

Combined Sewer Overflow (CSO) Public Notification Plan

NPDES Permit No. MI0022802 August 2018



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Exhibits

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I. Executive Summary

The Great Lakes Water Authority (GLWA) has developed a public notification plan (PNP) for combined sewer overflows (CSO) that may occur from outfalls located along Detroit and Rouge Rivers, in accordance with NPDES Permit #MI0022802 and 40 CFR Part 122.38(c). A CSO is a discharge from a combined sewer system, during wet weather, at a point prior to the GLWA Water Resource Recovery Facility (WRRF). The PNP describes how GLWA will provide notification to the public of CSO occurrences from the GLWA Regional System.

GLWA operates and maintains CSO control and treatment facilities, including CSO retention and treatment basins (RTB) and screening and disinfection facilities (SDF). RTBs are commonly referred to as CSO basins, and provide for the capture, storage, and treatment (including disinfection) of combined sanitary and stormwater flows from overloaded combined sewers during wet weather. SDFs provide treatment including screening for removal of floatable material and disinfection of combined wastewater prior to discharge. The CSO basins are designed with storage capacity to contain a volume of wastewater from each storm event. When the storm event subsides, the captured flows are returned to the conveyance system for treatment at the GLWA WRRF. GLWA operates and maintains the following CSO treatment facilities: Belle Isle, Conner Creek, Hubbell-Southfield, Oakwood, Puritan-Fenkell, Seven Mile, Baby Creek, Leib, and St. Aubin.

II. System Description

GLWA operates and maintains a regional system that provides for wastewater conveyance and treatment. The system is comprised of approximately 944 square miles of service area, of which 25 percent is a combined sewer system. GLWA is responsible to operate and maintain 181 miles of interceptors and trunk sewers, pump stations, RTBs, SDFs, and other control elements. GLWA provides service to the City of Detroit and 76 suburban member partners/communities. A map of CSO outfalls can be found in Exhibit A.

III. Potentially Affected Public Entities

The PNP has identified the following potentially impacted public entities and members of the public which may be affected by the occurrence of CSO discharges

| Agency Name | Contact | Phone # | FAX/email |
|-------------------|---|--------------|--|
| MDEQ, SE Michigan | District Supervisor Water Resources Division Department of Env. Quality 27700 Donald Court Warren, Michigan 48092 | 586-601-7693 | 586-753-3751 |
| City of Gibraltar | City Administrator City Municipal Building 29450 Munro Avenue Gibraltar, MI 48173 | 734-676-9021 | 734-676-7509 dthiel@cityofgibraltar.net |
| City of Riverview | Director of Public Works Department of Public Works 18550 Krause Riverview, MI 48193 | 734-281-4269 | 734-283-0018 jwebb@cityofriverview.com |



| Agency Name | Contact | Phone # | FAX/email |
|--------------------------|-----------------------------|---------------|-------------------------------|
| City of Trenton | Director of Public Services | 734-675-8470 | 734-675-8688 |
| City of Trenton | 1431 West Rd | 754-075-0470 | wrhogan@trenton-mi.com |
| | Trenton, MI, 48183 | | millionani |
| | | | |
| | WWTP Superintendent | 734-676-0646 | 734-675-5382 |
| | 1801 Van Horn Road | | jtapp@trenton-mi.com |
| | Trenton, MI 48183 | | |
| City of Wyandotte | Superintendent | 734-324-4580 | 734-556-3028 |
| | City of Wyondotto | | dps@wyandottemi.gov |
| | A201 13th Street | | |
| | Wyandotte, MI 48192 | | |
| Grosse Ile Township | DPS Director | 734- 676-4422 | lorindab@grosseile.com |
| | 9601 Groh Rd. | Ext. 228 | |
| | Grosse lle, MI 48138 | | |
| City of River Rouge | Director | 313-842-4803 | kburke@cityofriverrouge.org |
| | Dept. of Public Works | Ext.226 | |
| | 10600 West Jefferson Ave. | | |
| City of Fooroo | River Rouge, MI 48218 | 242 204 2724 | 212 296 4246 |
| City of Ecorse | Dept of Public Works | 313-294-3731 | klawronco@ocorsomi.gov |
| | 3869 West Jefferson | | <u>Klawrence@ecorsenn.gov</u> |
| | Ecorse. MI 48229 | | |
| City of Detroit Health | Director of Policy | 313-570-4386 | 313-876-0476 |
| Department | 3245 E Jefferson Ave #100, | | ingersollj@detroitmi.gov |
| | Detroit, MI 48207 | | |
| Wayne County | Environmental Management | 734-727-5890 | 734-727-7165 |
| Department of Health, | Unit Chief | | amatlock@waynecounty.com |
| Wellness | 33030 Van Born Road | | |
| Wayne County – | Deputy Director | 313-224-8116 | esteele@waynecounty.com |
| Department of Public | DPS - Env. Services Group | 010 224 0110 | colocid e wayneboanty.com |
| Services | 400 Monroe Ave #400. | | |
| | Detroit, MI 48226 | | |
| US Coast Guard | Commander | 313-568-9560 | 313-568-9579 |
| GLWA Water Operating | 735 Randolph St. | 313-964-9390 | |
| Services | Detroit, MI 48226 | | |
| Detroit Water & Sewerage | 735 Randolph St. | 313-964-9667 | |
| Department (DWSD) | Detroit, MI, 48226 | | |

Comments / Feedback:

In accordance with 40 CFR Part 122.38(c)(5), a summary of comments and recommendations raised by the local public health departments can be found in Exhibit B.

In accordance with 40 CFR Part 122.38(c)(6), a summary of significant comments and recommendations by affected public entities whose waters may be impacted by a CSO discharge can be found in Exhibit B.



IV. CSO Discharge Volumes

For the purpose of complying with 40 CFR Part 122.38(a)(2)(iii)(A), (a)(3)(iii)(A) and (b)(2) and (3), the PNP describes whether the volume and duration of CSO discharges will be measured or estimated for each CSO discharge point. GLWA's monitoring protocol divides the overflows into the following two (2) categories:

- A. Treated Overflows
- B. Untreated Overflows

The following is a description of the protocol for monitoring volume, duration, and frequency of CSO from each of these overflow categories.

Treated Overflows Monitoring Protocol

Treated Overflows include discharges from the CSO basins (Conner, Seven Mile, Oakwood, Puritan-Fenkell, Hubbell-Southfield and Belle Isle), and the CSO screening and disinfection facilities (Leib, St. Aubin and Baby Creek). Each of these CSO control facilities has the ability to monitor overflow. The monitored overflow will be used to calculate the overflow volume, frequency, and duration. These facilities are being monitored using Supervisory Control and Data Acquisition (SCADA) instrumentation used to support the facility operation. A summary of the monitoring protocol is included in the table under Section V.

Untreated Overflows Monitoring Protocol

The overflow monitoring protocol for untreated gravity overflows is based on level measurements/rating curves at these locations. The discharge from the untreated outfalls is measured using the level upstream of the diversion dam or regulator, the river level (as shown in Exhibit C - Figure 1), and a rating curve for the outfall system (as shown in Exhibit C - Figure 2). The rating curve represents a relationship between the water level at the regulator and the river, and the discharge rate through the outfall system. The rating curves were developed using the Corps of Engineers HEC RAS model in combination with detailed outfall system geometry. This protocol also developed outfall monitoring relationships appropriate for Puritan outfall with dynamic control gates (weir equations). This protocol integrates head losses in the discharge conduit and the gate setting in combination with the above levels to calculate the flow rate. Water levels are being measured continuously every five minutes as part of the SCADA System. The discharge relationship varies based on the river level. By determining the river level, the appropriate rating curve is determined to calculate the flow. Using the water elevations at the regulator, recorded dynamically during the event, in combination with the rating curves, a complete discharge hydrograph is determined. Exhibit C - Figure 3 shows a flowchart that illustrates this protocol. This hydrograph provides the peak discharge rate, duration of overflow and the area under the hydrograph that is calculated to determine the overflow volume.

V. Signage

The PNP has identified the following CSO outfalls where signage will be placed to meet the requirements of 40 CFR Part 122.38(a)(1). Example signage can be found in Exhibit D. Signs will be maintained and inspected at minimum once every quarter to affirm they are in place, legible, visible and factually correct. Signs not meeting these criteria will be replaced in a timely manner.



| Untreated CSO Outfalls | | | | |
|------------------------|--|---|-------------------------------|--|
| Outfall | Outfall Location | Monitoring Protocol | Receiving Stream | |
| No. | | | | |
| 080 | Fox Creek Backwater Gates | Level Sensor/Rating Curve | Fox Creek to Detroit River | |
| 004 | Fairview (DWF) Pump Station (P28 through P31) Parkview and Detroit River | Emergency Only: Discharge conduit currently stop logged. If necessary, the volume of an emergency discharge would be based upon pumped volume. | Detroit River | |
| 005 | McClellan (B03) | Level Sensor/Rating Curve | Detroit River | |
| 006 | Fischer (B04) | Level Sensor/Rating Curve | Detroit River | |
| 007 | Iroquois (B05) | Level Sensor/Rating Curve | Detroit River | |
| 008 | Helen (B06) | Level Sensor/Rating Curve | Detroit River | |
| 009 | Mt.Elliott (B07) | Level Sensor/Rating Curve | Detroit River | |
| 012 | Joseph Campau (B10) | Level Sensor/Rating Curve | Detroit River | |
| 014 | Dubois | Calculated utilizing capacity flow and discharge duration | Detroit River | |
| 016 | Orleans Relief (B15) Eastside | Level Sensor/Rating Curve | Detroit River | |
| 017 | Orleans (B14) Westside | Level Sensor/Rating Curve | Detroit River | |
| 018 | Riopelle (B16) | Level Sensor/Rating Curve | Detroit River | |
| 019 | Rivard (B17) | Level Sensor/Rating Curve | Detroit River | |
| 020 | Hastings (B18) | Level Sensor/Rating Curve | Detroit River | |
| 021 | Randolph (B19) | Level Sensor/Rating Curve | Detroit River | |
| 022 | Bates (B20) | Level Sensor/Rating Curve | Detroit River | |
| 023 | Woodward (B21) | Level Sensor/Rating Curve | Detroit River | |
| 024 | Griswold (B22) | Level Sensor/Rating Curve | Detroit River | |
| 025 | First-Hamilton (B23) | Level Sensor/Rating Curve | Detroit River | |
| 026 | Third St. (B24) | Level Sensor/Rating Curve | Detroit River | |
| 027 | Cabacier (B25) | Level Sensor/Rating Curve | Detroit River | |
| 028 | Eleventh St. (B26) | Level Sensor/Rating Curve | Detroit River | |
| 029 | Rosa Parks (B27) | Level Sensor/Rating Curve | Detroit River | |
| 030 | Vermont (B28) | Level Sensor/Rating Curve | Detroit River | |
| 031 | Eighteenth St. (B29) | Level Sensor/Rating Curve | Detroit River | |
| 032 | Twenty-First St. (B30) | Level Sensor/Rating Curve | Detroit River | |



| Outfall No. | Outfall Location | Monitoring Protocol | Receiving Stream |
|----------------|---|---------------------------|----------------------------|
| 033 | Twenty-Fourth St. (B31) | Level Sensor/Rating Curve | Detroit River |
| 034 | West Grand Blvd. (B32) | Level Sensor/Rating Curve | Detroit River |
| 035 | Swain (B33) | Level Sensor/Rating Curve | Detroit River |
| 036 | Scotten (B34) | Level Sensor/Rating Curve | Detroit River |
| 037 | McKinstry (B35) | Level Sensor/Rating Curve | Detroit River |
| 038 | Summit-Clark (B36) | Level Sensor/Rating Curve | Detroit River |
| 039 | Ferdinand (B37) | Level Sensor/Rating Curve | Detroit River |
| 040 | Morrell (B38) | Level Sensor/Rating Curve | Detroit River |
| 041 | Junction (B39) | Level Sensor/Rating Curve | Detroit River |
| 042 | Campbell (B40) | Level Sensor/Rating Curve | Detroit River |
| 044 | Schroeder (B42) | Level Sensor/Rating Curve | Detroit River |
| 046 | Cary (B44) | Level Sensor/Rating Curve | Old Channel Rouge River |
| 047 | Dearborn (B45) | Level Sensor/Rating Curve | Old Channel Rouge River |
| 048 | Pulaski (No monitor) | Level Sensor/Rating Curve | Old Channel Rouge River |
| 051 | Carbon (B46) | Level Sensor/Rating Curve | Rouge River |
| 056 | Fort St. (West Shore) | Level Sensor/Rating Curve | Rouge River |
| 054 | Fort (NWI)(included in 057*) | Level Sensor/Rating Curve | Rouge River |
| 059 | Warren (B54) | Level Sensor/Rating Curve | Rouge River |
| 060 | Tireman (B56, 57 & 58) | Level Sensor/Rating Curve | Rouge River |
| 061 | West Chicago (East Shore) (B60, 61 & 62) | Level Sensor/Rating Curve | Rouge River |
| 062 | West Chicago Siphon (West Shore) (B63) | Level Sensor/Rating Curve | Rouge River |
| 063 | Plymouth (B64) | Level Sensor/Rating Curve | Rouge River |
| 064 | Glendale Relief (B65) | Level Sensor/Rating Curve | Rouge River |
| 065 | Lahser (Dolson) (B67 & B68) | Level Sensor/Rating Curve | Rouge River |
| 066 | Schoolcraft (B70) | Level Sensor/Rating Curve | Rouge River |
| 067 | West Parkway (B69) | Level Sensor/Rating Curve | Rouge River |
| 068 | Brammel (B71) | Level Sensor/Rating Curve | Rouge River |



| Outfall No. | Outfall Location | Monitoring Protocol | Receiving Stream |
|----------------|-------------------------------|---|------------------|
| 069 | Lyndon (B72) | Level Sensor/Rating Curve | Rouge River |
| 072 | Puritan (East Shore) (B77) | Level Sensor/Rating Curve/Weir Equations | Rouge River |
| 073 | Riverdale (B79) | Level Sensor/Rating Curve | Rouge River |
| 074 | McNichols (B80 & B81) | Level Sensor/Rating Curve | Rouge River |
| 075 | Glenhurst (B82) | Level Sensor/Rating Curve | Rouge River |
| 077 | Seven Mile (East Shore) (B85) | Level Sensor/Rating Curve | Rouge River |
| 079 | Pembroke (B87) | Level Sensor/Rating Curve | Rouge River |

| Treated CSO Outfalls | | | |
|----------------------|------------------------|---|--------------------|
| Outfall | CSO Treatment Facility | Monitoring Protocol | Discharge Location |
| No. | | | |
| 101 | Hubbell-Southfield | Calculated utilizing flow and level sensing instrumentation | Rouge River |
| 102 | Puritan-Fenkell | Calculated utilizing flow and level sensing instrumentation | Rouge River |
| 103 | Seven Mile | Calculated utilizing flow and level sensing instrumentation | Rouge River |
| 104 | Conner Creek | Calculated utilizing flow and level sensing instrumentation | Conner Creek |
| 108 | Belle Isle | Calculated utilizing flow and level sensing instrumentation | Detroit River |
| 109 | Oakwood | Calculated utilizing flow and level sensing instrumentation | Rouge River |
| 105 | Leib | Calculated utilizing flow and level sensing instrumentation | Detroit River |
| 106 | St. Aubin | Calculated utilizing flow and level sensing instrumentation | Detroit River |
| 107 | Baby Creek | Calculated utilizing flow and level sensing instrumentation | Rouge River |

VI. Initial and Supplemental Notification Protocol

- 1. Within four hours of becoming aware of CSO discharge, GLWA will notify potentially impacted public entities listed in Section III of the PNP. The notification will be sent by electronic mail or facsimile and will, at a minimum, include the following information:
 - a) Permitted outfall number;
 - b) A waterbody that receives the discharge(s);
 - c) Potentially impacted public access areas;
 - d) Date(s) and time(s) that the discharge(s) commenced;
 - e) Whether, at the time of the notification, the discharge(s) is continuing or has ended. If the discharge(s) has ended, the approximate time that the discharge ended;
 - f) CSO contact.



- Within four hours of becoming aware of a CSO discharge, GLWA will provide public notification through the Michigan Department of Environmental Quality's (MEDQ) MiWaters System. The notification will, at a minimum, include all the information specified in paragraph (1)(a-f) of this section.
- 3. Within seven days after becoming aware that the CSO discharge(s) has ended, GLWA will update potentially impacted public entities listed in Section III of the PNP by electronic mail with the following information:
 - a) The measured or estimated volume of the discharge(s);
 - b) The approximate time that the discharge(s) ended unless this information was provided in an earlier notice.
- 4. Within seven days after becoming aware that the CSO discharge(s) has ended, GLWA will provide a public update through the Michigan Department of Environmental Quality's MiWaters System. The notification will, at a minimum, include all the information specified in paragraph (3)(a-b) of this section.

VII. Annual & Public Notifications

- 1. GLWA will place a link to the PNP on its GLWA CSO webpage. Periodically, GLWA will provide notification of the plan's availability through a news feed feature on GLWA's homepage.
- 2. On or before May 1 of each year, GLWA will post a link on its website to MiWaters which will provide access to CSO discharge information for the previous calendar year. GLWA will additionally provide EPA with notice of how the notification is made available. Notice to EPA will be in the form of an email to NPDES_CSO@epa.gov containing a link to the annual notice and the contact information (name, title, phone number, email) of the person responsible for maintaining the website, or alternative information about how the annual notice is available.





Exhibit B. Summary of Public Comments

In accordance with 40 CFR Part 122.38(c)(5), the following is a summary of comments and recommendations raised by the local public health departments.

Meeting Comments

- Signage should include a message regarding if water is coming out during dry weather to call GLWA. *Response: Comment is currently under review by GLWA*.
- 2) Prefer language on signage that states water may contain dilute raw sewage. *Response: Comment is currently under review by GLWA.*
- 3) Prefer signage to be in red or yellow. Response: Comment is currently under review by GLWA.
- 4) Signage should be in close proximity to river bank. *Response: Comment is currently under review by GLWA.*
- 5) Prefer for signage to contain the word "caution" in bold. *Response: Comment is currently under review by GLWA.*
- 6) GLWA should consider a focus group to evaluate various sign designs. *Response: Comment is currently under review by GLWA.*
- 7) Define timely manner under signage repair in PNP. Response: Comment is currently under review by GLWA.
- 8) Consider using multiple languages on signage. Response: Comment is currently under review by GLWA.
- 9) Provide notification of plan/signage through public radio. *Response: Comment is currently under review by GLWA.*
- 10) Provide notification of plan through a press release. Response: Comment is currently under review by GLWA.

Written Comments

1) Add signage near both the river's edge and the discharge area so that boaters, fishermen and others are more visibly notified of discharge areas; this would likely require two or more signs; take photos of each location denoting where the sign(s) is/are posted. *Response: Comment is currently under review by GLWA.*

 Since the DEQ MiWaters notification system is in development, hold a PR/media campaign for residents living near a discharge area so that they understand that MiWaters is the system of record and notification; allow public entities to preview the system as soon as practical.

Response: Comment is currently under review by GLWA.

3) The PNP should include the following potentially impacted public access: Yacht clubs, marinas, boat clubs, etc., places with the likelihood that individuals will be on or around the water should be directly notified of discharge events. Response: Comment is currently under review by GLWA.

In accordance with 40 CFR Part 122.38(c)(6), the following a summary of significant comments and recommendations by affected public entities whose waters may be impacted by a CSO discharge:

Written Comments

1) Whenever there is an overflow we are concerned because it eventually impacts the water quality around the island. We want to be notified for each occurrence.

We have to sample in the vicinity of our wastewater treatment plant as required by the MDEQ to verify the quality of our discharges. Any overflow upstream may impact the readings.

Response: Notification of public entity will occur from GLWA for each CSO occurrence.



Exhibit C - Figure 1: Typical Outfall Schematic and Location of Sewer and River Level Sensors



Exhibit C - Figure 2: Rating Curve for Determining CSO Hydrograph

Head Discharge Relationship (Rating Curve) for Livernois Relief Outfall







Exhibit C - Figure 3: Protocol for Determining CSO Hydrograph





NPDES Permit No. MI0022802 Permitted CSO Outfall No.

THIS OUTFALL MAY OVERFLOW ADEQUATELY TREATED AND DISINFECTED WASTEWATER DURING AND FOLLOWING RAINFALL AND SNOWMELT AS PERMITTED BY THE MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

FOR MORE INFORMATION CALL: The Great Lakes Water Authority @ 844.455.GLWA 8:30AM-SPM M-F

OR VISIT: www.glwater.org/CSO



SIGN SIZE: 8" WIDE X 11" TALL

NPDES Permit No. MI0022802 Permitted CSO Outfall No.

THIS OUTFALL MAY OVERFLOW UNTREATED WASTEWATER DURING AND FOLLOWING RAINFALL AND SNOWMELT AS PERMITTED BY THE MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

> FOR MORE INFORMATION CALL: The Great Lakes Water Authority @ 844.455.GLWA

> > 8:30AM - 5PM M - F

OR VISIT: www.glwater.org/CSO



