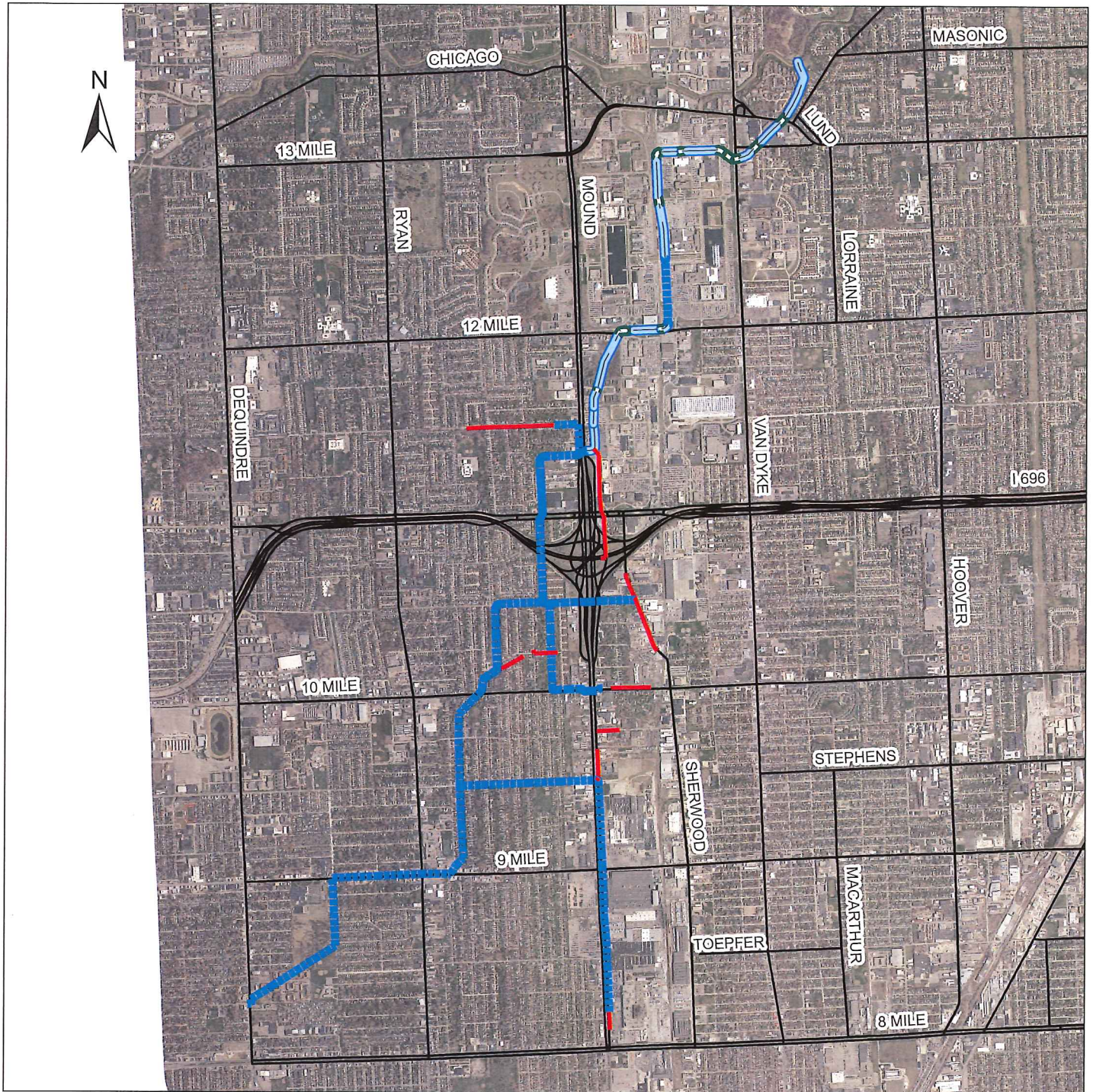


BEAR CREEK
INTER-COUNTY DRAINAGE BOARD
JANUARY 22, 2019
10:00 A.M.
AGENDA

	<u>Page</u>
1. Call meeting to order and roll call	
2. Approval of Agenda	
3. Public participation	
4. Approval of minutes of meeting of December 19, 2018	3
5. Progress Report Update – Jeff Bednar	6
6. Hydraulic Study – Jeff Bednar	8
Motion: To approve the agreement with Anderson, Eckstein & Westrick, Inc. and Applied Science as sub-consultant for the Hydraulic Study to the Bear Creek Drain which was authorized at the December 21, 2018 meeting of the Bear Creek Drainage Board	
7. Parcel Splits Update – Tamara Keskeny	13
8. Consideration for approval of invoices:	15
See attached spreadsheet	
9. Financial Update – Bruce Manning	16
10. Old Business	
11. New Business	
12. Adjourn	

BEAR CREEK DRAIN (INTER COUNTY) & BRANCHES

CENTERLINE/WARREN/OAKLAND COUNTY



Legend



Drain Length (Feet/Miles):
87,023.47 / 16.48

- | Enclosed Gravity | Open Channel |
|----------------------------------------------|--------------|
| — < 60" Dia | Ditch |
| ≥ 60" Dia | Pond |
| Culvert | |



A meeting of the Inter-County Drainage Board for the **BEAR CREEK DRAIN** was held in the Office of the Macomb County Public Works Commissioner, 21777 Dunham Road, Clinton Township, Michigan on December 19, 2018.

PRESENT: Michael Gregg, Chairman
Michigan Department of Agriculture & Rural Development

Candice Miller, Secretary
Macomb County Public Works Commissioner

Anne Vaara, Acting Member
Oakland County Water Resources Commissioner

ALSO PRESENT: Brian Baker, Chief Deputy, Bruce Manning, Financial Manager, Jeff Bednar, P.E., CFM, Environmental Resources Manager, Tom Stockel, Construction Engineer, Dan Heaton, Public Relations Manager, Barbara Delecke, Administrative Services, Office of Macomb County Public Works Commissioner; Brady Harrington, Michigan Department of Agriculture & Rural Development; Lou Urban, P.E., Sydney Kanan, EIT, Anderson, Eckstein & Westrick, Inc.; Karen Ridgway, Applied Science; James VanHavermaat, P.E., City of Warren

The Chairman called the meeting to order at 10:46 a.m.

A motion was made by Ms. Miller, supported by Ms. Vaara to approve the agenda as presented.

Adopted: YEAS: 3
NAYS: 0

The minutes of the meeting of November 28, 2018 were presented. A motion was made by Ms. Vaara, supported by Ms. Miller to approve the minutes as presented.

Adopted: YEAS: 3
NAYS: 0

Mr. Bednar told the Board that future projects are on-hold until regional options of improving flow are explored.

Mr. Urban, Anderson, Eckstein & Westrick, Inc. (AEW) gave a presentation on improving the hydraulic conditions of the Bear Creek Drainage District. The SAW Grant showed that there are some necessary cleanouts and minor point repairs. The City of Warren, General Motors (GM) and the Detroit Arsenal were contacted about any interest they might have in improving the drain. The impacts of the 2014 flood were discussed with each entity. As a result of the damage done at the GM facility, they conducted their own hydraulic study of their property. GM created a natural wildlife habitat on a portion of the drain and are committed to atheistically improving the drain that traverses their property. They are also looking at daylighting a portion of the drain. Mr. Urban spoke about rerouting the drain on private land and making improvements on the portion that runs through the Detroit Arsenal property. There is a possibility that the Detroit Arsenal may donate a portion of their land to the drainage district, which could potentially be used for a detention basin and developed as a pocket-park. Mr. Urban suggested creating a hydraulic model, with flow monitoring for the entire drainage district.

A motion was made by Ms. Vaara, supported by Ms. Miller to authorize the Macomb County Public Works Commissioner to engage the services of AEW and Applied Science to develop a services agreement to proceed with development of a contract to conduct the study with a not-to-exceed cost of \$20,000 for AEW and \$50,000 for Applied Science, Inc. (ASI).

Adopted: YEAS: 3
NAYS: 0

A motion was made by Ms. Vaara, supported by Ms. Miller to receive and file the Bear Creek Hydraulic Study – Feasibility Kickoff Meeting Minutes presented by Mr. Urban.

Adopted: YEAS: 3
NAYS: 0

The Chairman presented the invoices totaling \$29,678.50 as provided to the Board for review and approval.

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

Adopted: YEAS: 3
NAYS: 0

A motion was made by Ms. Miller, supported by Ms. Vaara to receive and file the financial report presented by Mr. Manning.

Adopted: YEAS: 3
NAYS: 0

There being no further business, it was moved by Ms. Vaara, supported by Ms. Miller, that the meeting of the Bear Creek Inter-County Drainage Board be adjourned.


Adopted: YEAS: 3
NAYS: 0

The meeting was adjourned at approximately 11:32 a.m.


Candice S. Miller, Secretary
Bear Creek Inter-County Drainage Board

STATE OF MICHIGAN
COUNTY OF MACOMB

I certify that the foregoing is a true and correct copy of proceedings taken by the Inter-County Drainage Board for the Drainage District shown on the attached set of Minutes, on December 19, 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, Secretary
Bear Creek Inter-County Drainage Board

DATED: 12/20/18

9587.bd

PROGRESS UPDATE

PROJECT: Bear Creek

DATE: January 15, 2019

UPDATE BY: Sydney Kanan

1.) BEAR CREEK INFRASTRUCTURE REHABILITATION

- a. AEW provided preliminary estimate for rehabilitation and replacement repairs. (\$785,330.00)
- b. AEW, MCPWO and OCWRC conducted a meeting to discuss prioritization of rehabilitation locations.
- c. Based on this meeting a revised estimate was provided (\$601,260).
- d. AEW to postpone infrastructure rehabilitation until the condition assessment, review and recommendation are complete for the Bear Creek Branches.
- e. Per the September 24, 2018 meeting with MCPWO, it was determined that pursuing an infrastructure rehabilitation project would not result in the most benefit to the district and as such it was decided that an observational approach would be taken to repairs moving forward.

2.) BEAR CREEK EXTENSION

- a. Oakland County WRC to field verify physical existence of the Bear Creek Extension and report findings at the January meeting.
 - Depending on the results of the field investigation, potential coordination with Fahey, Schultz, Burzych, Rhodes may be needed to execute petition.

3.) ROUTE AND COURSE CERTIFICATE

- a. On hold. This is problematic due to the inability to tie the Warren Branches and East Route to the main line route and course metes and bounds description.

4.) CONDITION ASSESSMENT

- a. Structure GPS – **COMPLETE**
- b. Structure Inspection – **COMPLETE**
- c. CCTV Inspection – **COMPLETE**
- d. Recommendation/Cost Estimate – 90% Complete
 - a. Progress meeting was held on December 10, 2018 with AEW and MCPWO to review draft of the report and recommendations.
 - b. AEW to provide a final draft of the report to MCPWO and OCWRC by January 30, 2019.

5.) EASEMENT INVENTORY

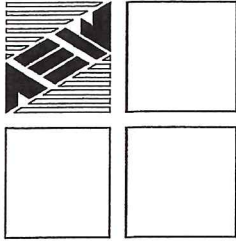
- a. On hold.

6.) GREEN INFRASTRUCTURE

- a. On hold.

Requested Information/Actions from ICDB, MCPWO or OCWRC:

- a. AEW requesting approval of Proposals 1 and 3 by the MCPWO.



ANDERSON, ECKSTEIN AND WESTRICK, INC.

51301 Schoenherr Road, Shelby Township, Michigan 48315

Civil Engineers • Surveyors • Architects 586-726-1234

January 11, 2019

Mr. Jeff Bednar, P.E.
Macomb County Office of Public Works
Environmental Engineer
21777 Dunham Road
Clinton Township, MI 48036

Reference: **Proposal for Professional Services**
Hydraulic Study of the Bear Creek Drain
AEW Project Number 0211-0187-3

Dear Mr. Bednar:

Thank you for choosing AEW and sub consultant ASI to provide professional engineering services on the aforementioned project.

Understanding of the Project

The Bear Creek Drain includes 13 separate watersheds areas with a total drainage area of 21.7 square miles. The Bear Creek construction drawings circa 1956-1979 show the design capacity of the Bear Creek at the mouth of the Red Run at 2,140 cfs and four parallel 12'x12' box culverts were proposed at road crossings and on the GM property. Regrettably, twin 12'x12' box culverts were constructed instead of the proposed 4 -12'x12' box culverts.

The City of Warren was largely developed without requiring storm detention prior to discharge to the drain. This results in a flashy condition where the flow moves to the Bear Creek quickly and the aforementioned twin 12'x12' box culvert enclosures/road crossings act as restricted outlets. The results are elevated flows upstream of the enclosures/road crossings.

The existing hydraulic modeling information prior to 2016 is incomplete. The effective FEMA flood map shows a detailed study from the Red Run to a point just downstream of Van Dyke. FEMA did not evaluate the hydraulic capacity of the Bear Creek upstream of this point and the results are questionable due to flawed assumptions. A 2009 Army Corps hydraulic study of the Bear Creek is limited to the Detroit Arsenal property and uses an incorrect starting water surface elevation. Damage from the August 11, 2104 storm event prompted General Motors to engage a consultant team to prepare a hydraulic study of the Bear Creek in 2016 relative to the GM Tech Center.

With the completion of the SAW for the Bear Creek an asset management program was developed indicating that the minimal repairs, maintenance and rehabilitation needs could be performed leaving some funding available. The MCPWO decided to investigate the feasibility of drain improvements to benefit the community. AEW was engaged to investigate drain improvement locations and enlist coordination with public and private entities. Meetings with representatives from the MCPWO, City of Warren, Detroit Arsenal, and General Motors resulted in positive responses. These entities confirmed their support for a complete hydraulic study and encouraged aesthetically pleasing environmentally friendly drain improvements that lower the



Mr. Bednar
January 11, 2019
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water surface elevation reducing the risk of community flooding. General Motors graciously authorized the MCPWO to use the AEW 2016 GM Tech Center hydraulic study for the starting point for development of a complete hydraulic study of the Bear Creek significantly reducing cost and effort.

Upon hearing the aforementioned positive results of the feasibility study on December 21, 2018, the Intercounty Drain Board authorized AEW and sub consultants ASI to continue the investigation of prospective Bear Creek Drain improvement areas, perform topographic surveys for hydraulic modeling and expansion of the existing hydraulic model to include the remainder of the Bear Creek, tributary drains followed by modeling of proposed improvements.

Services to be Provided:

AEW will continue the investigation of drain improvement locations and coordination with public and private entities. As previously stated, the City of Warren, Detroit Arsenal, and General Motors have a vested interest in the lowering of the water surface elevation of the Bear Creek and are in support of this effort. The Macomb County Department of Roads has been contacted for potential improvements in conjunction with their Mound Road reconstruction project. Other property owners will be contacted contingent upon the hydraulic benefits of storage in the main line Bear Creek or tributary drains as determined through the modeling effort.

The scope of work for the hydraulic analysis of the Bear Creek drainage area shall include the following:

1. Continue to meet with public and private property owner representatives to solicit project support and to determine the limits of potential improvements.
2. Research drain documents at the Macomb County Public Works Office.
3. Compilation of data/designs for potential drain improvements including daylighting on the GM Tech Center Property, drain relocation/expansion on the Detroit Arsenal property, daylighting within existing drain easements west of Mound Road north of 11 Mile Road, potential detention in the Mound Road median as part of the Mound Road reconstruction project, and other public and privately owned properties.
4. Provide an analysis of the hydrology and hydraulics of the Bear Creek drainage system and develop concepts for projects to lower flooding levels, remove restrictions, increase the storage and attenuation of peak flow rates, promote groundwater infiltration, and remove pollutant loads. (Bear Creek is tributary to the Red Run Drain and an existing SWMM and HEC-RAS models exist from the mouth to about Mound Road.)
5. Obtain and review the following information.
 - a. Existing SWMM and HEC-RAS models of the Bear Creek.
 - b. Flood Insurance Study (FIS) for Macomb County.
 - c. GIS and/or storm sewer system documents for Warren, Hazel Park and Madison Heights.



Mr. Bednar
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Page 3

6. Select flow metering locations and install up to three flow meters along Bear Creek and tributary storm drains by April 1, 2019.
7. Survey culverts, crossings and storm drains as-needed.
8. Confirm the current Bear Creek drainage areas and delineate SWMM model subareas.
9. Characterize the SWMM model subareas using available GIS coverages (soils, land use, topography).
10. Expand the existing SWMM model to include upstream major storm drains.
11. Calibrate SWMM model to flow meter data.
12. Run the SWMM model for a range of design storms and identify restrictions.
13. Develop and evaluate conceptual improvement alternatives.
14. Estimate costs/benefits of improvement alternatives.
15. Provide summary report and recommendations.

Responsibilities of the Client

During the research effort of this project, AEW will require assistance from the MCPWO to retrieve documents relevant to the Bear Creek Inter-County Drain, and its tributary drains as necessary.

Assist in the research of private, state and federal drain improvement funding sources.

Assist in discussions with private property owners, and the Department of Roads regarding the feasibility of potential drain improvements.

Fee for Professional Services

The fee for the aforementioned "Services to be Provided" was presented and approved at the December 2018 Intercounty Drainage Board Meeting as follows:

1) Anderson Eckstein and Westrick will continue investigation of potential Bear Creek Drain improvement areas and perform topographic surveys in support of the hydraulic modeling effort not to exceed	\$20,000
2) Applied Science Inc. will perform a hydraulic analysis of the Bear Creek not to exceed	<u>\$50,000</u>
Total	<u>\$70,000</u>

The amount of topographic survey to support the hydraulic analysis is anticipated to be minimal. Should this assumption be revealed to be overly optimistic, AEW will approach the MCPWO with a request and proposal for additional services. Any additional services can be provided on an hourly basis according to our attached rate schedule effective for the period in which the work is performed.



Mr. Bednar
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This proposal does not include revisions to the scope due to changes in the project presented by the Client or his representative once the work has begun.

Execution of the Agreement and Schedule

We trust that this proposal meets your needs. Please advise if any modifications or clarifications are required. The intercounty Drainage Board authorized the engineering team to proceed in the December 21, 2018 meeting and this proposal serves to document that authorization. If deemed acceptable please sign, date, and return one copy of this agreement with original signatures for our use.

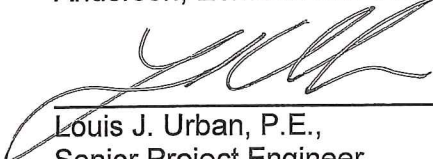
The proposed hydraulic study is to be completed approximately 6 months from receipt of this signed agreement. Flow metering is proposed to occur in April of 2019.

We thank you once again for the opportunity to work with you on this project.

Sincerely,


Anderson, Eckstein and Westrick, Inc.

Accepted By



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

Signature



Roy C. Rose, P.E.,
Chairman of the Board

Printed Name, Title

Date

Enclosure: Current Hourly Rate Schedule
cc:

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EXHIBIT "A"

HOURLY-BASE FEE SCHEDULE

PROFESSIONAL SERVICES

Where it is agreed that fees for services will be based upon the time worked on the project, such fees will be computed at the following rates:

<u>Classification Hourly Rate</u>	<u>2019 Rates</u>
Principal Engineer/Surveyor/Architect	\$171.00
Project Manager	\$167.50
Senior Project Engineer	\$157.00
Project Engineer/Project Surveyor/ Resident Project Representative	\$142.50
Operation and Maintenance Specialist	\$136.50
Graduate Engineer/Surveyor/Architect	\$117.50
Team Leader/Designer	\$117.50
Drafter/Technician	\$ 97.00
Clerical	\$ 47.00
One-person Survey Crew (Crew Chief) w/Truck and Equipment	\$167.50
Two-person Survey Crew (Crew Chief and Instrument Man w/Truck and Equipment)	\$229.50
Three-person Survey Crew (Crew Chief and Instrument Man and Assistant w/Truck and Equipment)	\$283.50
Three Person Sewer Crew	\$333.00
Four Person Sewer Crew	\$409.00
Construction Observer	\$ 97.00

If necessary, the Consultant would serve on litigation or as an expert witness at a rate of 1.5 times the current hourly rate.

These rates are inclusive of all overhead items that are normal business operations. No reimbursable for normal business operations will be allowed, i.e., mileage, faxes, phone bills, etc.

Hourly-Basis Fee Schedule to be adjusted beginning January 1, 2020.

Effective January 1, 2019.



Candice S. Miller

Public Works Commissioner
Macomb County

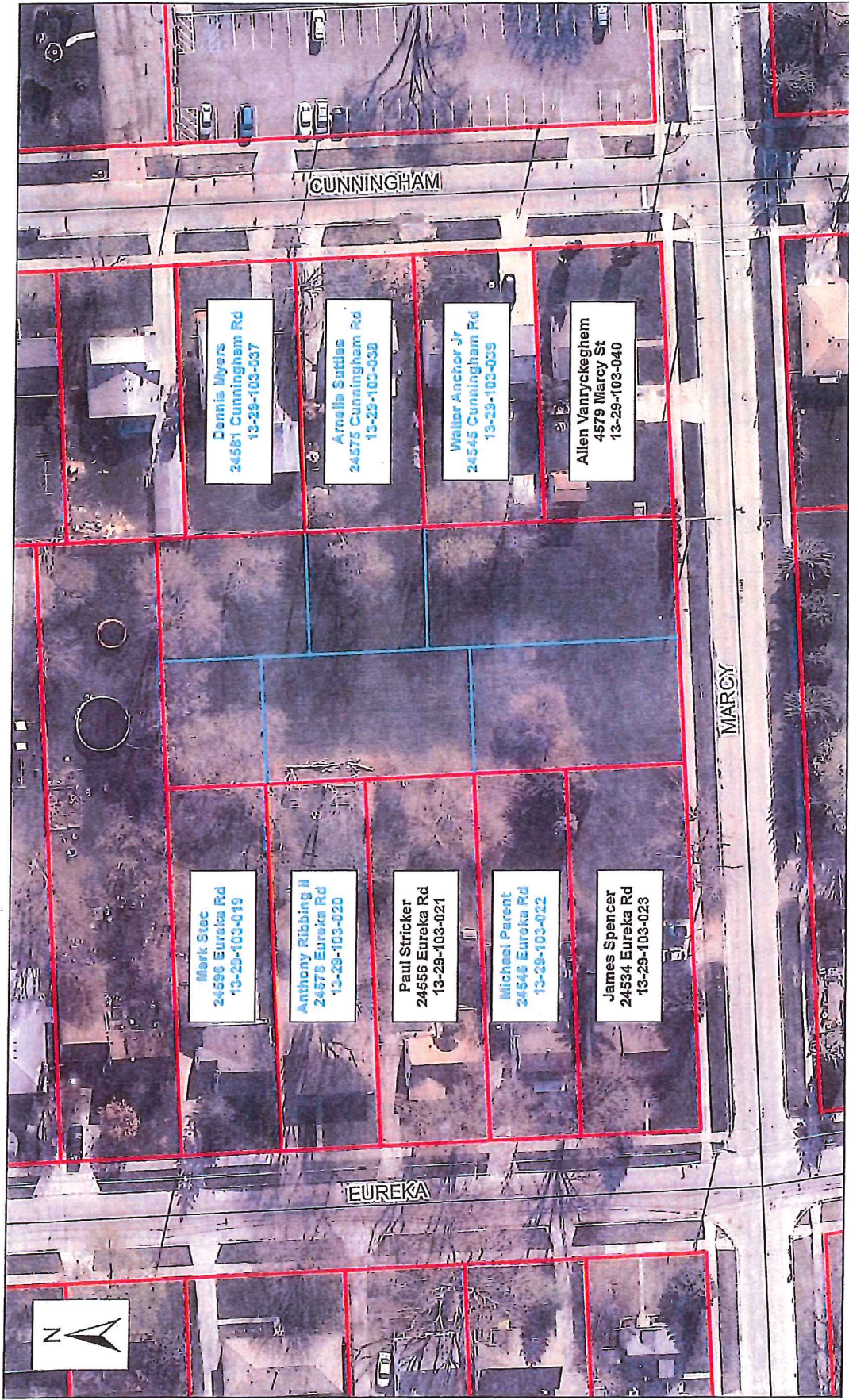
TO: Bear Creek Drain Drainage District
FROM: Tamara Keskeny, Property Manager
DATE: January 16, 2019
RE: Tax Parcel No.: 13-29-103-024

On January 8, 2019 Ben Aloia attended the Public Hearing regarding the Application for the Subdivision Split/ Combine for the above mentioned parcel. The Application was approved by the City Council of Warren.

Jeffery Candela, Aloia & Associates, is handling the Deeds. Once processed, the Deeds will be signed by Candice Miller and delivered to the six residents who will obtain these additions to their tax parcels.

This should be accomplished by the end of January 2019.

EUREKA/MARCY/CUNNINGHAM PARCELS



Legend

- Tax Parcels
- Roads

BEAR CREEK INTER-COUNTY DRAIN - 1/22/19

Funding Source	Apportionment	Manager	Vendor	Amount	Invoice Detail	Project Summary	Project Balance
Bear Creek Drain	Chapter 21	Bednar	Anderson, Eckstein & Westrick, Inc.	\$ 4,977.00	Invoice #0119997 - 11/30/18 Engineering Services - 10/15/18 - 11/11/18	Condition Assessment - Warren Branch	Fee Balance \$8,848.00 Labor \$12,103.75
			Anderson, Eckstein & Westrick, Inc.	\$ 6,640.45	Invoice #119998 - 11/30/18 Engineering Services - 10/15/18 - 11/11/18	Hydraulic Study - Feasibility	985.80
			Aloia & Associates, Inc.	\$ 627.00	Invoice #17983 - 12/1/18 Legal Services - ending 11/30/18	Vacant Land - Marcy Street	\$
			Anderson, Eckstein & Westrick, Inc.	\$ 985.80	Invoice #0120394 - 12/19/18 Engineering Services - 11/12/18 - 12/9/18	Hydraulic Study - Feasibility - Final Pay	
			R. G. Eisenhardt Contracting, Inc.	\$ 7,853.00	Invoice #4478 - 12/7/18	Replacement of existing outfall CMP from manhole to Bear Creek	
			Total			\$ 21,083.25	

YTD Trial Balance
Fund: Bear Creek Combined
As of Fiscal Period: Oct 1, 2018-Dec 31, 2018

	O&M Balance 9/30/2018	O&M	Total 12/31/2018
Cash - Operating	1,274,888	(3,144)	1,271,744
Accounts Receivable ⁽¹⁾	75,534		75,534
Assets			0
Liabilities ⁽¹⁾	98,929		98,929
Revenues		8,621	8,621
Expenditures		11,765	11,765
Equity	1,251,493		1,248,349

NOTES

1) Net amount of \$23,394 due to AEW for final invoices relating to SAW 1407.
Final request is going under MS4 review at state level