

**NOTICE OF MEETINGS**  
**DRAINAGE BOARD FOR THE FOLLOWING DRAINS:**

1. Acacia Park CSO Drain
2. Birmingham CSO Drain
3. Bloomfield Village CSO Drain
4. Clinton River Water Resource Recovery Facility
5. George W. Kuhn Drain
6. Crake Drain
7. Gosling Drain
8. Hobart Drain
9. Nancy Dingeldey Drain
10. Six Points Drain

NOTICE IS HEREBY GIVEN THAT MEETINGS OF THE DRAINAGE BOARD FOR THE ABOVE-MENTIONED DRAINS WILL COMMENCE VIA **GOTOMEETING** AT **2:00 P.M.**, ON **TUESDAY, MAY 18<sup>th</sup>, 2021** TO CONDUCT NECESSARY AND APPROPRIATE BUSINESS OF THE DRAIN BOARDS. THOSE THAT WISH TO PARTICIPATE MAY FOLLOW THE INSTRUCTIONS ATTACHED TO THIS NOTICE.

THIS BOARD MEETING IS BEING CONDUCTED WHOLLY ELECTRONICALLY PURSUANT TO THE STATE OF EMERGENCY DECLARED BY WATERFORD TOWNSHIP, MICHIGAN AND IN ACCORDANCE WITH THE PROVISIONS OF THE OPEN MEETINGS ACT, PA 254 OF 2020, AND/OR AS OTHERWISE PROVIDED BY LAW DUE TO THE ONGOING COVID-19 PANDEMIC. ALL BOARD MEMBERS WILL BE PARTICIPATING ELECTRONICALLY.

DURING THE ELECTRONIC MEETING, THERE WILL BE AN AGENDA ITEM FOR PUBLIC COMMENT, DURING WHICH THE PUBLIC MAY PROVIDE INPUT OR ASK QUESTIONS OF THE BOARD. IN THE EVENT A MEMBER OF THE PUBLIC WOULD LIKE TO SUBMIT THEIR INPUT OR QUESTIONS TO BE READ AT THE MEETING BY THE BOARD CHAIRPERSON, PLEASE PROVIDE THE INPUT OR QUESTIONS IN WRITING TO MEGAN KOSS AT [KOSSM@OAKGOV.COM](mailto:KOSSM@OAKGOV.COM).

PERSONS WITH DISABILITIES THAT NEED ASSISTANCE PARTICIPATING IN THE MEETING SHOULD CONTACT MEGAN KOSS AT [KOSSM@OAKGOV.COM](mailto:KOSSM@OAKGOV.COM).

JIM NASH  
Oakland County Water Resources Commissioner  
Telephone: 248-858-0958

Posted by: May 13, 2021

**Chapter 20 Drain Board Meeting -- May 18, 2021**  
**Tue, May 18, 2021 2:00 PM - 3:00 PM (EDT)**

**Please join my meeting from your computer, tablet or smartphone.**  
<https://global.gotomeeting.com/join/451348989>

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**Chapter 20 Drainage Board Meeting**  
**Regular Meeting – Tuesday May 18, 2021**

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**1. Acacia Park CSO**

## **AGENDA**

### **DRAINAGE BOARD FOR THE ACACIA PARK CSO DRAIN**

May 18, 2021

1. Call meeting to order
2. Approve minutes of meeting of April 27, 2021
3. Public Comments
4. Present request for reimbursement of the Evergreen Farmington Sewage Disposal System Fund in the amount of \$31,955.84
5. Other business
6. Approve pro rata payment to Drainage Board members
7. Adjourn

**MINUTES OF THE MEETING OF THE DRAINAGE BOARD  
FOR THE ACACIA PARK CSO DRAIN**

April 27, 2021

A meeting of the Drainage Board for the Acacia Park CSO Drain was held at 2:00 p.m. on the 27<sup>th</sup> day of April, 2021. Due to the COVID-19 pandemic, the meeting was conducted electronically via GoToMeeting in accordance with PA 254 of 2020, as may be amended from time to time and/or as otherwise provided by law.

The meeting was called to order by the Chairperson. The Board indicated where they were physically located at the time of the meeting as follows:

PRESENT: Jim Nash, Oakland County Water Resources Commissioner, participating from Farmington Hills, Michigan.

David Woodward, Chairperson of the Oakland County Board of Commissioners, participating from Royal Oak, Michigan.

Gwen Markham, Chairperson of the Finance Committee, Oakland County Board of Commissioners, participating from Novi, Michigan.

ABSENT: None.

Minutes of the meeting held March 23, 2021 were presented for consideration. It was moved by Markham, supported by Woodward, that the minutes be approved.

ROLL CALL VOTE:

NASH: AYE

MARKHAM: AYE

WOODWARD: AYE

Chairperson Nash asked if there were any public comments. There were none.

A Memorandum from Jason Say, P.E., dated April 27, 2021, requesting the Board to authorize Oakland County IT and Oakland County WRC to perform internet service upgrades for a monthly recurring cost of \$684.86 was presented. It was moved by Markham, supported by Woodward, to authorize Oakland County IT and Oakland County WRC to perform internet service upgrades for a monthly recurring cost of \$684.86 as presented.

ROLL CALL VOTE:

NASH: AYE

MARKHAM: AYE

WOODWARD: AYE

A Memorandum from Gary Nigro, P.E., Chief Engineer, dated April 27, 2021, requesting the Board approve the Drainage District major maintenance and capital improvement projects for a not-to-exceed amount of \$377,500 was presented. It was moved

by Markham, supported by Woodward, to approve the Drainage District major maintenance and capital improvement projects for a not-to-exceed amount of \$377,500 as presented.

ROLL CALL VOTE:

NASH: AYE  
MARKHAM: AYE  
WOODWARD: AYE

A Maintenance Assessment Recommendation and Special Assessment Roll in the amount of \$1,006,890 for the Acacia Park CSO (as attached) were presented. It was moved by Markham, supported by Woodward, to adopt the Maintenance Assessment Recommendation and Special Assessment Roll in the amount of \$1,006,890 as presented.

ROLL CALL VOTE:

NASH: AYE  
MARKHAM: AYE  
WOODWARD: AYE

A request for approval of payment of invoices and reimbursement of the Drain Revolving Fund in the amount of \$5,952.97 (as attached) was presented. It was moved by Markham, supported by Woodward, to approve the payment of invoices and reimbursement of the Drain Revolving Fund in the amount of \$5,952.97.

ROLL CALL VOTE:

NASH: AYE  
MARKHAM: AYE  
WOODWARD: AYE

A request for reimbursement of the Evergreen Farmington Fund in the amount of \$31,955.84 (as attached) was presented. It was moved by Markham, supported by Woodward, to reimburse the Evergreen Farmington Fund in the amount of \$31,955.84.

ROLL CALL VOTE:

NASH: AYE  
MARKHAM: AYE  
WOODWARD: AYE

It was moved by Nash, supported by Markham, to certify attendance and authorize pro rata payment of \$25 per day to Ms. Markham and Mr. Woodward.

ROLL CALL VOTE:

NASH: AYE  
MARKHAM: AYE  
WOODWARD: AYE

There being no further business, the meeting was adjourned.

A handwritten signature in blue ink, appearing to read "Jim Nash", is positioned above a horizontal line.

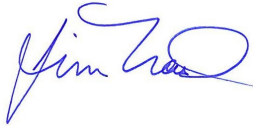
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Jim Nash, Chairperson

STATE OF MICHIGAN                    )  
  )SS.  
COUNTY OF OAKLAND                )

I, the undersigned, do hereby certify that the foregoing is a true and complete copy of the minutes of the Drainage Board for the Acacia Park CSO Drain, Oakland County, Michigan, held on the 27<sup>th</sup> day of April, 2021, and that the minutes are on file in the office of the Oakland County Water Resources Commissioner and are available to the public.

I further certify that the notice of the meeting was posted at least 18 hours in advance of the meeting at the office of the Oakland County Water Resources Commissioner which is the principal office of the Drainage Board for the Acacia Park CSO Drain Drainage District.



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Jim Nash, Chairperson

Dated: May 7, 2021



**MEMO TO:** Mr. Jim Nash, Chairman  
of the Drainage Board for the ACACIA PARK CSO DRAIN

**FROM:** Shawn Phelps, Chief of Fiscal Services   
OCWRC Accounting

**DATE:** May 18, 2021

**SUBJECT:** Request for Reimbursement of Evergreen Farmington Fund

The following is a detail of charges paid from the Evergreen Farmington Fund  
for the period ending May 16, 2021.

<u>Date</u>	<u>Ref No.</u>	<u>For</u>	<u>Amount</u>
04/30/21	JE# 356681	April 2021 Storm Water Flow Charges RTB Capacity Use (O & M Credit)	\$31,955.84
			<u>\$31,955.84</u>

## **2. Birmingham CSO**

## **AGENDA**

### **DRAINAGE BOARD FOR THE BIRMINGHAM CSO DRAIN**

May 18, 2021

1. Call meeting to order
2. Approve minutes of meeting of April 27, 2021
3. Public Comments
4. Present request for reimbursement of the Evergreen Farmington Fund in the amount of \$33,415.26
5. Other business
6. Approve pro rata payment to Drainage Board members
7. Adjourn

**MINUTES OF THE MEETING OF THE DRAINAGE BOARD  
FOR THE BIRMINGHAM CSO DRAIN**

April 27, 2021

A meeting of the Drainage Board for the Birmingham CSO Drain was held at 2:00 p.m. on the 27<sup>th</sup> day of April, 2021. Due to the COVID-19 pandemic, the meeting was conducted electronically via GoToMeeting in accordance with PA 254 of 2020, as may be amended from time to time and/or as otherwise provided by law.

The meeting was called to order by the Chairperson. The Board indicated where they were physically located at the time of the meeting as follows:

PRESENT: Jim Nash, Oakland County Water Resources Commissioner, participating from Farmington Hills, Michigan.

David Woodward, Chairperson of the Oakland County Board of Commissioners, participating from Royal Oak, Michigan.

Gwen Markham, Chairperson of the Finance Committee, Oakland County Board of Commissioners, participating from Novi, Michigan.

ABSENT: None.

Minutes of the meeting held March 23, 2021 were presented for consideration. It was moved by Markham, supported by Woodward, that the minutes be approved.

ROLL CALL VOTE:

NASH: AYE

MARKHAM: AYE

WOODWARD: AYE

Chairperson Nash asked if there were any public comments. There were none.

A Memorandum from Jason Say, P.E., dated April 27, 2021, requesting the Board to authorize Oakland County IT and Oakland County WRC to perform internet service upgrades for a monthly recurring cost of \$684.86 was presented. It was moved by Markham, supported by Woodward, to authorize Oakland County IT and Oakland County WRC to perform internet service upgrades for a monthly recurring cost of \$684.86 as presented.

ROLL CALL VOTE:

NASH: AYE

MARKHAM: AYE

WOODWARD: AYE

A Memorandum from Gary Nigro, P.E., Chief Engineer, dated April 27, 2021, requesting the Board approve the Drainage District major maintenance and capital improvement projects for a not-to-exceed amount of \$522,500 was presented. It was moved

by Markham, supported by Woodward, to approve the Drainage District major maintenance and capital improvement projects for a not-to-exceed amount of \$522,500 as presented.

ROLL CALL VOTE:

NASH: AYE  
MARKHAM: AYE  
WOODWARD: AYE

A Maintenance Assessment Recommendation and Special Assessment Roll in the amount of \$936,920 for the Birmingham CSO (as attached) were presented. It was moved by Markham, supported by Woodward, to adopt the Maintenance Assessment Recommendation and Special Assessment Roll in the amount of \$936,920 as presented.

ROLL CALL VOTE:

NASH: AYE  
MARKHAM: AYE  
WOODWARD: AYE

A request for approval of payment of invoices and reimbursement of the Drain Revolving Fund in the amount of \$30,258.39 (as attached) was presented. It was moved by Markham, supported by Woodward, to approve the payment of invoices and reimbursement of the Drain Revolving Fund in the amount of \$30,258.39.

ROLL CALL VOTE:

NASH: AYE  
MARKHAM: AYE  
WOODWARD: AYE

A request for reimbursement of the Evergreen Farmington Fund in the amount of \$33,415.26 (as attached) was presented. It was moved by Markham, supported by Woodward, to reimburse the Evergreen Farmington Fund in the amount of \$33,415.26.

ROLL CALL VOTE:


NASH: AYE  
MARKHAM: AYE  
WOODWARD: AYE

It was moved by Nash, supported by Markham, to certify attendance and authorize pro rata payment of \$25 per day to Ms. Markham and Mr. Woodward.

ROLL CALL VOTE:

NASH: AYE  
MARKHAM: AYE  
WOODWARD: AYE

There being no further business, the meeting was adjourned.

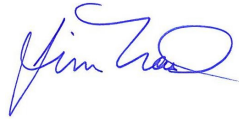


Jim Nash, Chairperson

STATE OF MICHIGAN                    )  
  )SS.  
COUNTY OF OAKLAND                )

I, the undersigned, do hereby certify that the foregoing is a true and complete copy of the minutes of the Drainage Board for the Birmingham CSO Drain, Oakland County, Michigan, held on the 27<sup>th</sup> day of April, 2021, and that the minutes are on file in the office of the Oakland County Water Resources Commissioner and are available to the public.

I further certify that the notice of the meeting was posted at least 18 hours in advance of the meeting at the office of the Oakland County Water Resources Commissioner which is the principal office of the Drainage Board for the Birmingham CSO Drain Drainage District.



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Jim Nash, Chairperson

Dated: May 7, 2021

**MEMO TO:** Mr. Jim Nash, Chairman  
of the Drainage Board for the BIRMINGHAM CSO DRAIN

**FROM:** Shawn Phelps, Chief of Fiscal Services  
OCWRC Accounting



**DATE:** May 18, 2021

**SUBJECT:** Request for Reimbursement of Evergreen Farmington Fund

The following is a detail of charges paid from the Evergreen Farmington Fund  
for the period ending May 16, 2021.

<u>Date</u>	<u>Ref No.</u>	<u>For</u>	<u>Amount</u>
04/30/21	JE# 356681	April 2021 Storm Water Flow Charges RTB Capacity Use (O & M Credit)	\$33,415.26
			<u>\$33,415.26</u>



### **3. Bloomfield Village CSO**

## **AGENDA**

### **DRAINAGE BOARD FOR THE BLOOMFIELD VILLAGE CSO DRAIN**

May 18, 2021

1. Call meeting to order
2. Approve minutes of meeting of April 27, 2021
3. Public Comments
4. Present request for reimbursement of the Evergreen Farmington Fund in the amount of \$42,173.67
5. Other business
6. Approve pro rata payment to Drainage Board members
7. Adjourn

**MINUTES OF THE MEETING OF THE DRAINAGE BOARD  
FOR THE BLOOMFIELD VILLAGE CSO DRAIN**

April 27, 2021

A meeting of the Drainage Board for the Bloomfield Village CSO Drain was held at 2:00 p.m. on the 27<sup>th</sup> day of April, 2021. Due to the COVID-19 pandemic, the meeting was conducted electronically via GoToMeeting in accordance with PA 254 of 2020, as may be amended from time to time and/or as otherwise provided by law.

The meeting was called to order by the Chairperson. The Board indicated where they were physically located at the time of the meeting as follows:

PRESENT: Jim Nash, Oakland County Water Resources Commissioner, participating from Farmington Hills, Michigan.

David Woodward, Chairperson of the Oakland County Board of Commissioners, participating from Royal Oak, Michigan.

Gwen Markham, Chairperson of the Finance Committee, Oakland County Board of Commissioners, participating from Novi, Michigan.

ABSENT: None.

Minutes of the meeting held March 23, 2021 were presented for consideration. It was moved by Markham, supported by Woodward, that the minutes be approved.

ROLL CALL VOTE:

NASH: AYE

MARKHAM: AYE

WOODWARD: AYE

Chairperson Nash asked if there were any public comments. There were none.

A Memorandum from Jason Say, P.E., dated April 27, 2021, requesting the Board to authorize Oakland County IT and Oakland County WRC to perform internet service upgrades for a monthly recurring cost of \$684.86 was presented. It was moved by Markham, supported by Woodward, to authorize Oakland County IT and Oakland County WRC to perform internet service upgrades for a monthly recurring cost of \$684.86 as presented.

ROLL CALL VOTE:

NASH: AYE

MARKHAM: AYE

WOODWARD: AYE

A Memorandum from Gary Nigro, P.E., Chief Engineer, dated April 27, 2021, requesting the Board approve the Drainage District major maintenance and capital improvement projects for a not-to-exceed amount of \$425,500 was presented. It was moved

by Markham, supported by Woodward, to approve the Drainage District major maintenance and capital improvement projects for a not-to-exceed amount of \$425,500 as presented.

ROLL CALL VOTE:

NASH: AYE  
MARKHAM: AYE  
WOODWARD: AYE

A Maintenance Assessment Recommendation and Special Assessment Roll in the amount of \$1,374,990 for the Bloomfield Village CSO (as attached) were presented. It was moved by Markham, supported by Woodward, to adopt the Maintenance Assessment Recommendation and Special Assessment Roll in the amount of \$1,374,990 as presented.

ROLL CALL VOTE:

NASH: AYE  
MARKHAM: AYE  
WOODWARD: AYE

A request for approval of payment of invoices and reimbursement of the Drain Revolving Fund in the amount of \$10,001.59 (as attached) was presented. It was moved by Markham, supported by Woodward, to approve the payment of invoices and reimbursement of the Drain Revolving Fund in the amount of \$10,001.59.

ROLL CALL VOTE:

NASH: AYE  
MARKHAM: AYE  
WOODWARD: AYE

A request for reimbursement of the Evergreen Farmington Fund in the amount of \$42,173.67 (as attached) was presented. It was moved by Markham, supported by Woodward, to reimburse the Evergreen Farmington Fund in the amount of \$42,173.67.

ROLL CALL VOTE:

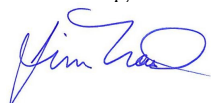
NASH: AYE  
MARKHAM: AYE  
WOODWARD: AYE

It was moved by Nash, supported by Markham, to certify attendance and authorize pro rata payment of \$25 per day to Ms. Markham and Mr. Woodward.

ROLL CALL VOTE:

NASH: AYE  
MARKHAM: AYE  
WOODWARD: AYE

There being no further business, the meeting was adjourned.



Jim Nash, Chairperson

STATE OF MICHIGAN                    )  
  )SS.  
COUNTY OF OAKLAND                )

I, the undersigned, do hereby certify that the foregoing is a true and complete copy of the minutes of the Drainage Board for the Bloomfield Village CSO Drain, Oakland County, Michigan, held on the 27<sup>th</sup> day of April, 2021, and that the minutes are on file in the office of the Oakland County Water Resources Commissioner and are available to the public.

I further certify that the notice of the meeting was posted at least 18 hours in advance of the meeting at the office of the Oakland County Water Resources Commissioner which is the principal office of the Drainage Board for the Bloomfield Village CSO Drain Drainage District.



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Jim Nash, Chairperson

Dated: May 7, 2021

**MEMO TO:** Mr. Jim Nash, Chairman  
of the Drainage Board for the BLOOMFIELD VILLAGE CSO DRAIN

**FROM:** Shawn Phelps, Chief of Fiscal Services  
OCWRC Accounting



**DATE:** May 18, 2021

**SUBJECT:** Request for Reimbursement of Evergreen Farmington Fund

The following is a detail of charges paid from the Evergreen Farmington Fund  
for the period ending May 16, 2021.

<u>Date</u>	<u>Ref No.</u>	<u>For</u>	<u>Amount</u>
04/30/21	JE# 356681	April 2021 Storm Water Flow Charges RTB Capacity Use (O & M Credit)	\$42,173.67
			<u><u>\$42,173.67</u></u>

## **4. Clinton River Water Resource Recovery Facility**



## **AGENDA**

### **DRAINAGE BOARD FOR THE CLINTON RIVER WATER RESOURCE RECOVERY FACILITY**

May 18, 2021

1. Call meeting to order
2. Approve minutes of meeting of April 27, 2021
3. Public Comments
4. Present Memorandum from Ben Lewis, P.E., Manager, dated May 18, 2021, requesting the Board receive and file the Drainage District PFAS evaluation and source tracking final technical memo
5. Change order no. 44 for Tooles Contracting Group LLC for a net decrease in the amount of \$2,698.16
6. Present request for Board approval of payment of invoices from the Construction Fund in the amount \$29,212.76
7. Present request for Board approval of payment of invoices and reimbursement of the Drain Revolving Fund from the Maintenance Fund in the amount of \$152,065.19
8. Other business
9. Approve pro rata payment to Drainage Board members
10. Adjourn

**MINUTES OF THE MEETING OF THE DRAINAGE BOARD  
FOR THE CLINTON RIVER WATER RESOURCE RECOVERY FACILITY**

April 27, 2021

A meeting of the Drainage Board for the Clinton River Water Resource Recovery Facility was held at 2:00 p.m. on the 27<sup>th</sup> day of April, 2021. Due to the COVID-19 pandemic, the meeting was conducted electronically via GoToMeeting in accordance with PA 254 of 2020, as may be amended from time to time and/or as otherwise provided by law.

The meeting was called to order by the Chairperson. The Board indicated where they were physically located at the time of the meeting as follows:

PRESENT: Jim Nash, Oakland County Water Resources Commissioner, participating from Farmington Hills, Michigan.

David Woodward, Chairperson of the Oakland County Board of Commissioners, participating from Royal Oak, Michigan.

Gwen Markham, Chairperson of the Finance Committee, Oakland County Board of Commissioners, participating from Novi, Michigan.

ABSENT: None.

Minutes of the meeting held March 23, 2021 were presented for consideration. It was moved by Markham, supported by Woodward, that the minutes be approved.

ROLL CALL VOTE:

NASH: AYE

MARKHAM: AYE

WOODWARD: AYE

Chairperson Nash asked if there were any public comments. There were none.

A Memorandum from Ben Lewis, P.E., Manager, dated April 27, 2021, requesting the Board approve various projects utilizing funds from Major Maintenance and Capital Improvement reserves was presented. It was moved by Markham, supported by Woodward, to approve various projects utilizing funds from Major Maintenance and Capital Improvement reserves as presented.

ROLL CALL VOTE:

NASH: AYE

MARKHAM: AYE

WOODWARD: AYE

A request for Board approval of payment of invoices from the Construction Fund in the amount of \$28,364.01 (as attached) was presented. It was moved by Markham, supported by Woodward, that the invoices in the amount of \$28,365.01 be paid as presented.

ROLL CALL VOTE:

NASH: AYE  
MARKHAM: AYE  
WOODWARD: AYE

A request for Board approval of payment of invoices and reimbursement of the Drain Revolving Fund from the Maintenance Fund in the amount of \$276,472.54 (as attached) was presented. It was moved by Markham, supported by Woodward, that the invoices in the amount of \$276,472.54 be paid as presented.

ROLL CALL VOTE:

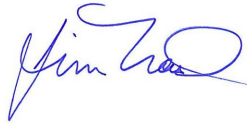
NASH: AYE  
MARKHAM: AYE  
WOODWARD: AYE

It was moved by Nash, supported by Markham, to certify attendance and authorize pro rata payment of \$25 per day to Ms. Markham and Mr. Woodward.

ROLL CALL VOTE:

NASH: AYE  
MARKHAM: AYE  
WOODWARD: AYE

There being no further business, the meeting was adjourned.




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Jim Nash, Chairperson

STATE OF MICHIGAN                    )  
  )SS.  
COUNTY OF OAKLAND                )

I, the undersigned, do hereby certify that the foregoing is a true and complete copy of the minutes of the Drainage Board for the Clinton River Water Resource Recovery Facility, Oakland County, Michigan, held on the 27<sup>th</sup> day of April, 2021, and that the minutes are on file in the office of the Oakland County Water Resources Commissioner and are available to the public.

I further certify that the notice of the meeting was posted at least 18 hours in advance of the meeting at the office of the Oakland County Water Resources Commissioner which is the principal office of the Drainage Board for the Clinton River Water Resource Recovery Facility Drainage District.



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Jim Nash, Chairperson

Dated: May 7, 2021

**OAKLAND COUNTY  
WATER RESOURCES COMMISSIONER**

**MEMORANDUM**

**TO:** Jim Nash, Chairperson  
Clinton River Water Resource Recovery Facility Drainage Board

**FROM:** Ben Lewis, P.E., Manager

**SUBJECT:** CRWRRF – PFAS Evaluation and Source Tracking

**DATE:** May 18, 2021

On August 25, 2020 the Clinton River Water Resource Recovery Facility Drainage Board approved a study of PFAS entering the Clinton River Water Resource Recovery Facility. The study was to include identifying known and potential PFAS sources, developing sampling plans, analyzing data collected, and creating a technical memo presenting conclusions.

OHM Advisors has completed the study and prepared the technical memo “PFAS Evaluation and Source Tracking Final”. A copy of the technical memo is attached. Pages 6 – 9 of the 353 page technical memo contain the Executive Summary.

**Requested Action:**

**Receive and File the Clinton River Water Resource Recovery Facility PFAS Evaluation and Source Tracking Final technical memo.**

A high-speed photograph of a water splash, creating a vertical column of water with a crown-like top, set against a blurred background.

# Clinton River Water Resource Recovery Facility

## PFAS Evaluation and Source Tracking Final

February 2021



## I. Executive Summary

The Water Resources Commissioner's office of Oakland County (WRC) chose to conduct an in-depth study of PFAS entering the Clinton River Water Resource Recovery Facility (CRWRRF) and the associated collection system to identify potential significant sources, to achieve consistent compliance with water quality standards and to evaluate the long term PFAS forming potential of the CRWRRF effluent and biosolids.

Per- and polyfluoroalkyl substances—also known as “PFAS” are a large group of man-made chemicals that have been used globally in the last century in manufacturing, firefighting, and thousands of consumer products. These compounds are bio-accumulative, have been linked to adverse health effects, move easily throughout the water cycle and break down slowly.

In 2017, Michigan created the Michigan PFAS Action Response Team (MPART) within the Department of Environment, Great Lakes, and Energy (EGLE) to investigate PFAS sources and protect drinking water and public health. In 2018, Michigan began requiring Wastewater Treatment Plants (WWTPs) with Industrial Pretreatment Programs (IPPs) to test their effluent for PFAS, determine if they were passing PFAS compounds to surface waters, evaluate potential sources, investigate probable sources, and reduce or eliminate the sources found. Rule 57 Surface Water Quality Standards were updated to include two PFAS; perfluorooctanesulfonic acid (PFOS) and perfluorooctanoic acid (PFOA). The water quality standard for PFOS is 12 ng/L for streams that are not designated as a drinking water source and 11 ng/L for those that are designated as a drinking water source (EGLE, Michigan Surface Water Sources, 2016). The water quality standard for PFOA is 12,000 ng/L for surface waters that are not designated as drinking water source, and 420 ng/L for those that are designated as a drinking water source. The Clinton River has not been designated as a drinking water source, so the standards for non-drinking water sources (12 ng/L for PFOS and 12,000 ng/L for PFOA) are being applied.

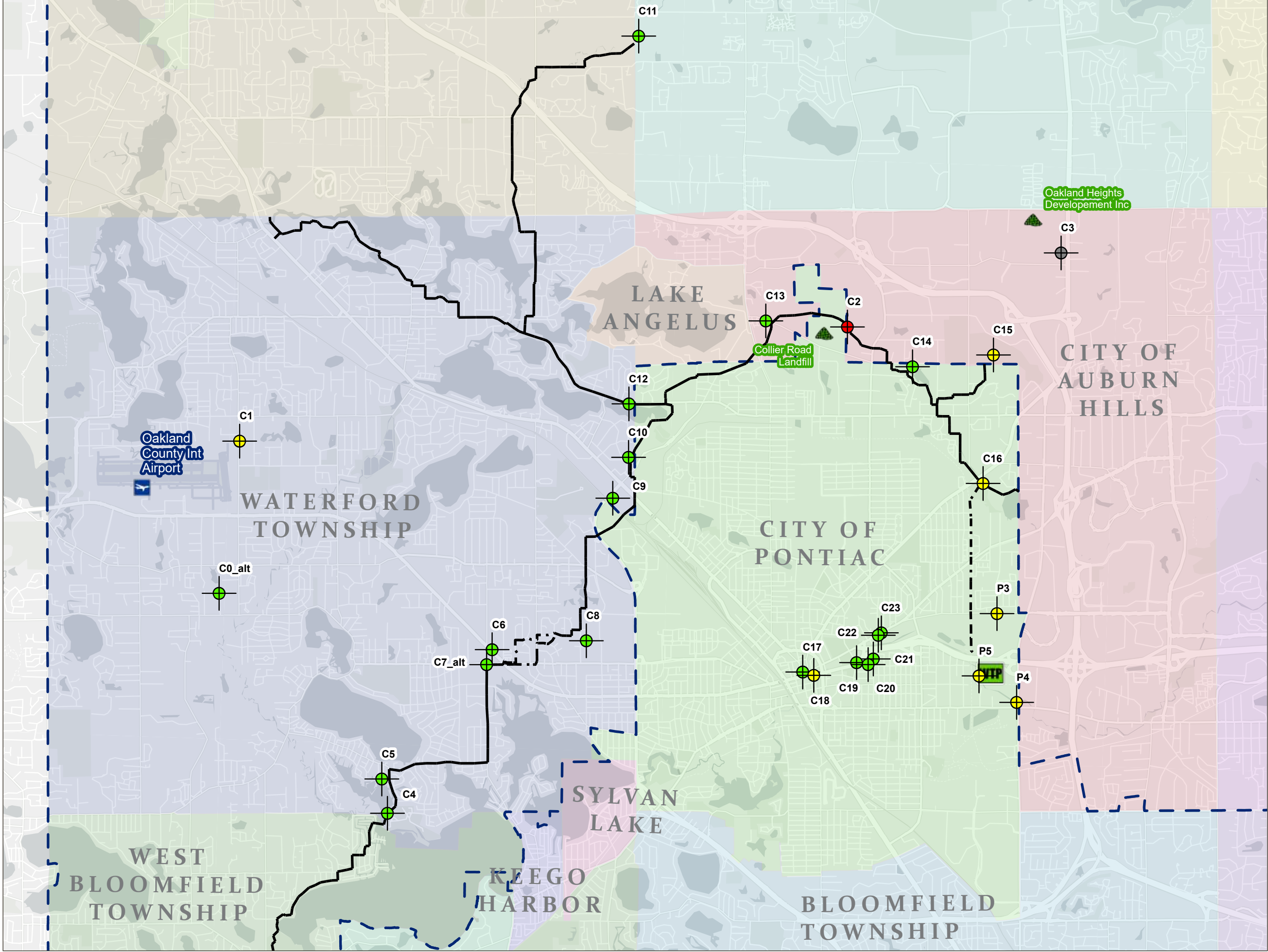
Industrial dischargers were sampled in 2018 if they were identified as likely PFAS users, and some sources were identified. When the concentrations were converted to daily mass (*daily mass=concentration\*daily flow*) the PFAS mass identified could not account for the total PFAS mass observed at the facility indicating that other unidentified sources must exist. WRC elected to perform a more in-depth evaluation of the CRWWR and its collection system to better identify potential PFAS sources. WRC's goal is to continue to meet EGLE requirements for PFAS and to minimize the PFOS and PFOA discharged to the environment through the CRWRRF effluent and biosolids. As treatment of PFAS within conventional wastewater treatment process is not cost effective, identifying sources of PFAS in the collection system and minimizing these discharges to the CRWRRF system is considered the best practice for addressing PFAS at the time of writing this report.

The CRWRRF service area extends over 120 square miles so an extensive sampling effort was conducted to narrow down the areas where unknown sources may be located. The service area is divided into two major districts: the City of Pontiac and the Clinton-Oakland Sewage Disposal System (COSDS). WRC has flow meters installed at lift stations and at major intersections in the collection system. By sampling at the flow meters, individual branches of the collection system could be isolated to identify the branches where PFAS concentrations were detected above the water quality standards. Those concentrations were also converted to mass to isolate the branches carrying the largest total mass. The concentrations measured at each meter location are represented graphically on Figure 1 and show the results relative to water quality standards.

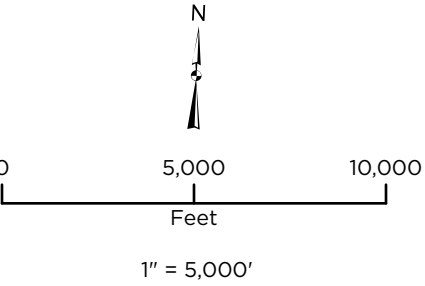


# CRWRRF PFAS Evaluation & Source Tracking

Figure 1 -  
Collection System  
Sample Results



- Wastewater Treatment Plant
- Oakland County Airport
- Landfills
- COSDS Interceptor
- Force Main
- COSDS Sewage Disposal System
- Interceptor Sampling Locations**
- Sample Results**
- More than 10x Higher Than Water Quality Standards
- Above Water Quality Standards
- Below Water Quality Standards
- Not Sampled



Source: Data provided by OCWRC, MDEGLE, M&Waters, Clinton-Oakland Sewer District, City of Auburn Hills, Waterford Twp., City of Pontiac, ESRI and OHM Advisors. OHM Advisors does not warrant the accuracy of the data and/or the map. This document is intended to depict the approximate spatial location of the mapped features within the Community and all use is strictly at the user's own risk.

Coordinate System: NAD 1983 StatePlane Michigan South FIPS 2113 IntlFeet  
Map Published: January 29, 2021







Comparing the contributions of individual branches of the collection system revealed that roughly half of the PFOS mass entering the CRWRRF originates from combined sources within the City of Pontiac (466 mg/day) and the other half from the surrounding communities served by the COSDS through the Perry Street Lift Station (471 mg/day).

The most significant sources of PFAS discharging to the collection system are landfills. Landfills were found to contribute enough PFAS to account for half of the PFOS and nearly all the PFOA mass sent to the CRWRRF.

Six collection system branches contributed flow with concentrations above water quality standards. Of these priority areas, two collection system branches contributed ten times more PFOS mass than the rest and should be the focus of future source tracking efforts. Detailed maps were created of all six priority areas and were overlaid by sources with a high likelihood of carrying PFAS compounds. These sources included Part 201 sites. The Part 201 sites that warrant additional investigation are locations with documented groundwater contamination that also had manufacturing or use histories consistent with PFAS contamination. Contaminated groundwater can enter the collection system from remediation strategies that were designed to address other contaminants but do not remove PFAS and discharge the processed water to the collection system. Three manufacturers of metal parts were also identified in the priority areas. These locations can be PFAS sources if they offer chrome plating services and need to complete PFAS use surveys if they have not already done so.

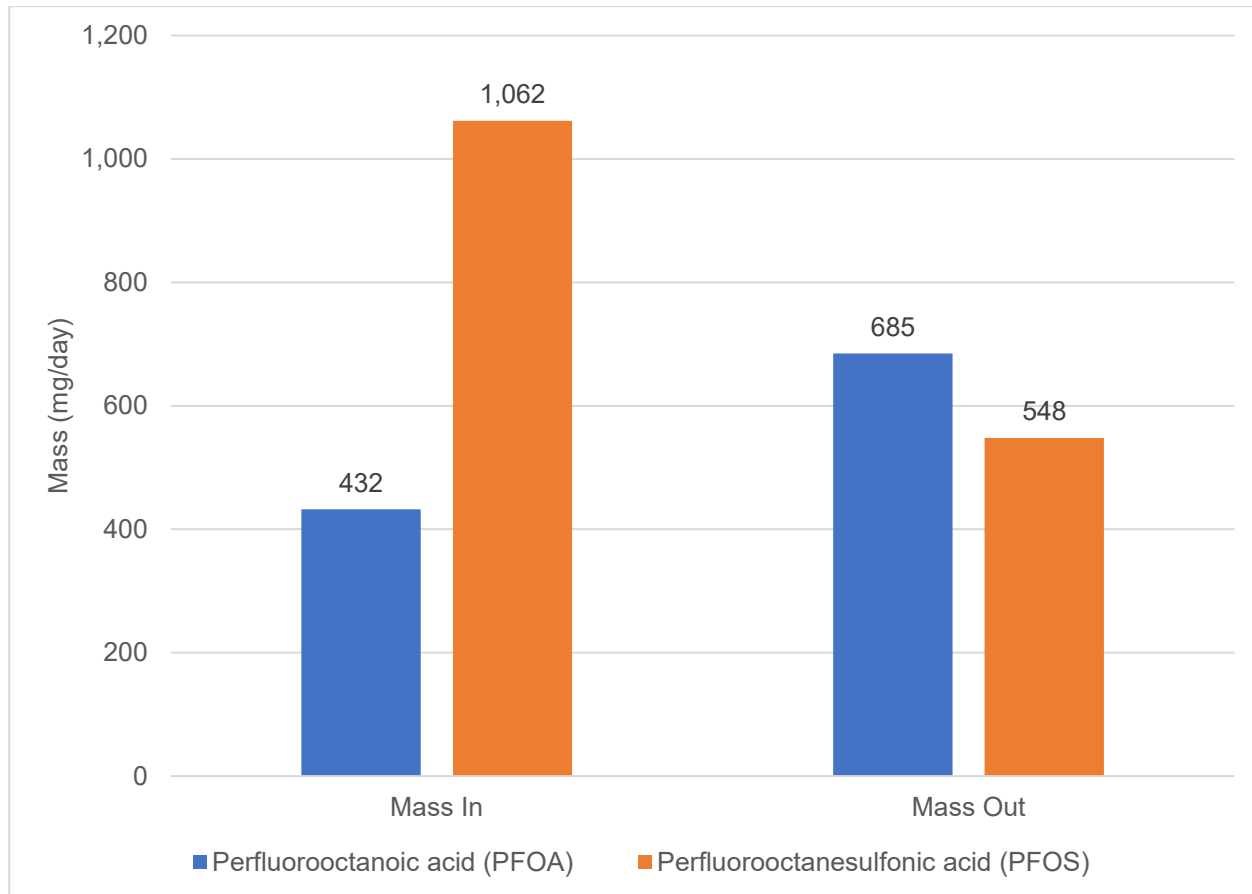
This data represents only one snapshot in time, but illustrates the facility achieved compliance with Rule 57 Surface Water Standards on August 9/17/20. Effluent PFOS concentrations from the CRWRRF were below the surface water standards during the sampling event and the biosolids concentrations were well below the interim limit established by EGLE for biosolids spreading. Effluent PFOA concentrations were well below the surface water standards and there is no biosolids standard for PFOA.

Compound	Rule 57 Standard (ng/L)	CRWRRF Effluent (ng/L)	EGLE Interim Standard (µg/Kg)	CRWRRF Biosolids (µg/Kg)
Perfluorooctanoic acid (PFOA)	12,000	9.7	Not Established	3
Perfluorooctanesulfonic acid (PFOS)	12	6.8	150	8.4

The mass of PFAS were tracked as they entered and exited the CRWRRF. The compound PFOA increases as it moved through the facility, likely from the breakdown of unidentified PFAS compounds. Even though the mass of PFOA increase within the facility, the resulting concentration in the effluent is well below the water quality standards. The mass of PFOS drops as it moves through the facility by about half. Half of the starting mass ends in the effluent and biosolids and half of the mass is unaccounted for.



Figure 2. CRWRRF PFOS and PFOA Mass Balance



This project identifies several steps WRC can take to consistently meet effluent standards at the CRWRRF. These steps include:

- Manage Perry Street Lift Station pumping rates
- Establish PFAS Local Limits to bring known sources into compliance
- Require significant sources to develop PFAS minimization plans consistent with Local Limits
- Continue source tracking efforts by sampling at prioritized locations
- Send PFAS use surveys to industries involved in metal related manufacturing and those in the Non-domestic User Accounts that have a potential to contribute PFAS to the collection system
- Quantify wet weather PFAS loading
- Quantify PFAS Air Loss

This forward-thinking evaluation has demonstrated WRC's commitment to meet the Michigan PFAS standards by identifying significant sources that will enable WRC to require dischargers to meet discharge limits and protect the public health and water quality in the Clinton River.

**DRAIN CHANGE ORDER NO. 44**

Jim Nash, Oakland County Water Resources Commissioner

For Construction of the Biosolids Handling and Septage Receiving FacilityLocated in City of Pontiac, Oakland County, MichiganCONTRACTOR: Tooles Contracting Group LLCAddress: 535 Griswold Suite 2550Detroit, MI 48226

Authorization for Extras To &amp; Changes In Contract

Change Order No: 44 Date Issued: 4/26/2021

Auth No.	Location-Description-Reason	Unit Used	Est. Quant.	Unit Price	Amount Increase	Amount Decrease
	<b><u>LOCATION:</u></b> Clinton River Water Resource Recovery Facility <b>1, 3</b> Digester Building <b>2</b> Septage Receiving Facility <b>4-8</b> Biosolids Handling Building <b>8</b> Administration Building  <b><u>DESCRIPTION:</u></b>					
<b>1</b>	<b>Change/Add</b> Provide all materials, labor, and equipment to install conduit supports (including concrete foundations) and two additional explosion proof junction boxes for Ductbanks G & I, as described in the attached Field Change Request #26, dated January 10, 2019.	LS	1	\$19,289.07	\$19,289.07	---
<b>2</b>	<b>Change/Add</b> Provide all materials, labor, and equipment to install piping, heat tracing, and insulation for the ph/conductivity sensor assemblies at the Septage Receiving Facility, as described in the attached Field Change Request #41, dated December 2, 2020.	LS	1	\$9,178.17	\$9,178.17	---
<b>3</b>	<b>Change/Add</b> Provide all materials, labor, and equipment to recalibrate the Primary Digester Tank No. 1 level (pressure) sensor, as described in Field Change Request #43, dated July 31, 2020.	LS	1	\$202.86	\$202.86	---
<b>4</b>	<b>Change/Add</b> Provide all materials, labor, and equipment to install pipe taps and pressure gauges for use with PSL-213, PSL-214, PSL-115, PSL-116, PSL-117, as described in Field Change Request #46, dated December 4, 2020.	LS	1	\$4,822.65	\$4,822.65	---
<b>5</b>	<b>Change/Add</b> Provide all materials, labor, and equipment to install handrail on the northwest side of the centrifuge platform, as described in Field Change Request #49 dated February 8, 2021.	LS	1	\$7,498.44	\$7,498.44	---

CONTRACTOR: Tooles Contracting Group LLCAddress: 535 Griswold Suite 2550Detroit, MI 48226

Authorization for Extras To &amp; Changes In Contract

Change Order No: 44 Date Issued: 4/26/2021

Auth No.	Location-Description-Reason	Unit Used	Est. Quant.	Unit Price	Amount Increase	Amount Decrease
6	<b>Change/Deduct</b> Provide credits for all materials, labor, and equipment changes required to provide a Size 1 starter for EF-2 in lieu of a 10 HP VFD, as described in Work Directive #02, dated November 09, 2017.	LS	-1	\$4,674.15	---	\$4,674.15
7	<b>Change/Deduct</b> Provide credits for all materials, labor, and equipment changes required to provide mechanical temperature regulating valve control for the shell and tube heat exchanger in lieu of a control panel and motorized control valve arrangement, as described in Work Directive #28, dated September 27, 2018.	LS	-1	\$9,196.64	---	\$9,196.64
8	<b>Change/Add</b> Provide all materials, labor, and equipment to provide an upgraded network switch model and to connect the post-dewatering centrifuge feed pump suction valve limit switches to the BPP, as described in Work Directive #41, dated March 25, 2019.	LS	1	\$14,481.44	\$14,481.44	---
9	<b>Change/Deduct</b> Provide a credit for the Hazardous Materials Allowance that was not used on this project.	LS	-1	\$30,000.00	---	\$30,000.00
10	<b>Change/Deduct</b> Provide a credit for the balance of the DTE Allowance that was not used on this project.	LS	-1	\$14,300.00	---	\$14,300.00
	<b><u>REASON:</u></b>					
1	Unforeseen site conditions required the duct banks to be supported off of foundation supports in lieu of being supported off of the exterior digester wall. Two additional explosion proof junction boxes were required to accommodate the new ductbank layout.					
2	The flushing connections are required to optimize the equipment's performance as determined by the equipment manufacturer's rep during equipment start-up/checkout.					
3	The Primary Digester Tank No. 1 level (pressure) sensor was relocated as part of a work directive and as a result required recalibration at the new elevation.					

CONTRACTOR: Tooles Contracting Group LLCAddress: 535 Griswold Suite 2550Detroit, MI 48226

Authorization for Extras To &amp; Changes In Contract


Change Order No: 44 Date Issued: 4/26/2021

Auth No.	Location-Description-Reason	Unit Used	Est. Quant.	Unit Price	Amount Increase	Amount Decrease
4	Additional pressure gauges were installed to verify pressure switch setpoints and to assist plant personnel in maintenance/troubleshooting activities.					
5	Handrail was installed to eliminate a safety hazard associated with a gap between the platform grating and building wall that resulted from unforeseen site conditions.					
6	HVAC design requires EF-2 to be constant speed (starter) not variable speed (VFD) driven.					
7	The control method for the shell and tube heat exchanger was modified to simplify its operation and provide less equipment for plant staff to maintain.					
8	The network switch that was selected during design has become obsolete. The post-dewatering centrifuge feed pump suction valve limit switches need to be connected to SCADA for remote monitoring.					
9	The Hazardous Materials Allowance was not needed or used.					
10	The balance of the DTE Allowance was not needed or used.					
	Note: CDM Smith and WRC have reviewed the methods and costs of this work based upon similar work of this type. The prices in this change order are fair and reasonable. See attached backup materials from Tooles Contracting Group.					
Totals					\$55,472.63	\$58,170.79
Net Decrease					---	\$2,698.16

CHANGE ORDER NO. 44

JIM NASH Water Resources Commissioner

For Construction of the Biosolids Handling and Septage Receiving Facility

Prepared by:  Date: 04/28/2021  
Project Engineer – Razik Alsaigh - PE  
Oakland County Water Resources Commissioner's Office

Recommended by:  Date: 4/28/2021  
Consulting Engineer – Edward St John - PE  
CDM Smith - Consulting Engineer

Approved by:  Date: April 28, 2021  
Chief Engineer – Gary Nigro - PE  
Oakland County Water Resources Commissioner's Office

The Contractor agrees to do the work described above and agrees to accept payment in full on the basis indicated.

Accepted by:  Date: 04/28/2021  
of: Tooles Contracting Group LLC

Approved by:  Date: 4/30/2021  
Manager – Sidney Lockhart, P.E.  
Construction Management  
Oakland County Water Resources Commissioner's Office

The Contractor is hereby authorized and instructed to do the work described above in accordance with the terms of the Contract.

This Change Order No. 44 was approved by the Drainage Board on: \_\_\_\_\_

JIM NASH  
OAKLAND COUNTY WATER RESOURCES COMMISSIONER

**MEMO TO:** Mr. Jim Nash, Chairman  
of the Drainage Board for the CLINTON RIVER WATER RESOURCE RECOVERY FACILITY DRAIN - (Construction)

**FROM:** Shawn Phelps, Chief of Fiscal Services  
OCWRC Accounting



**DATE:** May 18, 2021

**SUBJECT:** Request for Board approval of payment of the following invoices:

	Ref No.	For	Amount
CDM Smith Michigan, Inc	TBP	Invoice # 48 - Engineering Admin - 03/07/21 - 04/10/21 - Proj 1-2181	24,712.76
Dickinson Wright PLLC	V # 1520736	Invoice # 1564563 - Legal Services - 02/28/21 - Proj #1-2181	1,125.00
Dickinson Wright PLLC	TBP	Invoice # 1571524 - Legal Services - 03/31/21 - Proj #1-2181	3,375.00
		<b>Total for Project # 1-2181</b>	<b>\$ 29,212.76</b>

**MEMO TO:** Mr. Jim Nash, Chairman  
of the Drainage Board for the CLINTON RIVER WATER RESOURCE RECOVERY FACILITY DRAIN - (Maintenance)

**FROM:** Shawn Phelps, Chief of Fiscal Services  
OCWRC Accounting

*Shawn Phelps*

**DATE:** May 18, 2021

**SUBJECT:** Request for Approval of Invoices

The following is a detail of charges paid from the Drain Revolving Fund and Invoices for the period of April 17, 2021 to May 16, 2021.

Payable To	Ref No.	For	Amount
USA Blue Book	Apr 2021 Pcard	Pcard - Lab Supplies	\$ 1,222.29
USA Blue Book	Apr 2021 Pcard	Pcard - Lab Supplies	1,345.27
The Macomb Group Inc	Apr 2021 Pcard	Pcard - Materials and Supplies	1,449.67
Applied Industrial Technologies	Apr 2021 Pcard	Pcard - Materials and Supplies	1,385.04
Grainger	Apr 2021 Pcard	Pcard - Materials and Supplies	1,116.57
Nalco Water Pretreatment Solutions, LLC	Apr 2021 Pcard	Pcard - Materials and Supplies	1,355.70
Nalco Water Pretreatment Solutions, LLC	Apr 2021 Pcard	Pcard - Materials and Supplies	3,045.22
PVS Technologies Inc	V # 1524190	Invoice # 286491 - Chemical Treatment	10,187.04
Polydyne Inc	TBP	Invoice # 1537865 - Chemical Treatment	34,707.20
Professional Building Services LLC	TBP	Invoice # 2259 - Contracted Services - April 2021	1,326.00
D3W Industries	TBP	Invoice # 2472 - Material and Supplies	5,775.00
Atlas Copco Compressors LLC	TBP	Invoice # 1121028121 - Material and Supplies	1,354.28
Eurofins TestAmerica	V # 1523157	Invoice # 1900007226 - Laboratory Fees	1,358.20
McNaughton-McKay Electric Company	TBP	Invoice # 21351491-00 - Material and Supplies	1,103.90
Dickinson Wright PLLC	V # 1521863	Invoice # 1571536 - Legal Services - 03/31/2021	6,652.10
Process Piping & Equipment	TBP	Invoice # 1 - Contracted Services - 01/31/2021	8,345.73
<b>Subtotal</b>			<b>\$ 81,729.21</b>
CSM Mechanical LLC	V # 1524650	Invoice # 2020-0172 - Contracted Services - Proj #1-2921	\$ 55,305.00
<b>Subtotal - Project 1-2921</b>			<b>\$ 55,305.00</b>
Ch2m Hill Engineers Inc	TBP	Invoice # 683676CH024 - Professional Services - 02/26/21 - Proj# 1-3177	\$ 4,933.73
Ch2m Hill Engineers Inc	TBP	Invoice # 683676CH027 - Professional Services - 04/02/21 - Proj# 1-3177	444.06
<b>Subtotal - Project 1-3177</b>			<b>\$ 5,377.79</b>
OHM	TBP	Invoice # 333471 - Contracted Services - 04/24/21 - Proj # 1-3269	\$ 6,257.75
<b>Subtotal - Project 1-3269</b>			<b>\$ 6,257.75</b>
Tetra Tech, Inc	V # 1517319	Invoice # 51729185 - Contracted Services - 04/23/21 - Proj # 1-3304	\$ 2,320.50
<b>Subtotal - Project 1-3304</b>			<b>\$ 2,320.50</b>
CH2M Hill Engineers, Inc	TBP	Invoice # 683676CH027 - Contracted Services - 4/02/21 - Proj # 1-3362	1,074.94
<b>Subtotal - Project 1-3362</b>			<b>\$ 1,074.94</b>
<b>Total</b>			<b>\$ 152,065.19</b>



## **5. George W. Kuhn Drain**

## **AGENDA**

### **DRAINAGE BOARD FOR THE GEORGE W. KUHN DRAIN**

May 18, 2021

1. Call meeting to order
2. Approve minutes of meeting of April 27, 2021
3. Public Comments
4. Present Memorandum from Joel Kohn, Environmental Planner, dated May 18, 2021 requesting the Board approve OHM Advisors scope of work for ongoing stormwater standards coordination for an estimated \$160,000 which includes \$40,000 allowance for additional as-needed services
5. Change order no. 4 for Weiss Construction for a net increase in the amount of \$112,481.11
6. Present request for Board approval of payment of invoices in the amount of \$120,927.97
7. Other business
8. Approve pro rata payment to Drainage Board members
9. Adjourn

**MINUTES OF THE MEETING OF THE DRAINAGE BOARD  
FOR THE GEORGE W. KUHN DRAIN**

April 27, 2021

A meeting of the Drainage Board for the George W. Kuhn Drain was held at 2:00 p.m. on the 27<sup>th</sup> day of April, 2021. Due to the COVID-19 pandemic, the meeting was conducted electronically via GoToMeeting in accordance with PA 254 of 2020, as may be amended from time to time and/or as otherwise provided by law.

The meeting was called to order by the Chairperson. The Board indicated where they were physically located at the time of the meeting as follows:

PRESENT: Jim Nash, Oakland County Water Resources Commissioner, participating from Farmington Hills, Michigan.

David Woodward, Chairperson of the Oakland County Board of Commissioners, participating from Royal Oak, Michigan.

Gwen Markham, Chairperson of the Finance Committee, Oakland County Board of Commissioners, participating from Novi, Michigan.

ABSENT: None.

Minutes of the meeting held March 23, 2021 were presented for consideration. It was moved by Markham, supported by Woodward, that the minutes be approved.

ROLL CALL VOTE:

NASH: AYE

MARKHAM: AYE

WOODWARD: AYE

Chairperson Nash asked if there were any public comments. There were none.

A Memorandum from Jim Wineka, P.E., Assistant Chief Engineer, dated April 27, 2021 requesting the Board to support the OAKSTEM 2021 Street Tree Enhancement program for a not-to-exceed amount of \$50,000 was presented. It was moved by Markham, supported by Woodward, to approve support for the OAKSTEM 2021 Street Tree Enhancement program for a not-to-exceed amount of \$50,000 as presented.

ROLL CALL VOTE:

NASH: AYE

MARKHAM: AYE

WOODWARD: AYE

A Memorandum from Gary Nigro, P.E., Chief Engineer, dated April 27, 2021, requesting the Board approve the Drainage District major maintenance and capital improvement projects for a not-to-exceed amount of \$1,386,500 was presented. It was moved

by Markham, supported by Woodward, to approve the Drainage District major maintenance and capital improvement projects for a not-to-exceed amount of \$1,386,500 as presented.

ROLL CALL VOTE:

NASH: AYE  
MARKHAM: AYE  
WOODWARD: AYE

A Memorandum from Steve Korth, P.E., Manager, dated April 27, 2021, requesting the Board approve the rates and charges for the fiscal year beginning July 1, 2021 was presented. It was moved by Markham, supported by Woodward, to approve the rates and charges for the fiscal year beginning July 1, 2021 as presented.

ROLL CALL VOTE:

NASH: AYE  
MARKHAM: AYE  
WOODWARD: AYE

The Drainage District settlement pertaining to the 2014 flooding mass tort class action litigation was presented and discussed. It was moved by Markham, supported by Woodward, to approve payment of \$8.5 million from George W. Kuhn Drainage District funds pursuant to the terms of the settlement agreement and final order of the court entered on April 8, 2021.

ROLL CALL VOTE:

NASH: AYE  
MARKHAM: AYE  
WOODWARD: AYE

A request for Board approval of payment of invoices and reimbursement of the Drain Revolving Fund in the amount of \$55,884.99 (as attached) was presented. It was moved by Markham, supported by Woodward, that the invoices in the amount of \$55,884.99 be paid as presented.

ROLL CALL VOTE:

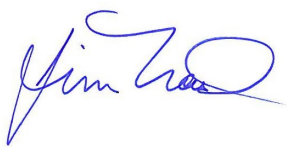
NASH: AYE  
MARKHAM: AYE  
WOODWARD: AYE

It was moved by Nash, supported by Markham, to certify attendance and authorize pro rata payment of \$25 per day to Ms. Markham and Mr. Woodward.

ROLL CALL VOTE:

NASH: AYE  
MARKHAM: AYE  
WOODWARD: AYE

There being no further business, the meeting was adjourned.

A handwritten signature in blue ink, appearing to read "Jim Nash", is positioned above a horizontal line.

---

Jim Nash, Chairperson

STATE OF MICHIGAN                    )  
  )SS.  
COUNTY OF OAKLAND                )

I, the undersigned, do hereby certify that the foregoing is a true and complete copy of the minutes of the Drainage Board for the George W. Kuhn Drain, Oakland County, Michigan, held on the 27<sup>th</sup> day of April, 2021, and that the minutes are on file in the office of the Oakland County Water Resources Commissioner and are available to the public.

I further certify that the notice of the meeting was posted at least 18 hours in advance of the meeting at the office of the Oakland County Water Resources Commissioner which is the principal office of the Drainage Board for the George W. Kuhn Drain Drainage District.



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Jim Nash, Chairperson

Dated: May 7, 2021

**OAKLAND COUNTY  
WATER RESOURCES COMMISSIONER****MEMORANDUM**

**TO:** Jim Nash, Chairperson  
George W. Kuhn Drain Drainage District

**FROM:** Joel Kohn, Environmental Planner

**SUBJECT:** Community Stormwater Standards Coordination – Proposal from OHM Advisors

**DATE:** May 18, 2021

We are requesting the Board to approve ongoing support from OHM Advisors on the facilitation of quarterly technical work group meetings with the drainage district communities with the goal of a district wide stormwater management standard, as well as continued support with the regional stormwater standards rollout. As part of the proposal, this consultant will develop presentations, meeting agendas and summaries for five meetings of the technical work group and four meetings with the regional group.

OHM will also provide stormwater technical standards and memoranda which will include a compiled standards manual. Technical work will also include revised stormwater and soil erosion detail sheets. An operation and maintenance implementation program for green stormwater infrastructure (GSI) including new detail sheets, specifications, and setback guidance will also be developed.

The consultant will assist in the development of a Regional GSI Funding Program for the drainage district. The program will include recommendations for securing grants, utilizing stormwater funds, and exploring potential programs to assist communities in the development of GSI programs and the installation of GSI.

Other work will include assistance with the submittal to EGLE of any necessary MS4 standard revisions for channel protection volume control rainfall depth based on development land use information gathered through the first year of implementation. This will ensure that the required standard is consistent throughout the drainage district and the outlying areas of the county.

Assistance will also be provided for additional services on an as-needed basis to local communities for rule rollout, site plan review workshops, ongoing analysis of land use and development patterns for future EGLE negotiations related to the County's MS4 permit including meetings and preparation of technical memoranda.

This work will take place between April 2021 and June 2022.

**Recommended Action: Approve OHM Advisors scope of work for ongoing stormwater standards coordination for an estimated \$160,000 which includes \$40,000 allowance for additional as-needed services noted above.**



May 5, 2021

Commissioner Jim Nash  
Oakland County Water Resources Commissioner  
One Public Works Drive – Building 95 West  
Waterford, MI 48328

RE: George W Kuhn (GWK) Drainage District  
GWK Community Stormwater Standards – Ongoing Community Coordination  
Proposed Scope of Services

Dear Commissioner Nash:

In 2018-2019, the OCWRC completed a multi-community effort to review existing stormwater and planning/zoning standards within the GWK Drainage District service area and identify opportunities for regional adoption of Green Stormwater Infrastructure (GSI) standards. This was part of a \$50,000 SEMCOG regional coordination grant and OHM assisted with this effort. The project was substantially complete in late 2019, with a final presentation to GWK communities in early 2020. During 2020, OHM continued to assist in ongoing meeting facilitation with the GWK communities with the goal of working toward GWK-wide stormwater management standards. The OCWRC has requested continued support from OHM in 2021 to assist in ongoing GSI and stormwater management work with the GWK communities. The key goals of this ongoing facilitation include:

- Finalize Stormwater Engineering Design Standards.
- Modify existing reference materials on stormwater best management practice (BMP) design.
- Develop a tiered O&M program for the Cities, Villages, Townships (CVTs), and County to track stormwater management installations and maintenance cycles.
- Participate in various meetings with OCWRC, GWK communities, and Regional Stormwater Standards Coordination Committee (RSSCC) representatives.

The scope in this proposal is intended to define technical assistance and meeting facilitation through mid-2022. In late 2020, the GWK Technical Work Group completed a survey that indicated a preference to meet quarterly. Based on that feedback, it is assumed that there will be five meetings held either virtually or in-person if CDC or County Health guidelines allow. Should this process continue beyond mid-2022, OHM will work with the OCWRC to define a scope and fee beyond that period.

### Project Team

The Project Manager for OHM on this project will be Valerie Novaes, PE. She was instrumental in the development of the original GWK regional stormwater study and coordination grant and has developed a relationship with OCWRC staff as well as community representatives. Also assisting on this project will be Greg Kacvinsky, PE (technical analysis of stormwater rules and impacts on development) and Nancy Russell, EIT. OHM will receive assistance from Drummond Carpenter in developing technical components of the stormwater standards and other as-needed assistance.





## Work Plan

The proposed scope includes the following key tasks.

1. **Stormwater Rule Documentation** As part of this task, OHM will assist OCWRC with the finalization of the updated Engineering Design Standards for Stormwater Management Systems. As we understand, OCWRC has been developing four primary sections, with Section I focusing on an overview of the rules with specific standards for water quality, channel protection volume, and flood control. Sections II-IV include more detailed standards for individual stormwater management design components. As we understand, OCWRC submitted Section I to the Chapter 20 drain board for approval in late April 2021, with full Oakland County Board of Commissioners approval expected in June 2021. Sections I, II, III, and IV (and related appendices) will be combined into a new standards document to be posted to the County's website by late May 2021. OHM will perform the following tasks:
  - a. Review and comment on Section I. OHM will provide OCWRC with an edited version of Section I by early April 2021. Upon receiving comments from OCWRC leadership, OHM will make final edits to this document prior to being codified by the drain board and the County Board of Commissioners.
  - b. OHM will provide a brief PowerPoint presentation for OCWRC to use for executive level communication; this presentation will include key talking points of the new rules, as well as intended environmental and economic impacts. This draft PowerPoint will be provided to the OCWRC by mid-April 2021.
  - c. Review and comment on Sections II, III, and IV. OHM will review these sections based on previous discussion at the RSSCC meetings. OHM will provide OCWRC with an edited version of Sections II-IV by late May 2021.
  - d. OHM will reformat and compile the stormwater standards document to be visually consistent, including a Table of Contents, Cover Page, Appendices, and relevant figures/exhibits. Existing material will be imported from the existing Design Standards (last updated in January 2019) as necessary to supplement Sections I-IV.
  - e. OCWRC will provide OHM with all native files (Microsoft Word) for Sections I-IV, as well as Appendices, draft figures, and the existing Design Standards.
  - f. OHM will focus on existing reference materials on stormwater Best Management Practice (BMP) design from other recent stormwater standards, including, but not limited to, DWSD, Wayne County, and Washtenaw County. This will help to maintain a shorter Design Standards manual and will help to provide regional consistency.
  - g. OHM will add details as necessary to illustrate the proposed stormwater treatment profile; these details are already in draft form, and OHM will update these as necessary to reflect the updated manual.
  - h. OHM will add a Sequence of Construction to the Design Standards that focuses on the timing of constructing Green Stormwater Infrastructure. This sequence will also be referenced in the Revised Soil Erosion detail sheet.
  - i. OHM will create a template Operation & Maintenance (O&M) site plan sheet to be used by site plan applicants to show the extents of the proposed stormwater management system, key land use data (for EGLE tracking), O&M plans, and an Owner Certification for system maintenance.
  - j. OHM will draft a sample ordinance for the County legal team to review for Cities, Villages, and Townships (CVTs) to adopt the OCWRC stormwater rules. This sample language will include an option to set local site development size thresholds for individual communities.
  - k. OHM will provide as-needed assistance to OCWRC staff after the codification of the new standards to communicate with individual communities on the new rules, assist with key talking points to assist in local codification of the rules, and, if requested, to provide guidance on site plan reviews under the new rules.



In early 2022, OHM will work with OCWRC staff to evaluate the effectiveness of the new Design Standards and provide a 6-month revision to the manual that address any inconsistencies or other text that was deemed confusing by the development community. It is assumed that these changes will be limited to Sections II and III and related details and will not require County Board of Commission approval.

2. ***Stormwater Management Guidance.*** During the GWK Technical Work Group meetings in 2020, the GWK communities indicated their desire for guidance with the implementation of the Triple Bottom Line analysis (as presented in the Regional GSI Report), specifically, implementation of an O&M program and municipal code modifications.
  - a. OHM will develop a fillable table with stormwater management information for each site plan to identify the type of stormwater management, calculated volumes, and O&M inspection requirements. This table will be used by the communities and/or County to track the number of installed stormwater management systems. The County can adapt the table to a geodatabase where all CVT's can view stormwater management across the County.
  - b. OHM will develop a tiered O&M program that begins with a handful of communities to provide approved site plan information for the County to track in a smartsheet and/or GIS. The program can eventually be expanded to include more communities and track O&M inspection cycles, functionality of stormwater management, credits, etc.
3. ***Funding Program Assistance.*** OHM will assist with the development of a GWK Drainage District Regional GSI funding program. Since many of the GWK communities do not have a dedicated stormwater funding source, pursuing GSI or sustainability related grants will be key to implementing GSI in the GWK Drainage District.
  - a. Develop a regional funding program framework for GSI. This program will include recommendations for securing available grants, adopting local stormwater enterprise funds, and exploring potential OCWRC programs to assist GWK communities in developing local GSI programs and installing GSI.
4. ***Additional As-needed Services (\$40,000 allowance).*** This additional as-needed task will be used for items that may arise during the project that were not anticipated at the time this proposal was prepared. These may include items such as additional technical support with implementation of the new stormwater standards, additional technical specifications, stakeholder outreach/education meetings, O&M program implementation assistance, site plan review assistance, and site plan review meetings with developers. The budget allowance for this task will not be used without advanced authorization from the County.

With staffing changes at OCWRC this year (retirements), there may be a need for OHM to provide additional assistance to OCWRC and the GWK communities as the new stormwater rules are applied in the second half of 2021. OHM can provide additional assistance under this task as requested by the County.

## Meetings

In order to support the tasks above, OHM will participate in multiple meetings with OCWRC, GWK communities, and RSSCC representatives. These meetings include:

- Quarterly meeting with GWK communities to discuss purposed standards and O&M program. Two additional meetings are planned for smaller group sessions within GWK.
- 2 meetings with CVT Engineering and/or Public Works representatives to discuss the proposed standards and update them on the rollout schedule.
- 1 public workshop to highlight the new rules and provide a detailed overview of key components, including a Q&A session (scheduled for April 20, 2021).



- Prepare for and attend up to 8 additional RSSCC meetings through mid-2022 (assuming bi-monthly meetings).
- 12 meetings between OHM and OCWRC staff (April 2021 to June 2022) to discuss revisions to the individual sections of the stormwater standards, plans for upcoming CVT meetings, O&M tracking program, the public workshop, and the public workshop.
- Attend 2 Oakland County Board of Commissioners meetings to present or answer any questions about the standards.

Each meeting will include meeting preparation, development of PowerPoint presentations, and meeting agendas/summaries. Meetings will be held virtually (via Zoom or similar platform) through mid-2021. Depending on CDC or County guidelines meetings may be held in person starting summer of 2021. Additionally, all meeting materials will be provided in digital form (PDF).

## Schedule

The tasks outlined in this proposal will be performed from April 2021 – June 2022. The schedule can be expanded as necessary to accommodate additional Technical Work Group meetings beyond mid-2022; in that case, OHM will work with OCWRC staff to define the appropriate scope, schedule, and fee.

## Deliverables

The deliverables for this project will include:

- Materials for GWK Technical Work Group meetings (assumed five meetings) and MS4 Standards Rollout meetings (assumed four meetings):
  - PowerPoint presentations
  - Meeting agendas
  - Meeting summaries
- Stormwater Technical Standards
  - Compiled Standards Manual (Sections I-IV and Appendices)
  - Revised stormwater and soil erosion detail sheets
  - O&M and Land Use detail sheet
  - GSI technical specifications and setback guidance
- Technical Memoranda
  - O&M implementation program
  - Funding framework for GSI program and implementation
- Draft Ordinance Resolution
- As-Needed Assistance (only as pre-approved by County staff):
  - Assistance with CVTs on rule rollout, site plan review workshops
  - Ongoing analysis of land use and development patterns for future EGLE negotiation on MS4 permit
  - Additional meetings or technical memoranda, as requested by County staff
- 2022 EGLE submittal for CPVC rainfall depth revisions based on development land use information gathered through the first year of implementation.

Additional meetings, technical specifications, and other out-of-scope efforts that go beyond the additional as-needed services task will be negotiated separately.

## Cost

The estimated fee to complete this work is \$160,000 (including the \$40,000 allowance for additional as-needed services identified in Task 4). This will be billed on an hourly basis per our current As-Needed Services Agreement with the OCWRC.



We are confident that the proposed scope will benefit the GWK Drainage District and will help to break down the barriers to GSI while encouraging economic development in southern Oakland County. We look forward to continuing our efforts with you to realize the widespread adoption of GSI in Oakland County.

If you have any questions, please do not hesitate to contact us.  
Sincerely,

OHM Advisors

---

Gregory P. Kacvinsky, P.E., Principal

cc: Anne Vaara, OCWRC  
Joel Kohn, OCWRC  
Valerie Novaes, P.E., OHM

**CHANGE ORDER NO. 4**

Jim Nash, Oakland County Water Resources Commissioner, County Agency  
 For Construction of the Dequindre Pump Station Rehabilitation- George W. Kuhn Drain Drainage District  
 Located in Madison Heights, Oakland County, Michigan

CONTRACTOR: Weiss Construction

Address: 4000 Renaissance Center, Suite 2170  
Detroit, MI 48243

Authorization for Extras To &amp; Changes In Contract

Change Order No: 4 Date: 5/6/2021

Auth No.	Location-Description-Reason	Unit Used	Est. Quant.	Unit Price	Amount Increase	Amount Decrease
	<b><u>LOCATION:</u></b>  <b>Dequindre Pump Station</b> <b>-George W. Kuhn Drain Drainage District</b>					
	<b><u>DESCRIPTION:</u></b>					
A	<b><u>Extra / Add</u></b> Provide all labor, equipment and materials to relocate electrical conduit, junction boxes and light fixtures to avoid steel canopy installation (reference attached RFI #25)	LS	1	\$16,146.00	\$16,146.00	---
B	<b><u>Extra / Add</u></b> Provide all labor, equipment and materials to install new 4" gas piping from relocated gas meter to Standby Generator and MUA #1. Include new tie-ins for branch lines and all related masonry work.	LS	1	\$23,554.11	\$23,554.11	---
C	<b><u>Extra / Add</u></b> Provide all labor, equipment and materials to supply emergency generator (5) months longer than anticipated to complete the contract work.	LS	1	\$33,486.00	\$33,486.00	---
D	<b><u>Extra / Add</u></b> Provide all labor to integrate the new MAS Pump Monitoring System with the pump station control system (reference attached RFI #8)	LS	1	\$39,295.00	\$39,295.00	---
A	<b><u>REASON:</u></b> Existing site conflicts required electrical changes to be made in order to accommodate the steel canopy installation. Several of the conflicts were resolved with field measurement of the steel canopy at no cost to the project. Temporary (and permanent) conduit relocation along with relocation of various junction boxes and light fixtures were still required to accommodate the steel canopy installation. Masonry repairs related to the electrical relocations are included. Misc. material and coordination labor was negotiated. (3) new steel bollards were installed to protect the DTE transformer after a conduit raceway was relocated.					

JIM NASH

OAKLAND COUNTY WATER RESOURCES COMMISSIONER

CONTRACTOR: Weiss Construction

Authorization for Extras To &amp; Changes In Contract

Address: 4000 Renaissance Center, Suite 2170  
Detroit, MI 48243Change Order No: 4Date: 5/6/2021

Auth No.	Location-Description-Reason	Unit Used	Est. Quant.	Unit Price	Amount Increase	Amount Decrease
B	The gas load to the pump station from the existing 2" gas service supplied by Consumer Power was inadequate to run the new Standby Generator. This was caused by unknown repair points in the existing gas main. It was determined that there was a delivery problem and new 4" gas piping will be required (see Project Meeting Summary dated 10/14/20). In performing this work Consumer Power relocated the gas meter and additional work was required to remove the existing 2" gas service and install new 4" gas piping from the relocated meter to the Standby Generator and MUA #1. Additional valving and tie-in work was necessary along with masonry repairs. All work was performed on a T&M basis					
C	Due to a new 2" gas service required to supply the pump station the emergency generator that was being utilized in case of a primary power outage while the new generator was being installed was needed longer than anticipated. The additional duration was from the time of the initial scheduled startup of the new generator and when the new generator was put into service (see Item B above). This includes rental fees, fuel as well as additional site visits from the generator supplier.					
D	The owner approved MAS Pump Monitoring System has required additional coordination, guidance and revisions to the pump station control system. Actual cost of the work is detailed in the attached back-up information.  Wade Trim has reviewed the methods and costs of this work based upon similar work of this type. These prices are fair and reasonable.					
Totals					\$112,481.11	\$0.00
Net Increase					\$112,481.11	---

CHANGE ORDER NO. 4

JIM NASH Water Resources Commissioner, County Agency

For Construction of the Dequindre Pump Station Rehabilitation- George W. Kuhn Drain Drainage District

Prepared by: Craig Tiell Date: 5/6/21  
Project Engineer – Craig Tiell  
Oakland County Water Resource Commissioner

Recommended by: John Arvai Date: 5/7/2021  
Consulting Engineer – John Arvai, P.E.  
Wade Trim

Digitally signed by John Arvai  
DN: C=US, E=jarvai@wadetrim.com, O=Wade Trim,  
OU=Vice President, CN=John Arvai  
Date: 2021.05.07 15:49:01-04'00'

Approved by: Gary Nigro Date: May 7, 2021  
Chief Engineer – Gary Nigro, P.E.  
Oakland County Water Resource Commissioner

Approved by: \_\_\_\_\_ Date: \_\_\_\_\_  
Special Project - Sid Lockhart, P.E.  
Manager Oakland County Water Resource Commissioner

The Contractor agrees to do the work described above and agrees to accept payment in full on the basis indicated.

Accepted by: Steven A. Korth Project Manager Date: 5/7/2021  
Title  
of: Weiss Construction Co., LLC.

Approved by: Steven Korth Date: May 18, 2021  
Manager – Steven A. Korth, P.E.  
Oakland County Water Resource Commissioner

The Contractor is hereby authorized and instructed to do the work described above in accordance with the terms of the Contract.

JIM NASH  
OAKLAND COUNTY WATER RESOURCES COMMISSIONER



**MEMO TO:** Mr. Jim Nash, Chairman  
of the Drainage Board for the GEORGE W. KUHN DRAIN

**FROM:** Shawn Phelps, Chief of Fiscal Services  
OCWRC Accounting *Sj Phelps*

**DATE:** May 18, 2021

**SUBJECT:** Request for Board approval of payment of the following invoices:

Payable To	Ref No.	For	Amount
Fishbeck	TBP	Invoice # 400288 - Contracted Services - 04/16/21 - Proj # 1-3181	\$ 47,337.28
		<b>Subtotal Project # 1-3181</b>	<b>\$ 47,337.28</b>
DLZ	TBP	Invoice # 145319 - Contracted Services - 04/09/21 - Proj # 1-3301	\$ 9,346.00
		<b>Subtotal Project # 1-3301</b>	<b>\$ 9,346.00</b>
DLZ	TBP	Invoice # 145320 - Contracted Services - 04/09/21 - Proj # 1-3303	\$ 7,647.50
		<b>Subtotal Project # 1-3303</b>	<b>\$ 7,647.50</b>
Pipeline Management Co Inc	TBP	Invoice # 2021-036 - Contracted Services - 03/29-04/09/21	\$ 37,136.74
		<b>Subtotal Project # 1-3261</b>	<b>\$ 37,136.74</b>
Dickinson Wright, PLLC	TBP	Invoice # 1571483 - Legal Services - 03/31/2021	\$ 749.50
Dickinson Wright, PLLC	TBP	Invoice # 1571484 - Legal Services - 03/31/2021	6,195.82
Dickinson Wright, PLLC	TBP	Invoice # 1571485 - Legal Services - 03/31/2021	3,252.58
Dickinson Wright, PLLC	TBP	Invoice # 1571492 - Legal Services - 03/31/2021	909.45
Dickinson Wright, PLLC	TBP	Invoice # 1571512 - Legal Services - 03/31/2021	979.46
Dickinson Wright, PLLC	TBP	Invoice # 1571513 - Legal Services - 03/31/2021	848.62
Dickinson Wright, PLLC	TBP	Invoice # 1571515 - Legal Services - 03/31/2021	822.32
Dickinson Wright, PLLC	TBP	Invoice # 1571516 - Legal Services - 03/31/2021	911.63
Dickinson Wright, PLLC	TBP	Invoice # 1571517 - Legal Services - 03/31/2021	802.26
Dickinson Wright, PLLC	TBP	Invoice # 1571519 - Legal Services - 03/31/2021	770.94
Dickinson Wright, PLLC	TBP	Invoice # 1571521 - Legal Services - 03/31/2021	817.87
Dickinson Wright, PLLC	TBP	Invoice # 1571525 - Legal Services - 03/31/2021	2,400.00
		<b>Subtotal</b>	<b>\$ 19,460.45</b>
		<b>Total</b>	<b>\$ 120,927.97</b>



## **6. Crake Drain**

## **AGENDA**

### **DRAINAGE BOARD FOR THE CRAKE DRAIN**

May 18, 2021

1. Call meeting to order
2. Approve minutes of meeting of April 28, 2020
3. Public Comments
4. Present Maintenance Assessment Recommendation and Special Assessment Roll in the amount of \$22,716
5. Other business
6. Approve pro rata payment to Drainage Board members
7. Adjourn

**MINUTES OF THE MEETING OF THE DRAINAGE BOARD  
FOR THE CRAKE DRAIN**

April 28, 2020

A meeting of the Drainage Board for the Crake Drain was held at 2:00 p.m. on the 28<sup>th</sup> day of April, 2020. The meeting was conducted via GoToMeeting in accordance with the Governor's Executive Order 2020-48 due to the ongoing COVID-19 pandemic. Commissioner Nash read a brief statement regarding the current health crisis and its impact on the Chapter 20 meetings, which can be found in its entirety under "Drainage District Policy".

The meeting was called to order by the Chairperson.

PRESENT: Jim Nash, Oakland County Water Resources Commissioner

Helaine Zack, Chairperson of the Finance Committee, Oakland County Board of Commissioners

ABSENT: David Woodward, Chairperson of the Oakland County Board of Commissioners

Minutes of the meeting held March 26, 2019 were presented for consideration. It was moved by Zack, supported by Nash, that the minutes be approved.

ADOPTED: Yeas - 2  
Nays - 0

Chairperson Nash asked if there were any public comments. There were none.

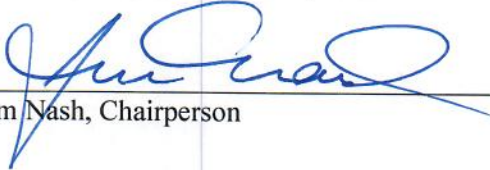
A request for reimbursement of the Drain Revolving Fund in the amount of \$7,018.95 (as attached) was presented. It was moved by Zack, supported by Nash, to reimburse the Drain Revolving Fund in the amount of \$7,018.95.

ADOPTED: Yeas - 2  
Nays - 0

It was moved by Nash, supported by Zack, to certify attendance and authorize pro rata payment of \$25 per day to Ms. Zack.

ADOPTED: Yeas - 2  
Nays - 0

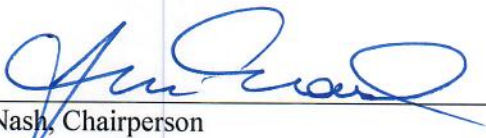
There being no further business, the meeting was adjourned.

  
\_\_\_\_\_  
Jim Nash, Chairperson

STATE OF MICHIGAN                    )  
  )SS.  
COUNTY OF OAKLAND                )

I, the undersigned, do hereby certify that the foregoing is a true and complete copy of the minutes of the Drainage Board of the Crake Drain, Oakland County, Michigan, held on the 28<sup>th</sup> day of April, 2020, and that the minutes are on file in the office of the Oakland County Water Resources Commissioner and are available to the public.

I further certify that the notice of the meeting was posted at least 18 hours in advance of the meeting at the office of the Oakland County Water Resources Commissioner which is the principal office of the Drainage Board for the Crake Drain Drainage District.

  
\_\_\_\_\_  
Jim Nash, Chairperson

Dated: May 13, 2020

**OAKLAND COUNTY WATER RESOURCES COMMISSIONER**  
**MAINTENANCE ASSESSMENT RECOMMENDATION FOR THE**  
**Crake Drain**

Assessment for current fund deficit and estimated maintenance expenses for fiscal years: 2021 through 2023

Date last assessment approved:	03/26/19	
Last Assessment:		\$45,482
Current Available Cash:		(\$1,116)

<b>Expenditure History:</b>	<b>Fiscal Year</b>	<b>Amount</b>
	2014	\$9,407
	2015	\$3,269
	2016	\$2,638
	2017	\$5,881
	2018	\$5,653
	2019	\$3,103
	2020	\$15,733

<b>Estimated Expenditures:</b>	<b>Year</b>	<b>Amount</b>
	2021	\$7,200
	2022	\$7,200
	2023	\$7,200
	<b>Total</b>	<b>\$21,600</b>

**Recommended Assessment:**

Current Cash Deficit	\$1,116
Total Anticipated Expenses 2021 - 2023	\$21,600

<b>TOTAL RECOMMENDED ASSESSMENT</b>	<b>\$22,716</b>
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Prepared by: Michael R. McMahon Date: May 18, 2021  
Michael R. McMahon, P.E. - Chief Engineer

Approved by: Steven Korth Date: May 18, 2021  
Steven A. Korth, P.E. - Manager

Note: Current Available Cash as of March 31, 2021, Fiscal Services Division Report.

# SPECIAL ASSESSMENT ROLL FOR THE MAINTENANCE OF THE CRAKE DRAIN

Public Corporation	*Percentage of Apportionment	Total Amount of Assessment	Payment #1	Payment #2	Payment #3
City of Rochester Hills	89.6500%	\$ 20,364.89	\$ 20,364.89	-	-
County of Oakland	6.0100%	\$ 1,365.24	\$ 1,365.24	-	-
State of Michigan	4.3400%	\$ 985.87	\$ 985.87	-	-
<hr/>					
Total	<b>100.000%</b>	<b>\$ 22,716.00</b>	<b>\$ 22,716.00</b>	<b>\$ -</b>	<b>\$ -</b>

\*Apportionment based on Final Order of Apportionment dated 5/14/1991.

Assessment Payment Due Date(s): Payment #1 06/30/2021

I hereby certify that I have prepared the Special Assessment Roll for the Maintenance of the Crake Drain for the fiscal years 2021- 2023 in accordance with the direction of the Drainage Board and the statutory provisions applicable thereto.

\_\_\_\_\_  
Jim Nash  
Chairman of the Drainage Board for the Crake Drain

The foregoing Special Assessment Roll for the maintenance of the Crake Drain was approved by the Drainage Board on \_\_\_\_\_.

\_\_\_\_\_  
Jim Nash  
Chairman of the Drainage Board for the Crake Drain

## **7. Gosling Drain**

## **AGENDA**

### **DRAINAGE BOARD FOR THE GOSLING DRAIN**

May 18, 2020

1. Call meeting to order
2. Approve minutes of meeting of July 18, 2006
3. Public Comments
4. Present Maintenance Assessment Recommendation and Special Assessment Roll in the amount of \$8,550
5. Other business
6. Approve pro rata payment to Drainage Board members
7. Adjourn



**MINUTES OF THE MEETING OF THE DRAINAGE BOARD  
FOR THE GOSLING DRAIN**

**JULY 18, 2006**

A meeting of the Drainage Board for the Gosling Drain was held in the office of the Oakland County Drain Commissioner, Public Works Building, One Public Works Drive, Waterford, Michigan on the 18th day of July, 2006.

The meeting was called to order by the Chairperson.

PRESENT: John P. McCulloch, Chairperson and  
Oakland County Drain Commissioner

Bill Bullard, Jr., Chairperson of the  
Oakland County Board of Commissioners

ABSENT: Chuck Moss, Chairperson of the Finance Committee  
Oakland County Board of Commissioners

ALSO

PRESENT: Kevin R. Larsen, Chief Deputy  
Oakland County Drain Commissioner

Joseph P. Kozma,  
Deputy and Manager,  
Engineering & Construction

Elaine Van Dyke  
Secretary

Lynn Sonkiss,  
Chief of Fiscal Services

Jeremy Adams,  
Fiscal Services Division

Sid Lockhart,  
Civil Engineer

Gary Nigro,  
Civil Engineer

Terry Dohany,  
Secretary

J. Bryan Williams  
Dickinson Wright PLLC

Minutes of the meeting held May 11, 1993 were presented for consideration. It was moved by Bullard, supported by McCulloch, that the minutes be approved as presented.

ADOPTED: Yeas - 2  
Nays - 0

Mr. McCulloch asked if there were any comments from those in attendance. There were none.

Request for Reimbursement of Drain Revolving Fund in the amount of \$1,236.25 was presented for approval. It was moved by Bullard, supported by McCulloch, to approve Request for Reimbursement of Drain Revolving Fund in the amount of \$1,236.25.

ADOPTED: Yeas - 2  
Nays - 0

It was moved by McCulloch, supported by Bullard to certify attendance and authorize pro-rata payment of \$25.00 per day to Mr. Bullard.

ADOPTED: Yeas - 2  
Nays - 0

There being no further business, the meeting was adjourned.

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John P. McCulloch, Chairperson

**OAKLAND COUNTY WATER RESOURCES COMMISSIONER**  
**MAINTENANCE ASSESSMENT RECOMMENDATION FOR THE**  
**Gosling Drain**

Assessment for current fund deficit and estimated maintenance expenses for fiscal years: 2021 through 2023

Date last assessment approved:	N/A	
Last Assessment:		N/A
Current Available Cash:		(\$2,550)

<b>Expenditure History:</b>	<b>Fiscal Year</b>	<b>Amount</b>
	2014	\$806
	2015	\$1,413
	2016	\$954
	2017	\$2,365
	2018	\$1,306
	2019	\$1,218
	2020	\$2,339

<b>Estimated Expenditures:</b>	<b>Year</b>	<b>Amount</b>
	2021	\$2,000
	2022	\$2,000
	2023	\$2,000
	<b>Total</b>	<b>\$6,000</b>

**Recommended Assessment:**

Current Cash Deficit	\$2,550
Total Anticipated Expenses 2021 - 2023	\$6,000

<b>TOTAL RECOMMENDED ASSESSMENT</b>	<b>\$8,550</b>
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Prepared by: Michael R. McMahon Date: May 18, 2021  
Michael R. McMahon, P.E. - Chief Engineer

Approved by: Steven Korth Date: May 18, 2021  
Steven A. Korth, P.E. - Manager

Note: Current Available Cash as of March 31, 2021, Fiscal Services Division Report.

# SPECIAL ASSESSMENT ROLL FOR THE MAINTENANCE OF THE GOSLING DRAIN

Public Corporation	*Percentage of Apportionment	Total Amount of Assessment	Payment #1	Payment #2	Payment #3
Charter Township of Oakland	64.1600%	\$ 5,485.68	\$ 5,485.68	-	-
County of Oakland	35.8400%	\$ 3,064.32	\$ 3,064.32	-	-
<hr/>					
Total	100.000%	\$ 8,550.00	\$ 8,550.00	\$ -	\$ -

\*Apportionment based on Final Order of Apportionment dated 12/1/1982.

Assessment Payment Due Date(s): Payment #1 06/30/2021

I hereby certify that I have prepared the Special Assessment Roll for the Maintenance of the Gosling Drain for the fiscal years 2021- 2023 in accordance with the direction of the Drainage Board and the statutory provisions applicable thereto.

\_\_\_\_\_  
Jim Nash  
Chairman of the Drainage Board for the Gosling Drain

The foregoing Special Assessment Roll for the maintenance of the Gosling Drain was approved by the Drainage Board on \_\_\_\_\_.

\_\_\_\_\_  
Jim Nash  
Chairman of the Drainage Board for the Gosling Drain

## **8. Hobart Drain**

## **AGENDA**

### **DRAINAGE BOARD FOR THE HOBART DRAIN**

May 18, 2021

1. Call meeting to order
2. Approve minutes of meeting of September 25, 2018
3. Public Comments
4. Present Maintenance Assessment Recommendation and Special Assessment Roll in the amount of \$12,886
5. Other business
6. Approve pro rata payment to Drainage Board members
7. Adjourn

**MINUTES OF THE MEETING OF THE DRAINAGE BOARD  
FOR THE HOBART DRAIN**

September 25, 2018

A meeting of the Drainage Board for the Hobart Drain was held at the office of the Oakland County Water Resources Commissioner, Public Works Building, One Public Works Drive, Waterford, Michigan at 2:00 p.m. on the 25<sup>th</sup> day of September, 2018.

The meeting was called to order by the Acting Chairperson.

PRESENT: Anne Vaara, Chief Deputy Oakland County Water Resources Commissioner  
Acting Chairperson on behalf of Oakland County Water Resources Commissioner  
Jim Nash

Thomas F. Middleton, Chairperson of the Finance Committee,  
Oakland County Board of Commissioners

ABSENT: Michael Gingell, Chairperson of the Oakland County Board of Commissioners

Jim Nash, Oakland County Water Resources Commissioner

Minutes of the meeting held July 15, 2014 were presented for consideration. It was moved by Middleton, supported by Vaara, that the minutes be approved.

ADOPTED: Yeas - 2  
Nays - 0

Acting Chairperson Vaara asked if there were any public comments. There were none.

A Maintenance Assessment Recommendation and Special Assessment Roll for the Hobart Drain in the amount of \$11,816 (as attached) were presented. It was moved by Middleton, supported by Vaara, that the Maintenance Assessment Recommendation and Special Assessment Roll be adopted in the amount of \$11,816.

ADOPTED: Yeas - 2  
Nays - 0

It was moved by Vaara, supported by Middleton, to certify attendance and authorize pro rata payment of \$25 per day to Mr. Middleton.

ADOPTED: Yeas - 2  
Nays - 0

There being no further business, the meeting was adjourned.



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Anne Vaara, Acting Chairperson

STATE OF MICHIGAN                    )  
  )SS.  
COUNTY OF OAKLAND                )

I, the undersigned, do hereby certify that the foregoing is a true and complete copy of the minutes of the Hobart Drain, Oakland County, Michigan, held on the 25<sup>th</sup> day of September, 2018, and that the minutes are on file in the office of the Oakland County Water Resources Commissioner and are available to the public.

I further certify that the notice of the meeting was posted at least 18 hours in advance of the meeting at the office of the Oakland County Water Resources Commissioner which is the principal office of the Hobart Drain Drainage District.

  
\_\_\_\_\_  
Anne Vaara, Acting Chairperson

Dated: October 17<sup>th</sup>, 2018



**OAKLAND COUNTY WATER RESOURCES COMMISSIONER**  
**MAINTENANCE ASSESSMENT RECOMMENDATION FOR THE**  
**Hobart Drain**

Assessment for current fund deficit and estimated maintenance expenses for fiscal years: 2021 through 2023

Date last assessment approved:	09/25/18	
Last Assessment:		\$11,816
Current Available Cash:		(\$1,286)

<b>Expenditure History:</b>	<b>Fiscal Year</b>	<b>Amount</b>
	2014	\$2,722
	2015	\$1,858
	2016	\$2,510
	2017	\$1,652
	2018	\$2,926
	2019	\$4,921
	2020	\$3,755

<b>Estimated Expenditures:</b>	<b>Year</b>	<b>Amount</b>
	2021	\$3,500
	2022	\$3,500
	2023	\$3,500
	<b>Total</b>	<b>\$10,500</b>

**Recommended Assessment:**

Current Cash Deficit	\$1,286
Total Anticipated Expenses 2021 - 2023	\$10,500
Proposed Special Maintenance Expenses	\$1,100

<b>TOTAL RECOMMENDED ASSESSMENT</b>	<b>\$12,886</b>
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Prepared by: <u>Michael R. McMahon</u>	Date: <u>May 18, 2021</u>
Michael R. McMahon, P.E. - Chief Engineer	

Approved by: <u>Steven Korth</u>	Date: <u>May 18, 2021</u>
Steven A. Korth, P.E. - Manager	

Note: Current Available Cash as of March 31, 2021, Fiscal Services Division Report.

# SPECIAL ASSESSMENT ROLL FOR THE MAINTENANCE OF THE HOBART DRAIN

Public Corporation	*Percentage of Apportionment	Total Amount of Assessment	Payment #1	Payment #2	Payment #3
City of Auburn Hills	89.1100%	\$ 11,482.71	\$ 11,482.71	-	-
County of Oakland	10.8900%	\$ 1,403.29	\$ 1,403.29	-	-
<hr/>					
Total	100.000%	\$ 12,886.00	\$ 12,886.00	\$ -	\$ -

\*Apportionment based on Final Order of Apportionment dated 10/24/1995.

Assessment Payment Due Date(s): Payment #1 06/30/2021

I hereby certify that I have prepared the Special Assessment Roll for the Maintenance of the Hobart Drain for the fiscal years 2021- 2023 in accordance with the direction of the Drainage Board and the statutory provisions applicable thereto.

\_\_\_\_\_  
Jim Nash  
Chairman of the Drainage Board for the Hobart Drain

The foregoing Special Assessment Roll for the maintenance of the Hobart Drain was approved by the Drainage Board on \_\_\_\_\_ .

\_\_\_\_\_  
Jim Nash  
Chairman of the Drainage Board for the Hobart Drain

**9. Nancy Dingeldey Drain**

## **AGENDA**

### **DRAINAGE BOARD FOR THE NANCY DINGELDEY DRAIN**

May 18, 2021

1. Call meeting to order
2. Approve minutes of meeting of August 28, 2018
3. Public Comments
4. Present Maintenance Assessment Recommendation and Special Assessment Roll in the amount of \$8,300
5. Other business
6. Approve pro rata payment to Drainage Board members
7. Adjourn

**MINUTES OF THE MEETING OF THE DRAINAGE BOARD  
FOR THE NANCY DINGELDEY DRAIN**

August 28, 2018

A meeting of the Drainage Board for the Nancy Dingeldey Drain was held in the office of the Oakland County Water Resources Commissioner, Public Works Building, One Public Works Drive, Waterford, Michigan on the 28<sup>th</sup> day of August, 2018.

The meeting was called to order by the Chairperson.

PRESENT: Jim Nash, Oakland County Water Resources Commissioner

Thomas F. Middleton, Chairperson of the Finance Committee,  
Oakland County Board of Commissioners

ABSENT: Michael Gingell, Chairperson of the Oakland County Board of Commissioners

Minutes of the meeting held March 24, 2009 were presented for consideration. It was moved by Middleton, supported by Nash, that the minutes be approved.

ADOPTED: Yeas - 2  
Nays - 0

Chairperson Nash asked if there were any public comments. There were none.

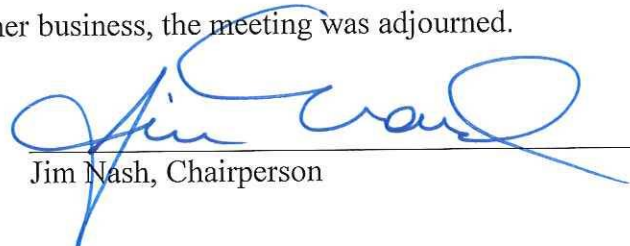
A Maintenance Assessment Recommendation and Special Assessment Roll for the Nancy Dingeldey Drain in the amount of \$11,177 (as attached) were presented. It was moved by Middleton, supported by Nash, to adopt the Maintenance Assessment Recommendation and Special Assessment Roll in the amount of \$11,177 as presented

ADOPTED: Yeas - 2  
Nays - 0

It was moved by Nash, supported by Middleton, to certify attendance and authorize pro rata payment of \$25 per day to Mr. Middleton.

ADOPTED: Yeas - 2  
Nays - 0

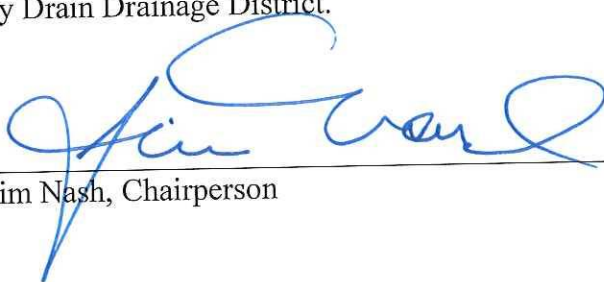
There being no further business, the meeting was adjourned.

  
\_\_\_\_\_  
Jim Nash, Chairperson

STATE OF MICHIGAN                    )  
  )SS.  
COUNTY OF OAKLAND                )

I, the undersigned, do hereby certify that the foregoing is a true and complete copy of the minutes of the Nancy Dingeldey Drain, Oakland County, Michigan, held on the 28<sup>th</sup> day of August, 2018, and that the minutes are on file in the office of the Oakland County Water Resources Commissioner and are available to the public.

I further certify that the notice of the meeting was posted at least 18 hours in advance of the meeting at the office of the Oakland County Water Resources Commissioner which is the principal office of the Nancy Dingeldey Drain Drainage District.

  
\_\_\_\_\_  
Jim Nash, Chairperson

Dated: September 7, 2018

**OAKLAND COUNTY WATER RESOURCES COMMISSIONER**  
**MAINTENANCE ASSESSMENT RECOMMENDATION FOR THE**  
**Nancy Dingeldey Drain**

Assessment for estimated maintenance expenses for fiscal years: 2021 through 2023

Date last assessment approved:	08/28/18	
Last Assessment:		\$11,177
Current Available Cash:		\$300

<b>Expenditure History:</b>	<b>Fiscal Year</b>	<b>Amount</b>
	2014	\$705
	2015	\$1,326
	2016	\$802
	2017	\$767
	2018	\$3,167
	2019	\$1,584
	2020	\$1,610

<b>Estimated Expenditures:</b>	<b>Year</b>	<b>Amount</b>
	2021	\$1,700
	2022	\$1,700
	2023	\$1,700
	<b>Total</b>	<b>\$5,100</b>

**Recommended Assessment:**

Current Cash Deficit	\$0
Total Anticipated Expenses 2021 - 2023	\$5,100
Proposed Special Maintenance Expenses	\$3,200
<b>TOTAL RECOMMENDED ASSESSMENT</b>	<b>\$8,300</b>

Prepared by: Michael R. McMahon Date: May 18, 2021  
Michael R. McMahon, P.E. - Chief Engineer

Approved by: Steven Korth Date: May 18, 2021  
Steven A. Korth, P.E. - Manager

Note: Current Available Cash as of March 31, 2021, Fiscal Services Division Report.

# SPECIAL ASSESSMENT ROLL FOR THE MAINTENANCE OF THE NANCY DINGELDEY DRAIN

Public Corporation	*Percentage of Apportionment	Total Amount of Assessment	Payment #1	Payment #2	Payment #3
City of Rochester Hills	68.9400%	\$ 5,722.02	\$ 5,722.02	-	-
County of Oakland	4.7500%	\$ 394.25	\$ 394.25	-	-
State of Michigan	26.3100%	\$ 2,183.73	\$ 2,183.73	-	-
<hr/>					
Total	<b>100.000%</b>	<b>\$ 8,300.00</b>	<b>\$ 8,300.00</b>	<b>\$ -</b>	<b>\$ -</b>

\*Apportionment based on Final Order of Apportionment dated 8/24/2004.

Assessment Payment Due Date(s): Payment #1 06/30/2021

I hereby certify that I have prepared the Special Assessment Roll for the Maintenance of the Nancy Dingeldey Drain for the fiscal years 2021- 2023 in accordance with the direction of the Drainage Board and the statutory provisions applicable thereto.

\_\_\_\_\_  
Jim Nash  
Chairman of the Drainage Board for the Nancy Dingeldey Drain

The foregoing Special Assessment Roll for the maintenance of the Nancy Dingeldey Drain was approved by the Drainage Board on \_\_\_\_\_ .

\_\_\_\_\_  
Jim Nash  
Chairman of the Drainage Board for the Nancy Dingeldey Drain



**Chapter 20 Drainage Board Meeting**  
Regular Meeting – Tuesday May 18, 2021

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**10. Six Points Drain**

## **AGENDA**

### **DRAINAGE BOARD FOR THE SIX POINTS DRAIN**

May 18, 2021

1. Call meeting to order
2. Approve minutes of meeting of February 25, 2020
3. Public Comments
4. Present Maintenance Assessment Recommendation and Special Assessment Roll in the amount of \$7,816
5. Other business
6. Approve pro rata payment to Drainage Board members
7. Adjourn

**MINUTES OF THE MEETING OF THE DRAINAGE BOARD  
FOR THE SIX POINTS DRAIN**

February 25, 2020

A meeting of the Drainage Board for the Six Points Drain was held in the office of the Oakland County Water Resources Commissioner, Public Works Building, One Public Works Drive, Waterford, Michigan at 11:30 a.m. on the 25<sup>th</sup> day of February, 2020.

The meeting was called to order by the Chairperson.

PRESENT: Jim Nash, Oakland County Water Resources Commissioner

Gwen Markham, Vice Chairperson of the Finance Committee, Oakland County Board of Commissioners

ABSENT: David Woodward, Chairperson of the Oakland County Board of Commissioners

Helaine Zack, Chairperson of the Finance Committee, Oakland County Board of Commissioners

Minutes of the meeting held February 22, 2011 were presented for consideration. It was moved by Markham, supported by Nash, that the minutes be approved.

ADOPTED: Yeas - 2  
Nays - 0

Chairperson Nash asked if there were any public comments. There were none.

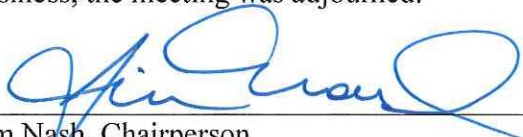
A request for reimbursement of the Drain Revolving Fund in the amount of \$334.14 (as attached) was presented. It was moved by Markham, supported by Nash, that the Drain Revolving Fund be reimbursed in the amount of \$334.14.

ADOPTED: Yeas - 2  
Nays - 0

It was moved by Nash, supported by Markham, to certify attendance and authorize pro rata payment of \$25 per day to Ms. Markham.

ADOPTED: Yeas - 2  
Nays - 0

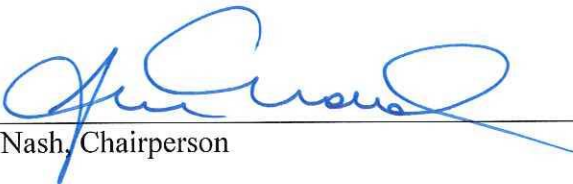
There being no further business, the meeting was adjourned.

  
\_\_\_\_\_  
Jim Nash, Chairperson

STATE OF MICHIGAN                    )  
  )SS.  
COUNTY OF OAKLAND                )

I, the undersigned, do hereby certify that the foregoing is a true and complete copy of the minutes of the Drainage Board of the Six Points Drain, Oakland County, Michigan, held on the 25<sup>th</sup> day of February, 2020, and that the minutes are on file in the office of the Oakland County Water Resources Commissioner and are available to the public.

I further certify that the notice of the meeting was posted at least 18 hours in advance of the meeting at the office of the Oakland County Water Resources Commissioner which is the principal office of the Drainage Board of the Six Points Drain Drainage District.

  
\_\_\_\_\_  
Jim Nash, Chairperson

Dated: March   9  , 2020

**OAKLAND COUNTY WATER RESOURCES COMMISSIONER**  
**MAINTENANCE ASSESSMENT RECOMMENDATION FOR THE**  
**Six Points Drain**

Assessment for current fund deficit and estimated maintenance expenses for fiscal years: 2021 through 2023

Date last assessment approved:	N/A	
Last Assessment:		N/A
Current Available Cash:		(\$1,516)

<b>Expenditure History:</b>	<b>Fiscal Year</b>	<b>Amount</b>
	2014	\$705
	2015	\$690
	2016	\$1,115
	2017	\$789
	2018	\$967
	2019	\$2,125
	2020	\$3,617

<b>Estimated Expenditures:</b>	<b>Year</b>	<b>Amount</b>
	2021	\$2,100
	2022	\$2,100
	2023	\$2,100
	<b>Total</b>	<b>\$6,300</b>

**Recommended Assessment:**

Current Cash Deficit	\$1,516
Total Anticipated Expenses 2021 - 2023	\$6,300

<b>TOTAL RECOMMENDED ASSESSMENT</b>	<b>\$7,816</b>
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Prepared by: <u>Michael R. McMahon</u>	Date: <u>May 18, 2021</u>
Michael R. McMahon, P.E. - Chief Engineer	

Approved by: <u>Steven Korth</u>	Date: <u>May 18, 2021</u>
Steven A. Korth, P.E. - Manager	

Note: Current Available Cash as of March 31, 2021, Fiscal Services Division Report.

# SPECIAL ASSESSMENT ROLL FOR THE MAINTENANCE OF THE SIX POINTS DRAIN

Public Corporation	*Percentage of Apportionment	Total Amount of Assessment	Payment #1	Payment #2	Payment #3
County of Oakland	16.5300%	\$ 1,291.99	\$ 1,291.99	-	-
Lyon Charter Township	82.7700%	\$ 6,469.30	\$ 6,469.30	-	-
State of Michigan	0.7000%	\$ 54.71	\$ 54.71	-	-
<hr/>					
Total	<b>100.000%</b>	<b>\$ 7,816.00</b>	<b>\$ 7,816.00</b>	<b>\$ -</b>	<b>\$ -</b>

\*Apportionment based on Final Order of Apportionment dated 10/17/2006.

Assessment Payment Due Date(s): Payment #1 06/30/2021

I hereby certify that I have prepared the Special Assessment Roll for the Maintenance of the Six Points Drain for the fiscal years 2021- 2023 in accordance with the direction of the Drainage Board and the statutory provisions applicable thereto.

\_\_\_\_\_  
Jim Nash  
Chairman of the Drainage Board for the Six Points Drain

The foregoing Special Assessment Roll for the maintenance of the Six Points Drain was approved by the Drainage Board on \_\_\_\_\_ .

\_\_\_\_\_  
Jim Nash  
Chairman of the Drainage Board for the Six Points Drain