandy alluvium, below the water table. The project included a major dewatering effort consisting of over 80 wells along its length, jacking of a sewer pipe feeder, construction of a transition structure, and a 72-in. diameter pipe installed in a hand



mined adit. Responsibilities included processing of submittals, change orders, and progress payments; monitoring of construction activities; and monitoring of instrumentation and dewatering programs.

Saavadra – Moron Water Supply Project, Underground Construction Mangers, Buenos Aires, Argentina.

Project involved the evaluation of tunneling conditions for the Saavadra-Moron Water Supply Project. This project consists of 15,000 meters of 3.5 – meter – diameter tunnel being excavated using a Herrenknecht earth-pressure-balance TBM. The Saavedra-Moron tunnel is part of major overhaul of all water supply and waste water removal facilities for the city of Buenos Aires.

Brushy Creek Interceptor, Round Rock, TX

Brushy Creek Regional Interceptor consists of approximately 7,000 feet of 110-inch initial diameter machine bored tunnel. The tunnel was constructed in stiff, expansive clay and a competent limestone. A complex fault zone marking the contact between the two formations was crossed. Project involved the design of the tunnel alignment and grade as well as performing the geotechnical evaluation, preparation of the Geotechnical Baseline Report, assistance in preparation of the contract specifications, and preparation of the initial tunnel support design. Construction Management services were also provided during project construction.

Chattahoochee Tunnel, Jordan, Jones & Goulding, Inc., Cobb County, GA

The Chattahoochee Tunnel is a rock tunnel approximately 49,600 ft. in length with a finished diameter of 16 ft and approximately 825 ft long spur tunnel in rock with a finished diameter of 8 ft. The tunnel will store and convey wastewater. The tunnel will be approximately 120 ft to 350 ft below ground. The project also includes two construction shafts with finished diameters of 30 ft which will be sunk utilizing drill and blasting techniques in rock. Project involved the assistance in preparation of geotechnical data and baseline reports for this project.

Combined Sewer Overflow Program, Rochester, NY

General geotechnical consultant and assistance with design of 22 miles of combined sewer overflow tunnels in Rochester, New York. Project began with a system-wide evaluation of subsurface conditions prior to final location of tunnels. Drilling program including the drilling and logging of 35,000 lineal feet of core in less than six months. Dr. Brierley served as officer-in-charge for the work.

El Salaam Syphon Tunnels, Cairo, Egypt

Served on a value engineering team to evaluate the tunneling options. The project involved four 5.1 m diameter siphon tunnels traversing beneath the Suez Canal which provide water from the Nile River and drainage water to irrigate North Sinai. Primary issues included selection of the tunnel boring machine, third party impacts associated with tunneling under the Suez Canal and layout considerations for the inlet and outlet connections.

Grand and Bates Storm Sewer Relief, St. Louis, MO

The Grand and Bates Storm Sewer Relief Tunnel consists of approximately 6,550 linear feet of tunnel to provide storm water drainage relief in the Grand Glaise Sewer District in the City of St. Louis. The project has three access shafts and eight smaller diameter shafts for manholes to allow for discharge of new or existing local storm sewers into the tunnel. The alignment runs beneath a residential neighborhood located in the south of the city and also includes construction of approximately 5,000 feet of storm sewer laterals in the adjacent neighborhoods. Project involved the preparation of construction specifications and drawings for sewers and drainage facilities and wrote the Geotechnical Baseline Report. In addition, Brierley provided designs for shaft initial support, including jet grouting columns complete with vibrating wire



strain gauges to monitor stresses. Project involved high level oversight to ensure that the work was implemented in an appropriate manner as described by the contract document and to avoid negative impacts to third parties.

Islais Creek Transport, San Francisco, CA

Islais Creek Contract E is a 1,100 ft. long combined sewer and stormwater transport/storage structure that consists of a 250 ft. long 10'-6" diameter tunnel, a 500 ft long 12'-0" diameter tunnel, and 350 ft. of cast-in-place concrete box culvert constructed within soldier pile tremie concrete (SPTC) walls. The tunnels were designed to be driven under compressed air. After award, the contractor submitted a value engineering proposal to use jet grouting as an alternative to compressed air for tunnel construction, which was accepted. Brierley personnel provided resident engineering, construction management and contract administration services on this project and Dr. Brierley served as officer-in-charge.

Manapouri Tunnel, Fletcher Dillingham Construction, New Zealand.

The Manapouri hydro-electric power station is the largest of its kind in New Zealand. It was designed with a capacity of 700 MW and built by drill and blast. However, on account of a greater than expected surface roughness of the tailrace tunnel it only achieved 580 MW. In order to secure the power supply for New Zealand's South Island, the plant's capacity is to be increased to 760 MW and a second tailrace with a length of 9,750 m with a 10m diameter constructed for this purpose. Dr. Brierley provided consultation services on this project.

Minneapolis Tunnel, Minneapolis, MN

The MSP LRT tunnel and Stations Project consists of the construction of 1,280-feet of retained cut, 920-feet of cut-and-cover tunnel, and 7,120-feet of mined and/or bored tunnel(s), all to accommodate a north-and south-bound LRT line. The project also included construction of an underground LRT station to be located near the Lindberg Terminal and an at-grade LRT station to be located near the Hubert H. Humphrey Terminal. Project involved review of design concepts and partially completed construction drawings, and the evaluation of means and methods of construction, the feasibility of tunneling methods, and estimation of construction costs and schedule.

Papago Freeway Drainage Tunnels, Phoenix, AZ

During construction of storm drainage tunnels under Phoenix, Dr. Brierley oversaw the provision of geotechnical engineering, compaction and chemical grouting design, construction administration, and tunnel inspection services for the Arizona Department of Transportation. The project consisted of 27,000 feet of 21 foot finished diameter tunnel and 6,650 feet of 14 ft. finished diameter tunnel driven through loose river run gravels. The purpose of the tunnels is to move water from a depression in the Papago Freeway to the Salt River.

Richmond Transport, San Francisco, CA

The project consists of a 10,200 ft. long by 14 ft. diameter sewer tunnel located in the Richmond-Seacliff-Lobos Creek area of San Francisco. The tunnel was driven through 9,000 ft. of hard rock, 1,200 ft. of sand below the water table and a transition zone of mixed face conditions. The hard rock section has been designed for excavation by a shielded tunnel boring machine (TBM). The project also includes excavation of incline and decline tunnels and an underground chamber using drill/blast methods, rehabilitation of a portion of the existing Mile Rock Tunnel and construction of the 24th Avenue Connector Tunnel. Dr. Brierley served as officer-in-charge for the work for the contractor. The Construction Management Teams' duties included resident engineering; field and office engineering; cost estimating and construction scheduling; processing of contractor submittals, change orders and contractor progress payment; monitoring of construction activities, geotechnical instrumentation and construction dewatering; and environmental compliance monitoring.

Scajacquada Tunnel Interceptor, Buffalo, NY

Six miles of combined sewer tunnel. Subsurface problems included low rock cover, poisonous gas, high water flows, highly stressed rock, and highly abrasive chert deposits. Consultation services included subsurface investigations and assistance with design, construction and the resolution of contractor claims.

South Austin Regional Wastewater Treatment Plant, Austin, TX

The Lift Station Interconnect Tunnel Project, part of a plan to expand and improve the South Austin Regional Wastewater Treatment Plant, consists of two tunnels and associated access shafts, the first of which is a 1,270 foot long, 60 inch diameter conduit that will allow water to flow between two lift stations, and the second is approximately 526 feet long with a finished diameter of 60 inches. Project involved preparation of the GBR, assistance with the preparation of other contract documents, and on-site technical support during tunnel construction.

South Interceptor, Montreal, Quebec

The South Interceptor project in Montreal consists of more than 30 miles of tunnels varying in diameter from 8 to 18 ft. For three of the contracts, many areas of bad rock, soil, and mixed face tunneling conditions were encountered. In one mixed-face area the tunnel was constructed with a shield using air pressure. In other areas the tunnels were advanced by drilling and blasting and by tunnel boring machine, with and without pre-grouting. Dr. Brierley served as Consultant to the Montreal Urban Community throughout the entire six yearlong planning, design, and construction period.

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- Pressurized Face Tunneling, Tunnel Business Magazine, September 2015
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- "Roles in Design/Build Subsurface Construction", with Russ Jernigan, August 2005.
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- "Geotechnical Report Preparation" with Dan Dobbels and Alan Howard. Proceedings of NAT 2000, Boston, MA, June 2000.
- "Ground Improvement On The Central Artery Project – Examples of Innovative Applications" with James R. Lambrechts and Andrew F. McKown, Proceedings of the 1999 Rapid Excavation and Tunneling Conference, Orlando, FL, June 1999.
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- "Subsurfing USA" World Tunneling, March 1998.
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- "Underground Transit Systems - Tunnel or Cut and Cover," with Ronald D. Drake, The Urban Transport Industries Report, 1993.
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- "Construction of the MUC Outfall Tunnels: Conventional vs. TBM Tunneling Technologies, Montreal, Canada," with Alan L. Howard and Jean Moreau, Proceedings of the International Congress Towards New Worlds in Tunneling, Acapulco, May 1992.
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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: August 6, 2018

Subject: Wastewater Master Plan Change Order No. 2

In recent discussions with the City of St. Clair Shores, it has come to my attention that they are proposing a sewer separation plan that includes construction of a new outlet storm sewer for the combined sewer areas tributary to the Martin Drain. The proposed sewer separation plan will directly affect the combined sewer flow that enters the Martin Retention Treatment Basin (RTB) that is operated by the Macomb County Public Works Office (MCPWO).

As you are aware, the MCPWO is currently under contract with Fishbeck, Thompson, Carr & Huber, Inc. (FTCH), where FTCH is preparing a Wastewater Master Plan (WWMP) for the Southeast Macomb entities. Since the proposed sewer separation in St. Clair Shores has the potential to impact the conclusion of the WWMP, it was recommended that a study of the separation impacts be done prior to any separation. This \$100,000 study will be paid for through the Lake St. Clair Clean Water Initiative, as there are funds available and it directly impacts St. Clair Shores and Roseville.

Since the FTCH team is currently looking at all options for this region, it is recommended that this study be performed by the FTCH team. This will ensure that the masterplan has one concise vision that is feasible through all parties. The FTCH team is currently looking at various community needs and community projects, including St. Clair Shores. Much of the same information will also need to be looked at in the sewer separation study. Since there will be some overlap in these efforts, there is a potential cost savings.

I am recommending that the proposed changes are made to the FTCH WWMP contract through change order 2, creating a Task 3 in the contract for St. Clair Shores sewer separation study. Since MIDDD is overseeing both tasks of the contract (MIDDD and SEMSD) the final approval will need to come from the MIDDD board. The project NTE total for Task 3 – St. Clair Shores sewer separation study is \$100,000. No changes are being made to Task 1 – MIDDD or Task 2 – SEMSD as part of this change order.

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

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

SEMSD WWMP Authorization for Additional Services

Date: 8/3/18

Project: Martin Drain Sewer Separation Study and Schematic Design
Project Number 18-007B

Understanding the Additional Services

On July 24, 2018 we were requested by the Macomb County Public Works Office (MCPWO) to provide the cost of engineering services for a study and conceptual design to construct an outlet storm sewer for the combined sewer areas tributary to the Martin Drain.

The Martin Drain flows from west to east through the cities of Roseville and St. Clair Shores along Frazho Road and Bon Heur Street and conveys sanitary and combined sewer flows. At Jefferson Avenue the Martin Drain connects to the Jefferson Interceptor and flows south, ultimately to the Great Lake Water Authority Water Resource Recovery Facility (WRRF) in Detroit.

During wet weather events when flows exceeds the capacity of the sewer infrastructure and/or the contract capacity of 102 cfs at Marter Road Booster Station the wet weather flow is diverted to the Martin Retention Treatment Basin (RTB). During certain larger wet weather events, flow from the Martin RTB is discharged into Lake St. Clair under NPDES Permit MI0025453.

Attached is the Sanitary/Combined Sewer Drainage District Map for the Martin Drain, dated January 2013. This map details the known combined sewer areas tributary to the Martin Drain. In summary there is approximately 543.5 acres of combined sewer area in the City of Roseville and 206.8 acres of combined sewer area in the City of St. Clair Shores. In total this District has approximately 750.3 acres of combined sewer area. It is also noted that most of the foundation footing drains in the City of Roseville and St. Clair Shores are connected to the sanitary sewer. Separation of footing drains is not part of this project.

The scope of this project is to develop a study and conceptual design to provide a storm sewer outlet for the combined sewer areas tributary to the Martin Drain. Per our discussion with MCPWO and Mayor Wahby of St. Clair Shores the future separation of the local sewers would be completed by each community, when determined appropriate. This study and conceptual design would only provide a storm sewer outlet for future local city storm sewer connections.

Description of Service (Limited)

As part of this project we would complete the following services.

1. Meet with the Michigan Department of Environmental Quality (MDEQ) to go over the concept of the project to determine potential impacts to the existing NPDES permit for the Martin Drain and discuss requirements for a new storm water discharge to Lake St. Clair.
2. Review the existing GIS, local storm sewer plans and County Drain maps to confirm the delineated combined sewer areas detailed in the January 2013 Combined Sewer District Map.



3. As part of the SAW Grant, hydraulic models are being developed for the 11 ½ Mile Relief Drain and Stephens Relief Drain. We will evaluate these models to determine if any additional capacity may be present within these County Drains. If capacity is available, we will utilize these existing County Drains to collect some or all of the separated storm flow within the Martin Drain District.
4. Survey the rims and inverts of existing catch basins at critical tie in and outlet locations to assist with the conceptual design.
5. Research existing utilities and field survey invert elevations of water main, storm sewer, sanitary sewer and other found utilizes to determine conflicts along the route of the proposed storm sewer(s).
6. Complete a conceptual design of the proposed storm sewer(s) to collect drainage from the known combined sewer areas. The conceptual design would be developed in XPSWMM using the 10-year storm and include a plan showing the storm sewer district and sub district areas, pipe sizing, invert grades, existing known utilities, manhole locations, connection locations to future separated storm sewers and the outlet connections to Lake St. Clair. Additionally, a profile of the proposed storm sewer would be included, showing the proposed storm sewer inverts, sizes, slopes, manholes, existing known utility crossings and outlet connection to Lake St. Clair.
7. Coordinate the conceptual design and study with the MDEQ and determine the impacts on the NPDES permit for the Martin RTB.
8. Complete a report documenting the findings of the selected conceptual design. This report would describe the options considered, requirements of the MDEQ, summary of the recommended alternative and justification for the selection, engineer estimates of potential engineering and construction costs, summary of the hydraulic analysis, evaluation of the impacts to sewer treatment expenses as a result of the proposed separation, modifications necessary at the Martin RTB to treat the higher concentrated sanitary flows and a final recommendation for the separation of the Martin Drain.

Estimated Breakdown of Cost of Services

Project Communication & Coordination with County/MDEQ	\$10,000
Confirm Existing Martin Combined Sewer Areas	\$10,000
Capacity Analysis on Existing County Drains.....	\$15,000
Utility Research and Field Survey	\$15,000
Conceptual Design and Profiles.....	\$30,000
Final Report.....	\$20,000
Total Estimated Cost of Additional Services	\$100,000

NOTE: Actual charges may differ from this estimate. Actual charges will be based upon time and individual charge rates required to complete the task(s).



Maria Sedki, PE



Kyle M. Seidel, PE, CFM

MACOMB INTERCEPTOR DRAIN - 8/13/18

<u>Funding Source</u>	<u>Apportionment</u>	<u>Manager</u>	<u>Vendor</u>	<u>Amount</u>	<u>Invoice Detail</u>	<u>Project Summary</u>	<u>Project Balance</u>
Macomb Interceptor Drain	Chapter 20 Chesterfield - 6.9899% Clinton - 20.9164% Fraser - 4.1343% Harrison - 5.9902% Lenox - 8610% Macomb - 14.5180% New Haven - .8150% Shelby - 9.9241% Sterling Heights - 31.2761% Utica - 1.7244% Washington - 2.8507%	Astorino	Anderson, Eckstein & Westrick, Inc.	\$ 1,402.00	Invoice #0118461 - 7/17/18 Engineering Services - 5/28/18 - 6/24/18	Dropshaft & Connecting Sewer Rehab	\$ 295,598.00
		Astorino	The ASU Group	\$ 1,500.00	Invoice #MD00132909 - 7/31/18	Annual Administration Fee - Liability Insurance	
		Astorino	Evans Barrios	\$ 1,993.15	WEFTEC Conference - 9/29/18 - 10/3/18	Reimbursement	
		Astorino	Doetsch Environmental Services	\$ 2,500.00	Invoice #70248 - 7/31/18	Sewer Investigation - Washington Flow Meter	
		Astorino	DTN, LLC	\$ 706.12	Invoice #5373666 - 7/20/18	Storm Sentry Subscription	
		Astorino	Fishbeck, Thompson, Carr & Huber, Inc.	\$ 2,338.30	Invoice #375612 - 6/25/18 Engineering Services - ending 6/15/18	GLWA Assistance	
		Astorino	Fishbeck, Thompson, Carr & Huber, Inc.	\$ 1,416.00	Invoice #375620 - 6/25/18 Engineering Services - ending 6/15/18	As-needed Engineering Services	\$ 40,024.10
		Astorino	Fishbeck, Thompson, Carr & Huber, Inc.	\$ 4,900.50	Invoice #376260 - 7/23/18 Engineering Services - ending 7/13/18	GLWA Assistance	
		Astorino	FK Engineering Associates	\$ 35,230.77	Invoice #17-134-005 - 7/13/18 Engineering Services - 5/1/18 - 6/30/18	As-needed Geotechnical Services - Grouting & Clinton Township	\$ 23,629.03
		Astorino	Hubbell, Roth & Clark, Inc.	\$ 9,470.87	Invoice #0162402 - 7/13/18 Engineering Services - ending 6/30/18	MID Condition Assessment Task A	\$ 599,742.40
		Astorino	Johnson & Anderson	\$ 2,875.00	Invoice #41882 - 7/11/18 Engineering Services - ending 6/30/18	Conversion of MCMARS to Bluewater	\$ 19,550.00
		Astorino	Macomb County	\$ 28,098.00	Invoice #AR180541 - 7/17/18	Property Insurance Premium	
		Astorino	Macomb County	\$ 351,716.24	Invoice #AR180542 - 7/17/18	2nd Quarter Reimbursement - Personnel & Operating Expenses	
		Astorino	Macomb County Dept. of Roads	\$ 621.86	Invoice #301030 - 6/30/18	Fuel	
		Astorino	Motor City Electric Technologies	\$ 35,847.20	Invoice #91912 - 6/13/18	Maintenance Contracts & Upgraded License Files	
		Astorino	Motor City Electric Technologies	\$ 2,105.34	Invoice #91924 - 5/31/18	Procured, Configured and Installed Ruggedized WiFi Access Point	
		Astorino	Motor City Electric Technologies	\$ 842.38	Invoice #91946 - 7/11/18	SonicWall Renewal	
		Astorino	Mount Clemens	\$ 16,883.88	Invoice #12610 - 6/30/18	Sewage Flow Billing - 5/26/18 - 6/22/18	

MACOMB INTERCEPTOR DRAIN - 8/13/18

Funding Source Administration (Cont'd)	Apportionment	Manager	Vendor	Amount	Invoice Detail	Project Summary	Project Balance
		Astorino	NEXGEN Utility Management	\$ 2,500.00	Invoice #2017 - 7/1/18	NEXGEN AM License Maintenance & Support	
		Astorino	Sprint	\$ 887.96	Invoice #578736375-081 - 6/27/18	Monthly Cell - 5/24/18 - 6/23/18	
		Astorino	Sprint	\$ 804.86	Invoice #578736375-082 - 7/27/18	Monthly Cell - 6/24/18 - 7/23/18	
		Astorino	Viviano Law	\$ 2,147.00	Invoice #19926 - 7/3/18 Legal Services - ending 6/30/18	General Matters	
		Astorino	Viviano Law	\$ 1,261.80	Invoice #19929 - 7/3/18 Legal Services - ending 6/30/18	MIDDD vs. Sterling Heights	
		Astorino	Viviano Law	\$ 7,890.30	Invoice #19930 - 7/3/18 Legal Services - ending 6/30/18	General Matters	
		Astorino	Wade Trim	\$ 1,610.00	Invoice #2012195 - 7/31/18 Engineering Services - 5/27/18 - 7/29/18	As-needed Engineering Services - NGI Pumps & Gates	\$ 64,286.25
Biofilter		Astorino	CH2M Hill Engineers, Inc.	\$ 2,221.87	Invoice #381152751 - 7/19/18 Engineering Services - 4/28/18 - 5/25/18	Fraser Biofilter Improvements	\$ 40,457.85
		Astorino	DE-CAL, Inc.	\$ 1,295.00	Invoice #WO18000851 - 6/29/18	Preventative Maintenance on HVAC	
		Astorino	Motor City Electric Technologies	\$ 1,602.00	Invoice #91914 - 5/16/18	Configured OPF, added Biofilter VLAN to Somicwall	
Clintondale P.S.		Astorino	Charter Township of Clinton	\$ 2,742.20	Monthly Water - 5/22/18 - 6/26/18	Repairs to Emergency Lighting	
		Astorino	Cintas	\$ 595.24	Invoice #OD26558908 - 6/26/18	Monthly Maintenance - ARVs #37 & #38	
		Astorino	DE-CAL, Inc.	\$ 1,695.00	Invoice #WO18000845 - 7/11/18	Preventative Maintenance on HVAC	
		Astorino	DE-CAL, Inc.	\$ 1,825.08	Invoice #WO18000913 - 6/28/18	Remove/Replace 4" ARV	
		Astorino	DE-CAL, Inc.	\$ 5,460.00	Invoice #WO18250161 - 6/28/18	Repair Switchgear Electrical	
		Astorino	DTE Energy	\$ 13,507.02	Monthly Electric - 6/4/18 - 7/2/18	Sinkhole	
15 Mile Sinkhole		Astorino	Motor City Electric Technologies	\$ 1,290.00	Invoice #91947 - 4/2/18	Repair Switchgear Electrical	
		Bantios	Aloia & Associates, Inc.	\$ 4,467.10	Invoice #17429 - 7/1/18 Legal Services - ending 6/30/18	Sinkhole	
		Bantios	Aloia & Associates, Inc.	\$ 2,129.25	Invoice #17431 - 7/1/18 Legal Services - ending 6/30/18	Sale of 34960 Ebertcin	
		Bantios	Anderson, Eckstein & Westrick, Inc.	\$ 41,240.82	Invoice #0118329 - 7/12/18 Engineering Services - 5/28/18 - 6/24/18	Recovery Shaft	
		Bantios	Viviano Law	\$ 118,475.88	Invoice #19928 - 7/3/18 Legal Services - ending 6/30/18	Sinkhole	
Meters		Astorino	Battery Giant of Macomb Twp.	\$ 539.70	Invoice #21972 - 7/3/18	Meters CH-S-1 & MA-S-2 - Power Sonic Batteries/Terminals	
		Astorino	HESCO	\$ 3,980.00	Invoice #10271 - 7/18/18	MID Meter Repair	
		Astorino	HESCO	\$ 17,210.00	Application #20 - 7/13/18	MID Meter Maintenance	
		Astorino	Motor City Electric Technologies	\$ 1,971.50	Invoice #91955 - 6/25/18	Furnished/Installed Replacement Modem - Meter MA-S-2; Configured WiFi Client - Meter SY-S-3	

MACOMB INTERCEPTOR DRAIN - 8/13/18

Funding Source	Apportionment	Manager	Vendor	Amount	Invoice Detail	Project Summary	Project Balance
NGI		Astorino	HESCO	\$ 10,910.00	Invoice #20180764 - 7/17/18	Magnetic Flow Meter	
		Astorino	J.G.M. Valve Corporation	\$ 700.32	Invoice #18-12401 - 7/30/18	Vent-O-Mat Service Kits	
		Astorino	Macomb County	\$ 947.00	Invoice #AR180541 - 7/17/18	Property Insurance Premium	
		Astorino	Motor City Electric Technologies	\$ 665.85	Invoice #91913 - 6/6/18	SonicWall Renewal	
OMID		Astorino	Oakland County Treasurer	\$ 4,331,353.33	Invoice #SDS0005835 - 7/3/18	Sewerage Disposal Charges - June 2018	
		Manning	Oakland County Treasurer	\$ 38,443.24	Invoice #SDS0005851 - 8/1/18	Debt Service - Series 2010B Bonds	
		Manning	Oakland County Treasurer	\$ 274,047.56	Invoice #SDS0005858 - 8/1/18	Debt Service - Series 2014A	
		Manning	Oakland County Treasurer	\$ 2,547,067.62	Invoice #SDS0005870 - 8/1/18	Debt Service - Series 2010A, Series 2011, 2013A SRF Loans, 2015 SAW Loan	
Total				\$ 7,943,932.11			

Income Statement
MIDDD
As of July 31, 2018

	30-Jun-18 Total Fund	7-1-18 to 7-31-18 O&M**
Revenues		5,554,924.00
Expenditures		4,668,601.00
Equity*	22,921,090	

NOTES

*Projected reserve at 6/30/2018
Projected Engineering Reserve 17,000,000
Projected Sinkhole Surplus 3,250,000
Life Cycle Reserve 4,000,000
Use of surplus for 18/19 534,000
(3,000,000)

** Includes following Projects:

53 Dec 2016 Sinkhole	Revenue	70,000,000	2017A Bond
	Expenditures	5,150,000	State Grant
	Net	131,735	Clinton Twp share of AEW invoice
		233,968	sale of property

	75,633,419
	70,928,663
	<u>4,704,756</u>