

# WATERFORD TOWNSHIP

## AGENDA REQUEST FORM

Date:

To: Kim Markee, Clerk  
Kari Vlaeminck, Deputy Clerk

From:

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Please place the following item on the \_\_\_\_\_ agenda:

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Please place this item under:

- Awards and Presentations
- Reports
- Introduction

- Old Business
- New Business
- Closed Session

**Please forward the following copies of agenda items:**

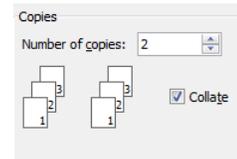
(1) Word File via email



(1) A PDF electronically  
Please provide a single PDF for  
each agenda item.



(2) Printed hard copies



**Please note:**

**Agenda items must be scheduled by NOON on the TUESDAY prior to Board meeting.**

Please schedule agenda items by sending this form to the Clerk and Deputy Clerk by the noon deadline. **DO NOT STAPLE THIS FORM TO THE BOARD MATERIAL.**

**IF YOU REVISE ANY OF THE BOARD MATERIAL PLEASE PROVIDE A NEW WORD FILE AND PDF COPY OF THE ENTIRE PACKET. ALSO, YOU MUST ADD REVISED IN THE NAME OF THE TITLE SO IT MAY BE EASILY DIFERENTIAED**

Two (2) copies of Board information for this agenda item are attached here.

Two (2) copies of Board information for this agenda item will be delivered to the Clerk's Dept. by **12:00 PM on the Wednesday** prior to meeting. I understand that information that is provided after the deadline might not be included in the packet.

**BOARD OF TRUSTEES**  
Gary Wall, Supervisor  
Kimberly Markee, Clerk  
Margaret Birch, Treasurer  
Anthony M. Bartolotta, Trustee  
Art Frasca, Trustee  
Karen Joliat, Trustee  
Steven Thomas, Trustee



5200 Civic Center Drive  
Waterford, Michigan 48329-3773  
Telephone: (248) 674-2278 Fax: (248) 674-8658  
www.waterfordmi.gov

**DEPARTMENT OF PUBLIC WORKS**  
Russell Williams  
Director  
Joseph Ashley  
Water & Sewer Superintendent  
Justin Westlake  
Facilities & Operations Superintendent  
Derek Diederich  
Administrative Superintendent  
Frank Fisher  
Engineering Superintendent

DATE: June 15, 2020  
TO: Honorable Charter Township of Waterford Board of Trustees  
FROM: Russell D. Williams, DPW Director *RW*  
RE: Water Interconnect with Keego Harbor

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Please review the attached letter from Engineering Firm, Hubbell, Roth & Clark, Inc. (HRC). HRC has been working with Waterford Township DPW on a water system interconnect between the City of Keego Harbor and Waterford Township.

A water system interconnect offers a redundant water supply for both the City of Keego Harbor and Waterford Township in case of a water system emergency.

Waterford currently has several other water system interconnections with Independence Township, White Lake Township, West Bloomfield Township and the City of Pontiac.

This additional water system interconnect is necessary to protect the single water main on S. Cass Lake Road that supplies approximately 550 homes south of S. Cass Lake Road and Port Cove Drive. This single feed water main has failed in the past, resulting in Waterford Township connecting to City of Keego Harbor's water system by running a fire hose between water system hydrants for "temporary" water service. This temporary connecting is not a standard water system practice that Michigan Department of Environment, Great Lakes, and Energy (EGLE) would approve, other than during extreme conditions. In addition, this temporary water connection would not provide sufficient water flow during a fire event.

Another issue with the fire hose connection is the difference in water pressure between systems. The City of Keego Harbor's water system, is supplied by Great Lakes Water Authority (GLWA) at a transmission pressure of 90 - 100 pounds per square inch (psi). Waterford Township's water pressure is typically around 60 psi. A straight hose connection could cause the Waterford system to experience pressure nearly twice the normal level. This additional pressure could cause system failures (main breaks or home plumbing system failures).

A permanent interconnect designed with a pressure reducing valve (PRV) is a safe water system back up. This solution would require a PRV for water flowing from the City of Keego Harbor to the Waterford system. If water were flowing from Waterford to the City of Keego Harbor, the PRV would be by-passed. Flow in either direction would be monitored via bi-directional flow meter.

*With us there are no boundaries*

Included in this packet are letters from the Oakland County Water Resources Commissioner (WRC), who operates City of Keego Harbor’s water system, and EGLE supporting this interconnect. Consistent with all water system interconnects, EGLE would need to be notified anytime this interconnect was put into service and additional water sampling may be required.

Waterford Township will fund this project; during initial conversation, WRC made clear the City of Keego Harbor’s water system could not participate financially. This project is critical to the Waterford system to create a redundant supply of nearly 550 homes, which could be affected by upcoming work of the Road Commission for Oakland County (RCOC).

In 2021 RCOC will be reworking the Cass Lake Culvert on the north end of the single feed 12” water main, an Asbestos Concrete (AC) pipe installed in 1959. Although AC pipe has a long life, it is also very brittle and any disturbance of the ground near the pipe can fracture it. The culvert being worked on is within a few feet of this water main. A disturbance of the soil could put the single feed main and 550 homes out of water service. The location of this main, at a river crossing, could make any required repair a monumental task due to the poor soil conditions.

This project will require a budget amendment, line to line transfer from Water Capital Infrastructure Preservation to Water Capital Infrastructure.

<b>Requested Board Action</b>
<b>Approve Budget Amendment of \$400,000.00 from 59045-97010 Water Capital Infrastructure Preservation to 59045-97000 Water Capital Infrastructure</b>
<b>Approve Engineering, i.e. Plan Preparation, Specifications and Bidding Documents for a City of Keego Harbor – Waterford Township Water System Interconnect with an Engineering Cost Estimate of \$744,000.00 from 59045-97000</b>

June 15, 2020

Waterford Township DPW  
5240 Civic Center Drive  
Waterford, Michigan 48329

Attn: Mr. Russ Williams, Director

Re: Emergency Meter Vault – Connection to Keego Harbor  
Feasibility Study Report

HRC Job No. 20180853

Dear Mr. Williams:

In accordance with your request, we have reviewed the feasibility of constructing an emergency water meter vault near the border of Waterford Township and Keego Harbor.

### **Project Need**

Waterford Township has an isolated water service area near the border of Keego Harbor (at Cass Lake Road, beginning just south of Cass Elizabeth Rd) that is supplied through an older single sourced water main (see Figure 1). In the instance that this water main would fail or need to be serviced, the service area could be without water affecting nearly 550 homes. In situations such as these, emergency connections are installed to provide a back-up water supply to either community. The intent of the emergency meter vault is to supply either community with minimum to average day flows without compromising either communities water system pressures and/or flows.

The Township has emergency metered connections with its neighboring communities, and it is understood that the Township would like to install another to Keego Harbor to service this area. In the event that the Township or City suffers a loss of pressure or flow in this area, the emergency connection could service either community.

Keego Harbor has reviewed this concept and would like to move forward with an agreement as directed by their City Council. The Michigan Department of Environment, Great Lakes, and Energy (EGLE) has provided their support for the concept, as the emergency connection provides a reliable supply of water and pressures in the event of an emergency. In addition, the Oakland County Water Resources Commissioner (OCWRC) who operates and maintains the Keego Harbor water system also sees the importance of providing a redundant source of water to their customers. As such, they are also in support of the emergency meter vault.

While we have identified the need for a back-up water supply in the event of an emergency, the connection could also be used for scheduled water main service or replacement. The Road Commission for Oakland County (RCOC) is in process of designing the Cass Lake Culvert project (see Figure 1). The culvert is in the direct vicinity of the Township's water main which feeds this district. Construction will impact the water main and the Township is in the process of coordinating operations of the system with County staff.

### **Location**

The Township owns property between Kessler and Beachland Roads that could be an ideal location for the emergency meter vault. The attached exhibits show the location of the proposed emergency metered connection and the associated water main to connect the water systems.

**Delhi Township**  
2101 Aurelius Rd.  
Suite 2A  
Holt, MI 48842  
517-694-7760

**Detroit**  
535 Griswold St.  
Buhl Building, Ste 1650  
Detroit, MI 48226  
313-965-3330

**Grand Rapids**  
801 Broadway NW  
Suite 215  
Grand Rapids, MI 49504  
616-454-4286

**Howell**  
105 W. Grand River  
Howell, MI 48843  
517-552-9199

**Jackson**  
401 S. Mechanic St.  
Suite B  
Jackson, MI 49201  
517-292-1295

**Kalamazoo**  
834 King Highway  
Suite 107  
Kalamazoo, MI 49001  
269-665-2005

**Lansing**  
215 S. Washington SQ  
Suite D  
Lansing, MI 48933  
517-292-1488

### **Design**

The design of the new emergency meter vault will consist of an underground concrete vault including meter, pressure reducing valve (PRV), valves, sump pump, ventilation, electrical, and access hatches. Due to the differing pressures (hydraulic grades) in each community a meter and PRV will be necessary to allow for better control of pressure fluctuations, especially when flow is coming into Waterford Township.

Site work will involve (but not limited to) the installation of water main to connect the water systems, exterior isolation valves, and connections to the existing water mains. Due to potential high groundwater levels it is anticipated that significant dewatering and a temporary earth retention system (TERS) may be necessary to allow for proper and safe construction activities. A soil boring will determine if these items will be necessary. It is recommended that the soil boring be completed at the earliest possible convenience to reveal what design considerations will need to be undertaken. Also, since construction will occur during the winter months; cold weather protection will be necessary to ensure for proper construction of the vault and to ensure the equipment in the vault is protected.

A preliminary design concept is provided in Figure 3 and a cost estimate is provided for all proposed improvements.

### **Estimated Timeline**

Should the Township decide to proceed with this project the following timeline is proposed:

- Design Engineering: mid July – end September 2020
- Permitting/Bidding: October-November 2020
- Construction: December 2020-April 2021
- In operation by March 1, 2021

### **Additional Services**

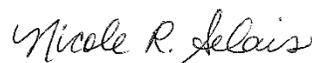
Our office would be pleased to provide design engineering services, i.e. preparation of plans, specifications, and bidding documents, etc. as needed. A separate proposal for these services will be provided under separate cover should the Township so desire.

Very truly yours,

HUBBELL, ROTH & CLARK, INC.



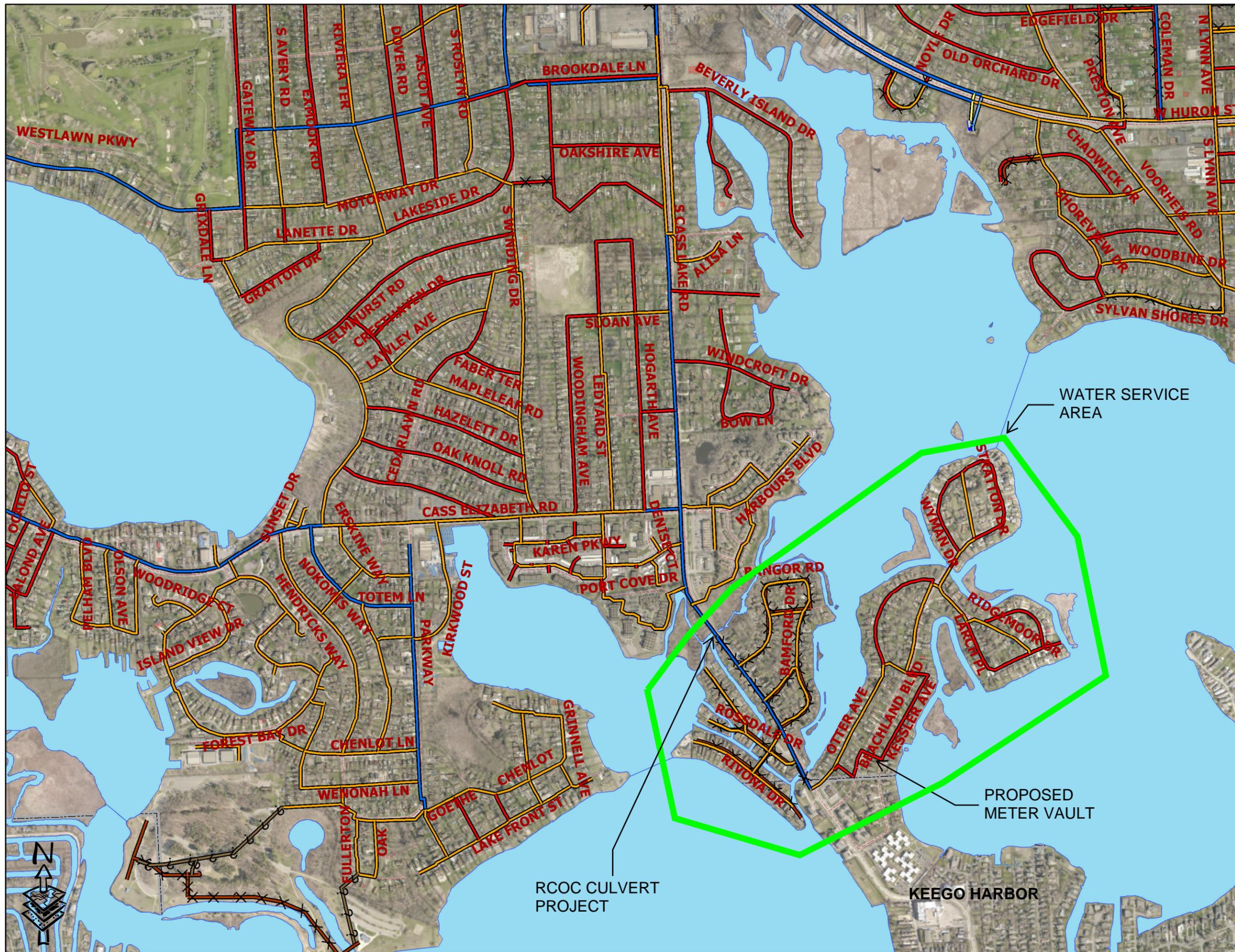
James F. Burton, P.E.  
Executive Vice-President



Nicole R. Selais  
Project Engineer

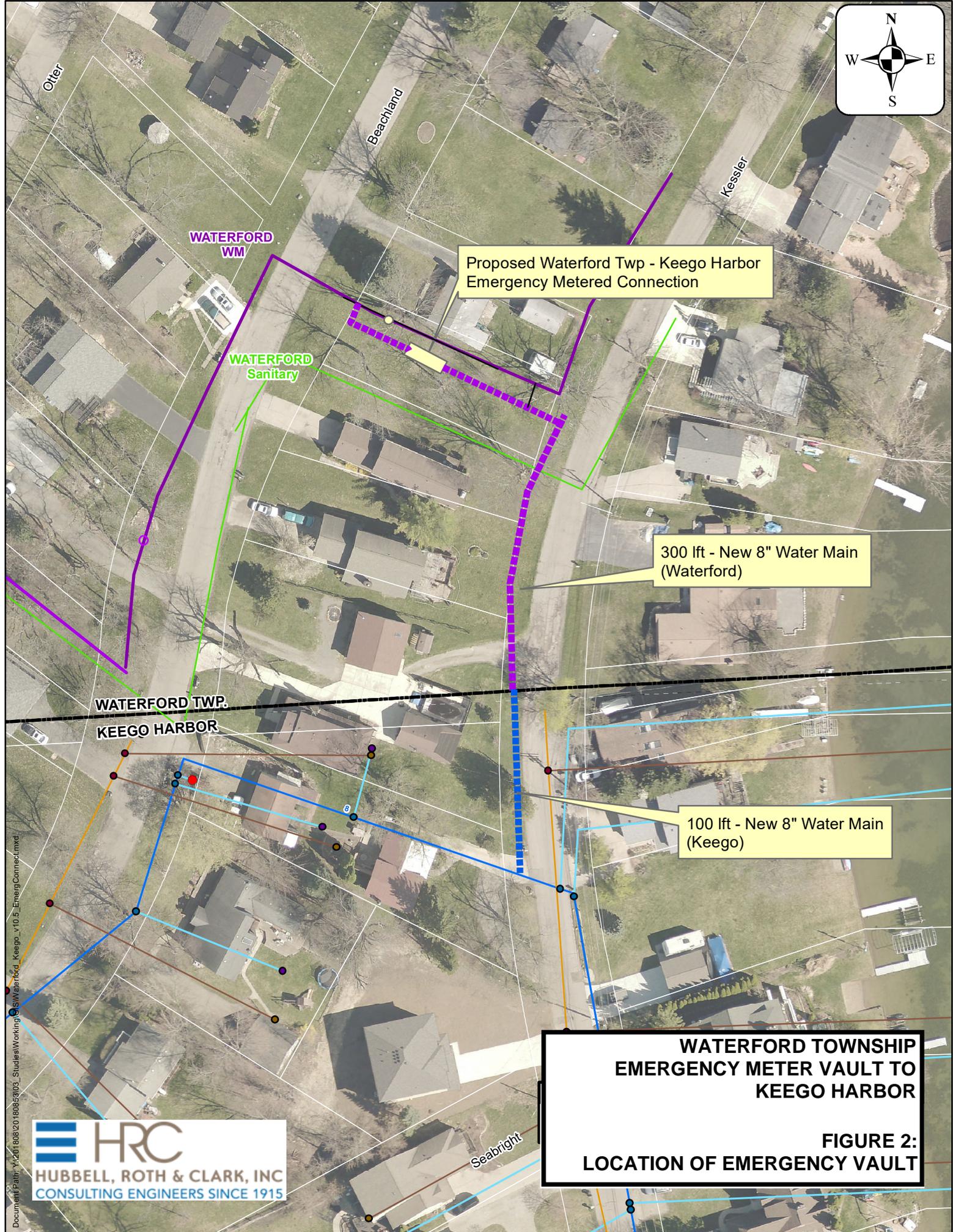
NRS/JFB

Attachment  
Enclosure  
pc: HRC; File



**WATERFORD TOWNSHIP  
EMERGENCY METER VAULT  
TO KEEGO HARBOR**

**FIGURE 1:  
WATER SERVICE AREA**



Proposed Waterford Twp - Keego Harbor  
Emergency Metered Connection

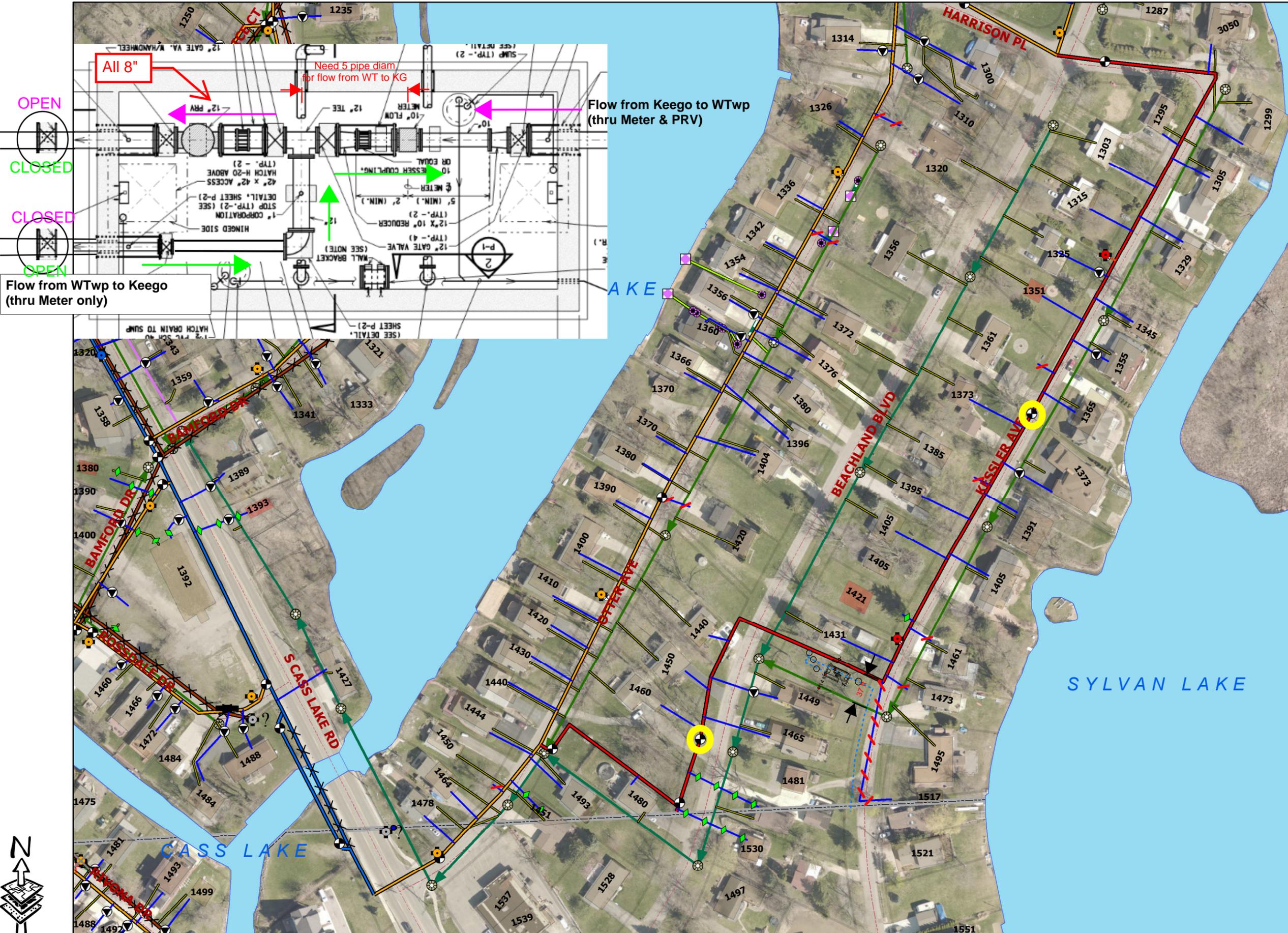
300 lft - New 8" Water Main  
(Waterford)

100 lft - New 8" Water Main  
(Keego)

WATERFORD TWP.  
KEEGO HARBOR

**WATERFORD TOWNSHIP  
EMERGENCY METER VAULT TO  
KEEGO HARBOR**

**FIGURE 2:  
LOCATION OF EMERGENCY VAULT**



WATERFORD TOWNSHIP  
EMERGENCY METER VAULT  
TO KEEGO HARBOR

FIGURE 3:  
PRELIMINARY  
DESIGN  
CONCEPT





# HRC

**HUBBELL, ROTH & CLARK, INC**  
CONSULTING ENGINEERS SINCE 1915

## ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST

PROJECT: Waterford/Keego Harbor Emergency Connection  
 LOCATION: Kessler/Beachland -Waterford Twp, MI  
 BASIS FOR ESTIMATE:  CONCEPTUAL  PRELIMINARY  FINAL  
 WORK: Emergency Meter Vault

DATE: 6/11/2020  
 PROJECT NO.: 20180853  
 ESTIMATOR: NS/CC/BS  
 CHECKED BY: NS/JB

ITEM NO.	ITEM DESCRIPTION	EST. QUANT.	UNIT	UNIT PRICE	TOTAL COST
1	Mobilization (5% Max)	1		\$ 24,000.00	\$ 24,000.00
2	Tree, Rem, 6 inch to 18 inch, Special	3	Ea	\$ 900.00	\$ 2,700.00
3	Remove and Dispose of Existing Asbestos Cement Pipe	30	LFT	\$ 70.00	\$ 2,100.00
4	Water Main, DI WM, CL 54, 8 inch	400	LFT	\$ 160.00	\$ 64,000.00
5	Gate Valve and Well, 8 Inch	5	EA	\$ 6,000.00	\$ 30,000.00
6	Water Main Connection, 8 in to 8 in	1	EA	\$ 5,500.00	\$ 5,500.00
7	Water Main Connection, 8 in to 6 in	1	EA	\$ 5,500.00	\$ 5,500.00
8	Pavement Removal	20	SYD	\$ 45.00	\$ 900.00
9	Pavement Replacement, 4.5" Bit. on 21AA	20	SYD	\$ 120.00	\$ 2,400.00
10	Property Protection Fence	200	LFT	\$ 7.00	\$ 1,400.00
11	Temporary Earth Retention System, Design and Install	1	LSUM	\$ 35,000.00	\$ 35,000.00
12	Dewatering	1	LS	\$ 35,000.00	\$ 35,000.00
13	Meter/PRV Vault Inc. All Internals	1	LSUM	\$ 210,000.00	\$ 210,000.00
14	Drain Basin, Sump, Sump Discharge	1	LSUM	\$ 10,000.00	\$ 10,000.00
15	Exhaust Fan, Discharge and Vent	1	LSUM	\$ 3,000.00	\$ 3,000.00
16	Control Cabinet Foundation	1	EA	\$ 1,900.00	\$ 1,900.00
17	Control Cabinet, Incl All Internals	1	LSUM	\$ 8,000.00	\$ 8,000.00
18	Site Electrical	1	LSUM	\$ 12,000.00	\$ 12,000.00
19	Vault Electrical, Incl All Internals	1	LSUM	\$ 15,000.00	\$ 15,000.00
20	Cold Weather Protection	130	CYD	\$ 250.00	\$ 32,500.00
21	Trench Undercut and Backfill	30	SYD	\$ 50.00	\$ 1,500.00
22	DTE Allowance	1	LSUM	\$ 2,000.00	\$ 2,000.00
23	Site Restoration	1	LS	\$ 4,000.00	\$ 4,000.00
24	Soil Erosion and Sedimentation Control	1	LS	\$ 2,500.00	\$ 2,500.00
25	Maintaining Traffic	1	LS	\$ 1,500.00	\$ 1,500.00
<b>CONSTRUCTION SUBTOTAL</b>					<b>\$ 513,000.00</b>
	Contingencies	20	%		\$ 103,000.00
	Engineering, Administration	25	%		\$ 128,000.00
<b>ENGINEER'S OPINION OF CONSTRUCTION COST</b>					<b>\$ 744,000.00</b>

March 20,2020

Russ

This is the motion that was approved at our City Council Meeting last night.

The City of Keego Harbor does hereby support the request of Waterford Township to allow an emergency interconnection of their water system and ours near the municipal boundaries between Beachland and Kessler Roads. This connection will serve both communities in the event of scheduled or emergency loss of water supply to this area. The construction and maintenance of this connection shall be at the sole cost of Waterford Township. Specific operations and costs of water supplied provisions will be memorialized in an intergovernmental agreement prepared by Waterford Township and presented to the City for review and approval prior to the start of construction.

Tammy Neeb  
Acting City Manager / City Clerk

City Of Keego Harbor  
2025 Beechmont St.  
Keego Harbor MI 48320

O:248-515-8461  
F: 248-682-2008



GRETCHEN WHITMER  
GOVERNOR

STATE OF MICHIGAN  
DEPARTMENT OF  
ENVIRONMENT, GREAT LAKES, AND ENERGY  
WARREN DISTRICT OFFICE



LIESL EICHLER CLARK  
DIRECTOR

February 4, 2020

Mr. Russell Williams  
Waterford Township  
5240 Civic Center Drive  
Waterford, Michigan 48329

Dear Mr. Williams

SUBJECT: Water System Interconnection

This letter is in response to your request for EGLE's overview opinion on intergovernmental water system interconnections, specifically between Waterford Township and Keego Harbor. We understand the new interconnection would only be used in the event of an emergency. EGLE supports the concept of emergency interconnections that would maintain water system pressure and provide a reliable supply of water in the event of an emergency. The construction of the interconnection will require an Act 399 permit from EGLE. In addition, EGLE should be made aware of any emergency interconnection uses. The use of an emergency interconnect could affect water quality and additional monitoring and treatment may be warranted.

If you have any questions, please contact me by phone at 586-753-3759, by email at [donaldsonk@michigan.gov](mailto:donaldsonk@michigan.gov), or by mail at EGLE, 27700 Donald Court, Warren, Michigan 48092.

Sincerely,

Kris Donaldson, P.E.  
District Supervisor  
Field Operations Section  
Drinking Water and Environmental Health Division

cc: Ms. Tiffany Yusko-Kotimko, EGLE



# WRC

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## WATER RESOURCES COMMISSIONER

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*Jim Nash*

February 5, 2020

Mr. Russell Williams  
Director of Public Works  
Waterford Township  
5200 Civic Center Drive  
Waterford, MI 48329

Subject: Letter of Support for construction of an emergency connection between Waterford Township and Keego Harbor water systems

Mr. Williams:

The Oakland County Water Resources Commissioner's office (WRC) operates and maintains the Keego Harbor water system. In our role as water system operator we understand the importance of providing a high level of service to water customers. An emergency connection between water systems can be an effective tool to provide water to an area when the primary source is out of service. Emergency connections were effectively used by WRC to provide water service to thousands of customers in the last year. They are effective in both planned and emergency work.

WRC is in support of the proposed emergency connection between the City of Keego Harbor and Waterford Township. This emergency connection could be used by either community in an emergency or as part of planned water system improvements.

WRC looks forward to working with you on this important project. Please contact me at 248-452-2271 or [ploofa@oakgov.com](mailto:ploofa@oakgov.com) if we can provide any additional information or support as this project moves ahead.

Sincerely,



Amy Ploof, P.E.  
Chief Engineer – Water Systems

C: Jered Ottenwess, City Manager of Keego Harbor

