Milwaukee Metropolitan Sewerage District

Combined Sewer Overflow Public Notification Plan

July 16, 2018

Section 1 Introduction

The Milwaukee Metropolitan Sewerage District (District) serves 1.1 million people in 28 communities in six watersheds in 411 square miles. The District operates two water reclamation facilities: Jones Island and South Shore. To manage peak flows, the District operates a storage system with a capacity of 521 million gallons. The storage system became operational in 1994. The capacity of the water reclamation facilities and storage system has made overflows rare. In the average year, the District treats 98% of the flow that enters the sewerage system. Figure 1.1 shows the number of combined sewer overflow events per year since 1994. Figure 1.2 shows the total annual volume of overflows, from both the combined sewerage system and the sanitary sewerage system since 1994.

Among the communities served by the District, Milwaukee and Shorewood are served, in part, by combined sewers. The combined sewer service area is 24 square miles. Figure 1.3 shows the District's service area and the combined sewer service area. Figures 1.4 to 1.6 show the location of combined sewer outfalls.

The combined sewer service area has 115 combined sewer overflow outfalls. These outfalls discharge to seven waterways, as shown in Table 1.1. Tables 1.2 to 1.8 identify individual combined sewer overflow outfalls by the receiving surface water.

The District continuously monitors various parameters, including: conveyance system levels, storage system level, surface water levels, water reclamation facility capacity and influent flow rate, storage system influent flow rate, and precipitation rates. During extreme wet weather events, when water reclamation facility capacity and storage capacity for combined sewage is fully used, operators close the gates from the combined sewerage system to the storage system. Closure of these gates will cause levels in the near surface sewerage collection system to rise. When these levels reach the elevation of an outfall, then the outfall will discharge to surface water.

Central Console Operators identify possible overflows from alarms on the real-time conveyance monitoring system. Overflows are verified using monitoring information and field observations.

The District already notifies the public and other governmental agencies of combined sewer overflows. The District is preparing this plan now in response to new federal regulations, 40 CFR 122.38, which were published in the *Federal Register* on January 8, 2018, and became effective on February 7, 2018. For overflows to the Great Lakes Basin, these new regulations establish minimum overflow notification procedures and the preparation of a notification plan no later than August 7, 2018.

Figure 1.1
Number of Combined Sewer Overflow Events Per year

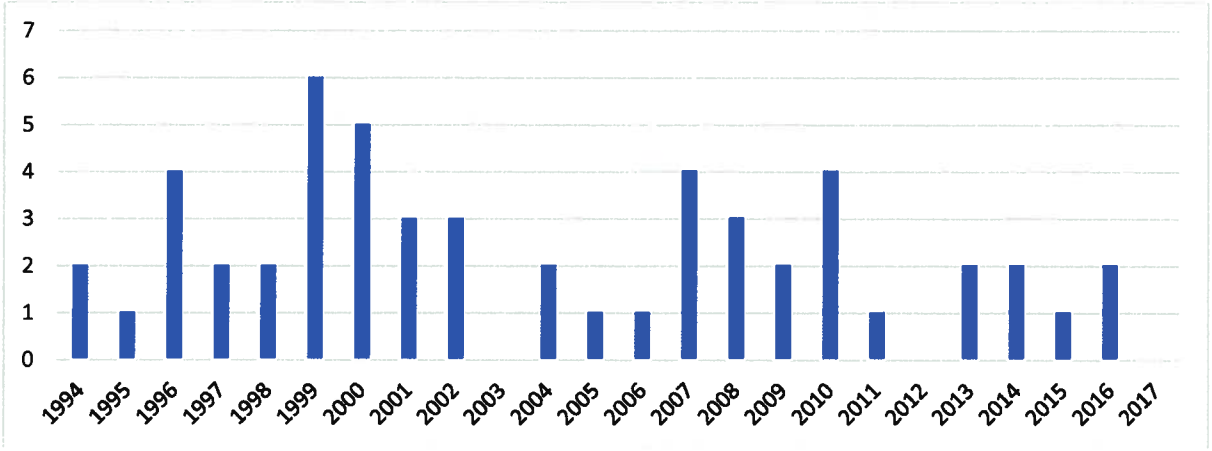
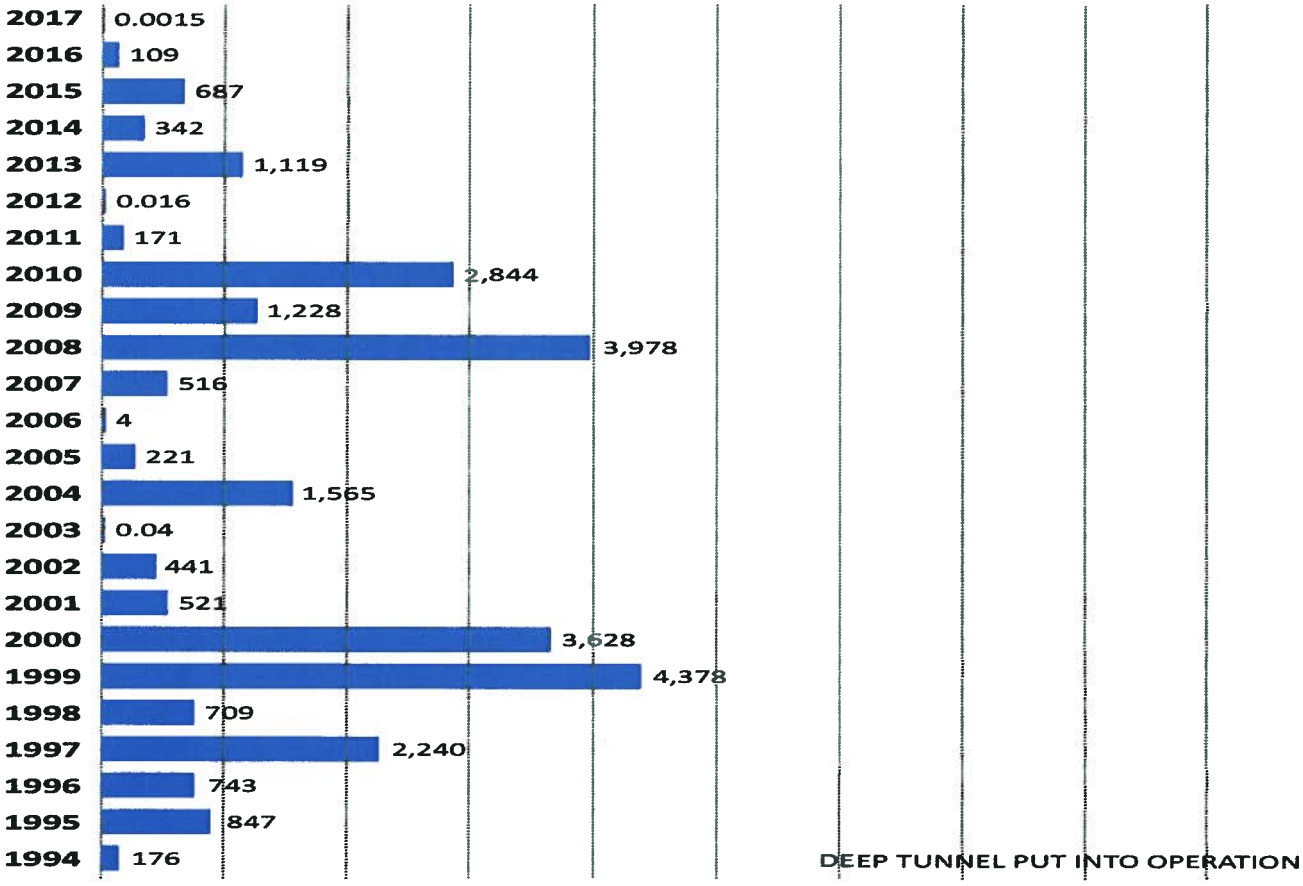


Figure 1.2
Annual Total Combined and Sanitary Overflow Volume
(millions of gallons)



From: https://www.mmsd.com/what-we-do/wastewater-treatment/overflows (July 10, 2018)

Figure 1.3
Service Area Map

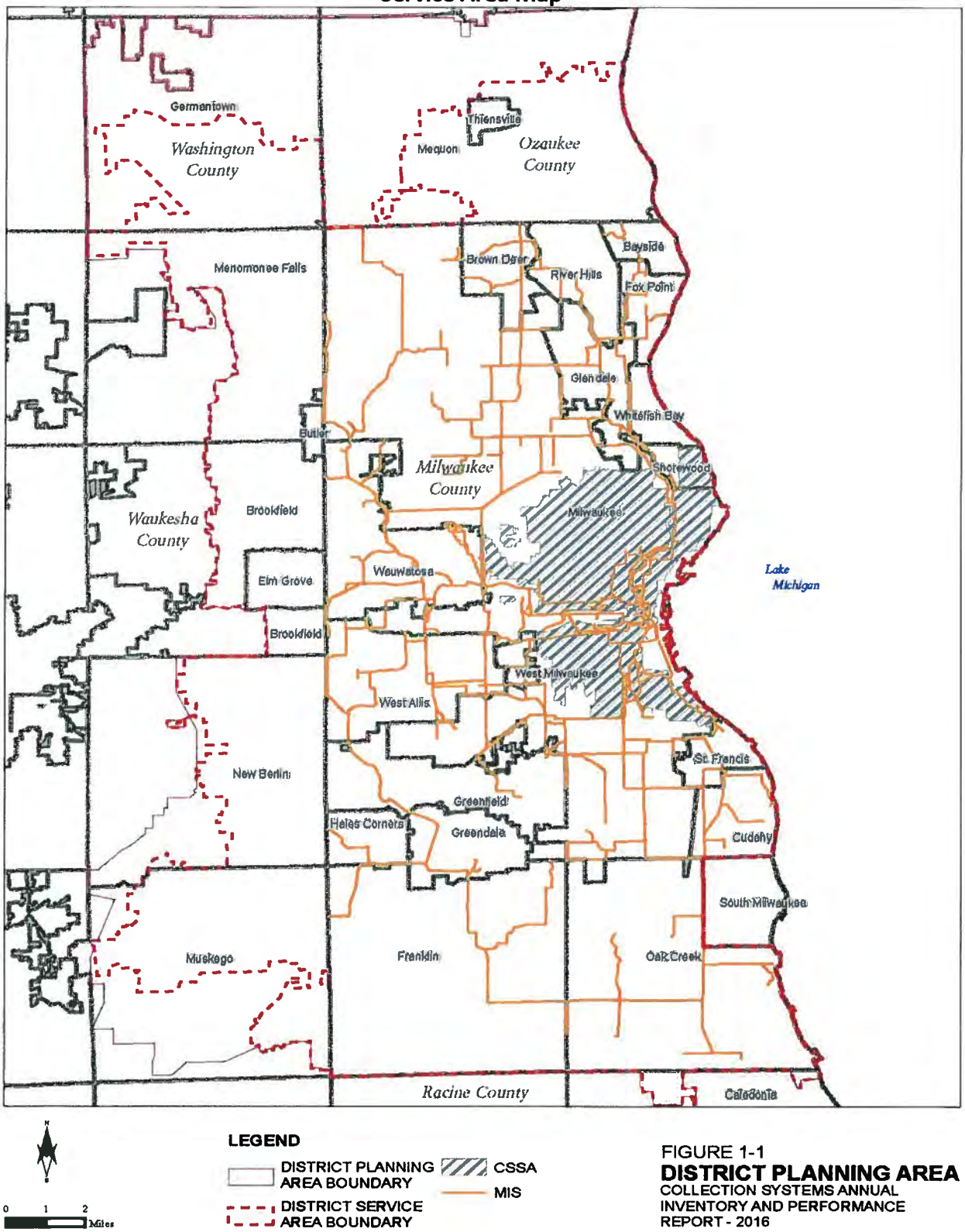


FIGURE 1-1
DISTRICT PLANNING AREA
COLLECTION SYSTEMS ANNUAL INVENTORY AND PERFORMANCE REPORT - 2016

Figure 1.4
Kinnickinnic River and Lake Michigan Combined Sewer Overflow Outfalls

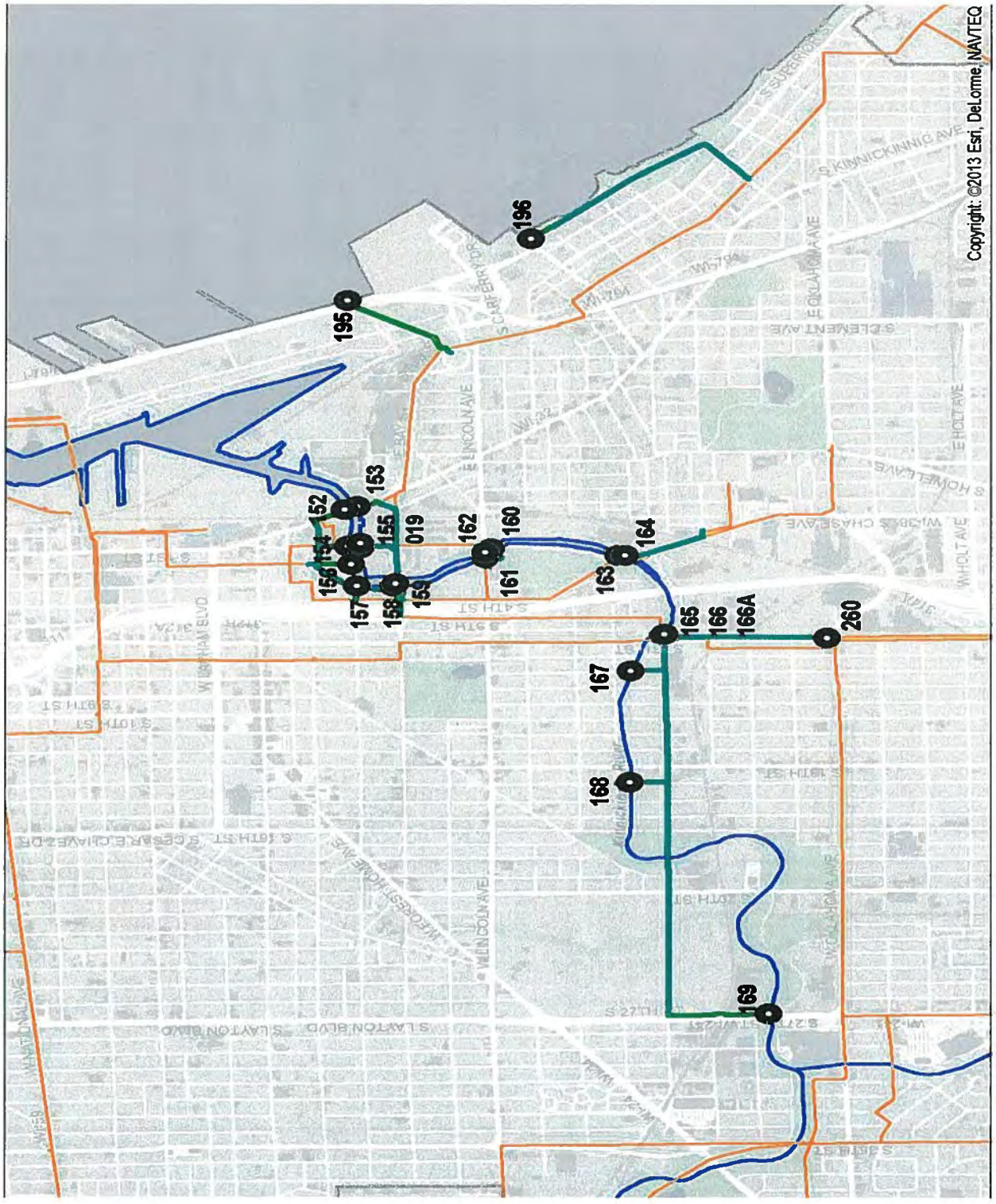


Figure 1.5
Menomonee River Outfalls

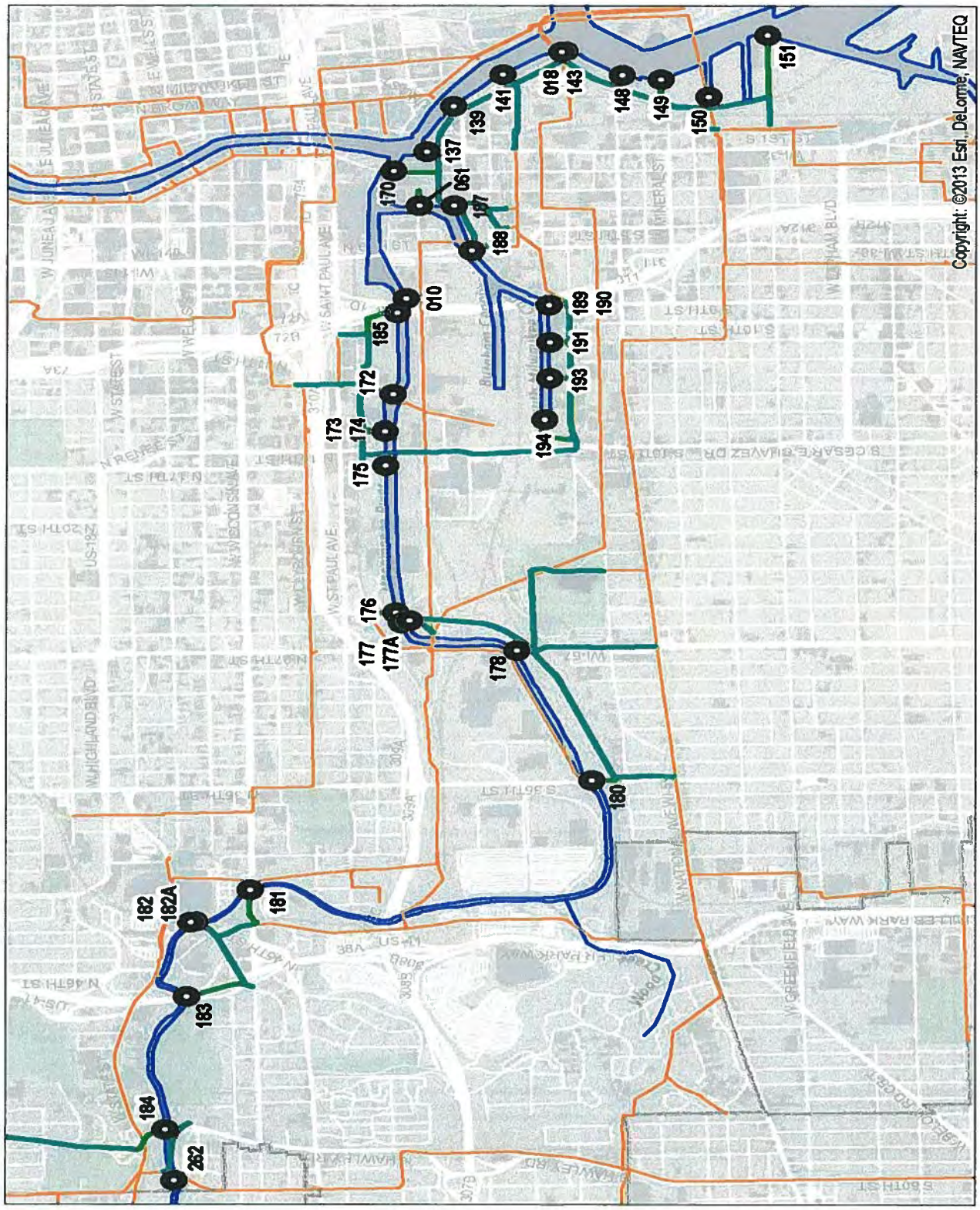


Figure 1.6
Milwaukee River and Lincoln Creek Outfalls

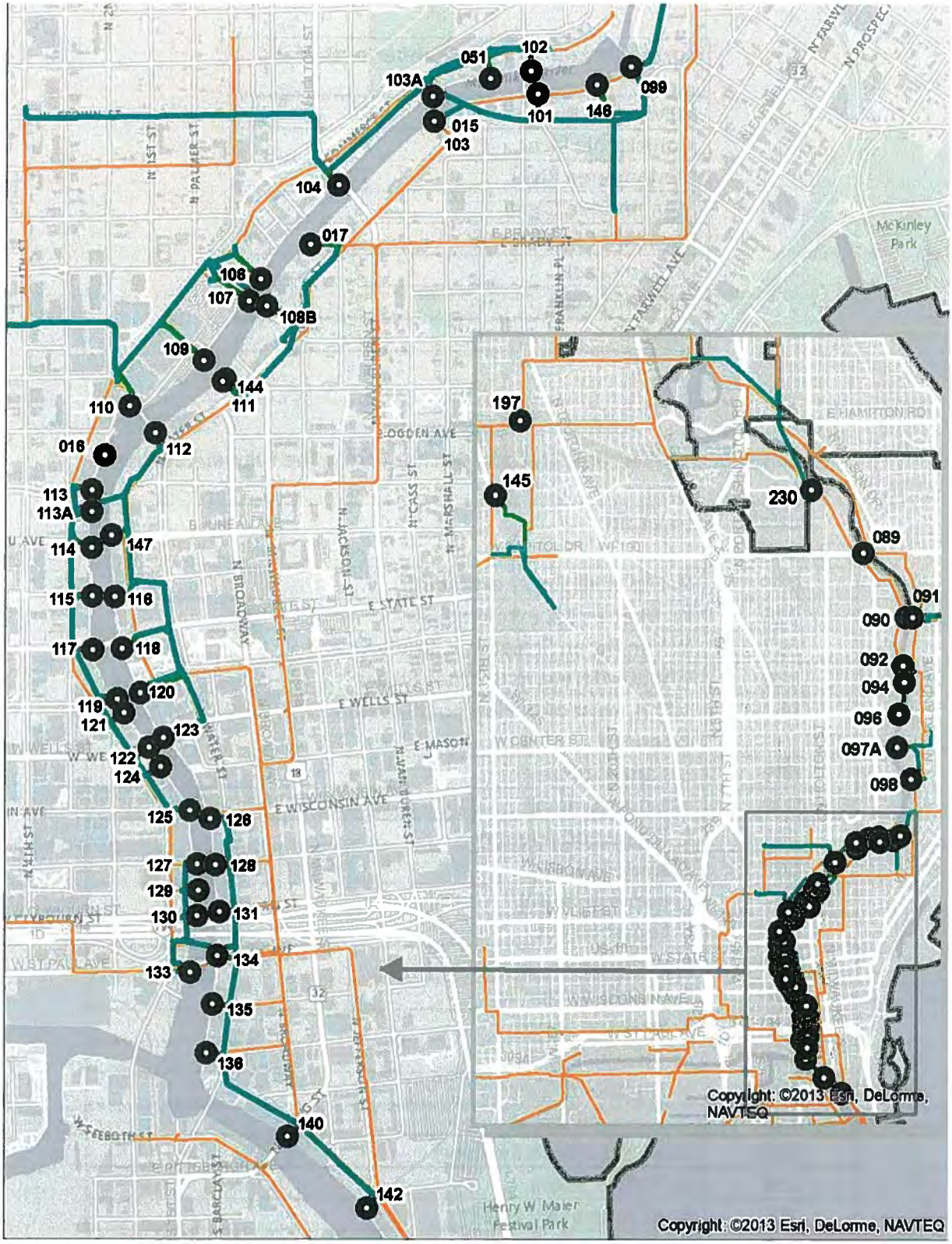


Table 1.1
Combined Sewer Overflow Outfall Summary

Surface Water	Number of Outfalls
Milwaukee River	60
Kinnickinnic River	25
Menomonee River	18
Menomonee Canal	3
Burnham Canal	5
Lincoln Creek	2
Lake Michigan	2
Total	115

Table 1.2
Combined Sewer Overflow Outfalls Discharging to the Milwaukee River

Outfall Number	Location
015	N. Marshall Street extended
016	W. Vliet Street extended, east of N. 3rd Street
017	N. Van Buren Street at E. Brady Street
018	S. Water Street at E. Bruce Street
051	300 ft. west of N. Humboldt Avenue & N. Weil Avenue extended
089	E. Capitol Drive
090	E. Keefe Avenue
091	E. Edgewood Avenue
092	E. Auer Avenue
094	E. Burleigh Street
096	E. Locust Street
097A	E. Park Place
098	E. Bradford Avenue
099	E. Boylston Street
101	N. Pulaski Street
102	N. Humboldt Avenue
103	N. Marshall Street
103A	1944 N. Commerce Street
104	N. Holton Street
106	N. of E. Pleasant Street
107	E. Walnut Street

108B	E. Pleasant Street at N. Water Street
109	N. of W. Cherry Street
110	W. Cherry Street
111	E. Lyon Street
112	E. Ogden Avenue
113	W. McKinley Avenue
113A	W. McKinley Avenue
114	W. Juneau Avenue
115	W. Highland Avenue
116	E. Highland Avenue
117	W. State Street
118	E. State Street
119	W. Kilbourn Avenue
120	E. Kilbourn Avenue
121	N. of W. Wells Street
122	W. Wells Street
123	E. Wells Street
124	N. of W. Wisconsin Avenue
125	W. Wisconsin Avenue at Milwaukee River
126	E. Wisconsin Avenue
127	W. Michigan Street
128	E. Michigan Street
129	N. of W. Clybourn Street
130	W. Clyboun Street
131	E. Clybourn Street
133	W. St. Paul Avenue
134	E. St. Paul Avenue
135	E. Buffalo Street
136	E. Chicago Street
137	S. 1st Place
139	E. Pittsburgh Avenue
140	N. Broadway
141	E. Florida Street
142	E. Polk Street
143	E. Bruce Street
144	E. Lyon Street
146	N. Arlington Place
147	E. Juneau Avenue
230	N. Richards Street at E. Congress Street

Table 1.3

Combined Sewer Overflow Outfalls Discharging to the Kinnickinnic River

Outfall Number	Location
019	S. First Street
148	E. National Avenue
149	S. of E. Walker Street
150	S. of E. Washington Street
151	E. Greenfield Avenue
152	S. Kinnickinnic Avenue (north bank)
153	S. Kinnickinnic Avenue (south bank)
154	S. 1st Street (north Bank)
155	S. 1st Street (south Bank)
156	S. 2nd Street
157	W. Rogers Street
158	W. Becher Street (north outfall)
159	W. Becher Street (south outfall)
160	South of E. Lincoln Avenue
161	W. Lincoln Avenue (west bank)
162	W. Lincoln Avenue (east bank)
163	S. Chase Avenue (north bank)
164	S. Chase Avenue (south bank)
165	S. 6th Street at W. Cleveland Avenue (middle outfall)
166	S. 6th Street at W. Cleveland Avenue (north outfall)
166A	S. 6th Street at W. Cleveland Avenue (south outfall)
167	S. 8th Street
168	S. 14th Street
169	S. 27th Street
260	S. 6th Street at W. Oklahoma Avenue

Table 1.4

Combined Sewer Overflow Outfalls Discharging to the Menomonee River

Outfall Number	Location
010	West Canal Street at 8th Street
170	S. 2nd Street at Menomonee River
172	N. Emmber Lane (east outfall)
173	N. 15th Street (east outfall)
174	N. 15th Street (west outfall)
175	N. 17th Street
176	N. 25th Street
177	N. 26th Street
177A	123 N. 25th Street
178	S. 27th Street at Menomonee River (west outfall)
180	S. 35th Street
181	W. Wisconsin Avenue at Menomonee River
182	N. 43rd Street
182A	4251 W. State Street
183	N. 45th Street
184	N. Hawley Road
185	N. 9th Street Extended
262	59th Street and State Street

Table 1.5

Combined Sewer Overflow Outfalls Discharging to the Menomonee Canal

Outfall Number	Location
061	Emergency Wastewater Exit Facility
187	S. 4th Street
188	S. 6th Street

Table 1.6

Combined Sewer Overflow Outfalls Discharging to the Burnham Canal

Outfall Number	Location
189	S. 9th Street (east outfall)
190	S. 9th Street (west outfall)
191	S. 11th Street
193	S. 13th Street
194	S. Muskego Avenue

Table 1.7

Combined Sewer Overflow Outfalls Discharging to Lincoln Creek

Outfall Number	Location
145	N. 35th Street and W. Congress Street
197	Hampton Avenue at 32nd Street

Table 1.8

Combined Sewer Overflow Outfalls Discharging to Lake Michigan

Outfall Number	Location
195	E. Bay Street
196	E. Russell Avenue

Section 2 Signs

2.1. Location

All combined sewer overflow outfalls have signs.

2.2. Explanation for outfalls without signs

No outfalls are without signs.

2.3. Sign Text

All signs have the same text. All signs identify a District telephone number, the District web site, the WPDES permit number, and outfall number.

2.4. Inspections or other procedures to keep the signs legible, visible, and correct

A general signage inspection will occur annually. In addition, inspections will occur when work occurs at an outfall. The District will correct or replace signs as needed.

Figures 2.1 to 2.3 are examples of pages from sign inspection logs. These examples show sign location and text.

Figure 2.1
Sign Inspection Log – CSO 157

CSO SIGN INSPECTION

Date:		**3/22/2018**
Site ID:		**CSO-157**
Location:	**E. Roger St.**	
Sign in placed:	**(Y) N**	**New Sign 3/21/2018**
Maintenance Needed:	**Y (N)**	
Truck #:	**KS, JL**	

Map

Picture

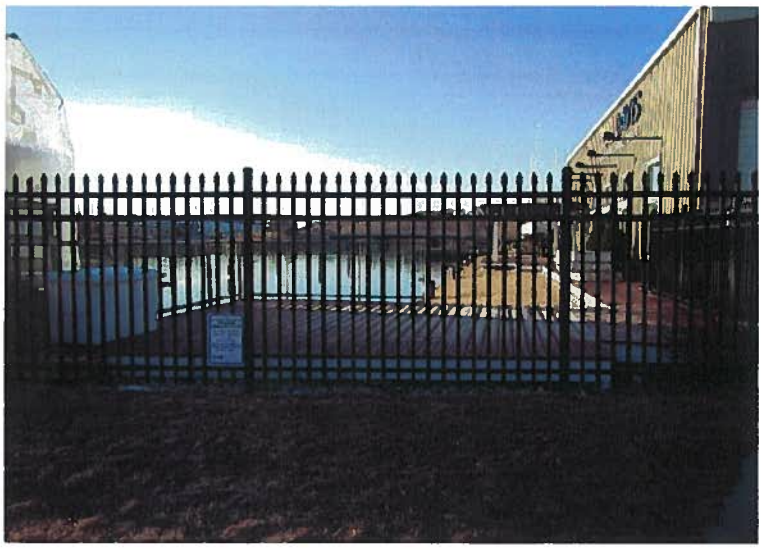


Figure 2.2
Sign Inspection Log – CSO 178

CSO SIGN INSPECTION		
Date:		**12/21/2017**
Site ID:		**CSO-178**
Location:	**S. 27th ST.**	
Sign in placed:	**Y** N	**New Sign 12/21/2017**
Maintenance Needed:	Y N	
Truck #:	**307SD**	

Map

Picture

Figure 2.3
Sign Inspection Log – CSO 180

CSO SIGN INSPECTION

Date:		**12/13/2017**
Site ID:		**CSO-180**
Location:	**S. 35th ST. (South side of the river, see Map for access)**	
Sign in placed:	**(Y) N**	**New Sign 12/13/2017**
Maintenance Needed:	**Y N**	
Truck #:	**337SD**	

Map

Picture

Section 3 Consultation

As indicated above, Milwaukee and Shorewood are the municipalities with combined sewer areas. Milwaukee has its own health department. Shorewood participates with several other municipalities in the North Shore Health Department. In response to the new requirements for a Combined Sewer Overflow Public Notification Plan, the District contacted the Milwaukee and North Shore Health Departments on May 29, 2018, to obtain their advice regarding potentially impacted public access areas and overflow notification procedures.

The District received comments from the Milwaukee Health Department on June 28, 2018. The comments requested that the Plan:

(1) indicate that beach monitoring occurs Memorial Day through Labor Day,
(2) identify the web sites where the results are available,
(3) note that the Health Department does not routinely sample at boat launches, and
(4) indicate that the District will provide a copy of the annual report to the Health Department.

The Plan incorporates the requested changes. Regarding providing a copy of the annual report, the District will make the annual report available to anyone upon request. Also, the comments requested clarification regarding how the District provides notice of overflows. This information is already in Appendix 1. Therefore, no changes to the Plan were needed.

The District received comments from the North Shore Health Department on June 26, 2018. The comments requested that the Plan identify the North Shore Health Department as a contact for questions regarding Atwater Beach in Shorewood. The plan incorporates this change.

Section 4 Potentially Impacted Public Access Areas

4.1 Introduction

This section identifies surface water public access areas within the combined sewer area. Although a potential exists for combined sewer overflows to affect these areas, combined sewer overflows are only one of many factors that affect water quality The identification of a public access area in this section does not imply that combined sewer overflows are the actual cause of any specific water quality impairments at these locations at any specific time. The following documents provide detailed information regarding water quality and how pollutant loads from combined sewer overflows relate to pollutant loads from other sources.

- *A Regional Water Quality Management Plan Update for the Greater Milwaukee Watersheds* (Southeastern Wisconsin Regional Planning Commission 2007 (amended 2013))
- *Milwaukee Basin Total Maximum Daily Loads Report* (Wisconsin Department of Natural Resources 2017)

Figures 4.1, 4.2, and 4.3 show the water supply intakes, beaches, and recreational boat launches within the combined sewer area.

4.2 Water Supply Intakes

The City of Milwaukee Water Works has two water intakes in Lake Michigan near the combined sewer area. However, the Linnwood intake is 1.25 miles from the shoreline at a depth of 60 feet and the Texas Avenue intake is 2.5 miles from the shore at a depth of 60 feet.

Contact: Milwaukee Water Works, 414-286-2830

4.3 Beaches

Milwaukee County operates three beaches near the combined sewer area: Bradford, McKinley, and South Shore. From Memorial Day through Labor Day, the City of Milwaukee Health Department samples surface water at these beaches and provides water quality advice to beach users. Information is available from the main health department web page and a beach page:

http://city.milwaukee.gov/Health/#.WzUh79JKjic

http://city.milwaukee.gov/health/recreational-Water/health/beach-Advisories.htm#.WzUiGNJKjic

Atwater Beach in Shorewood is within the combined sewer area. However, the combined sewer overflow outfalls discharge to the Milwaukee River, far from the beach, rather than to Lake Michigan. Therefore, combined sewer overflows will not affect Atwater Beach.

Contact: Milwaukee Health Department, 414-286-3521
North Shore Health Department (Shorewood Atwater Beach), 414-371-2980

4.4 Recreational Boat Launches

Six sites for boat launching are within or near the combined sewer area. These sites are within the City of Milwaukee. The Milwaukee Health Department does not routinely monitor these sites.

Table 4.1
Boat Launch Sites

Waterway	Launch Site
Lake Michigan	McKinley, South Shore
Milwaukee River	Riverfront, Kiwanis Landing
Menomonee River	Emmber Lane, Valley Passage

Contact: Milwaukee Health Department, 414-286-3521

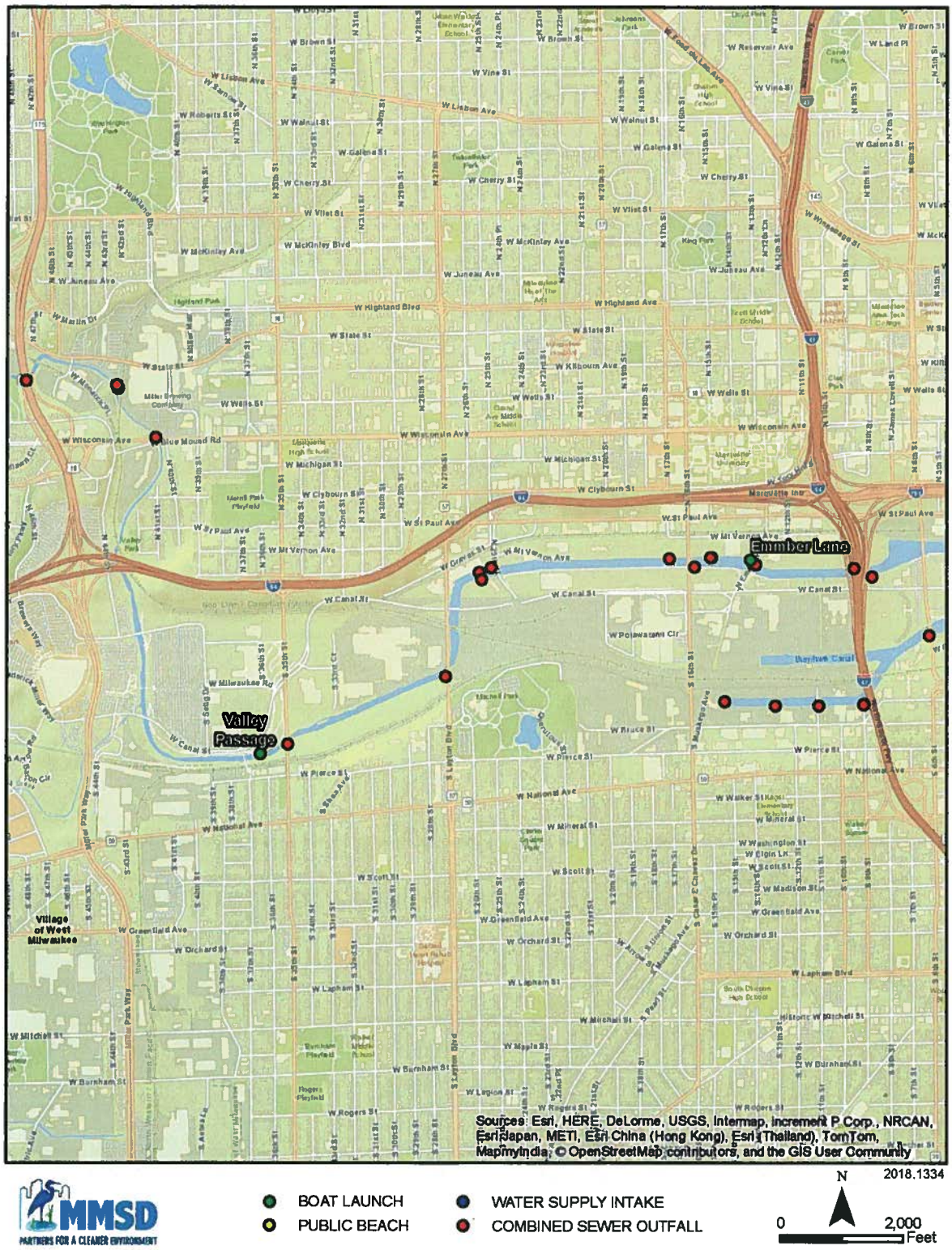
Figure 4.1

Potentially Impacted Public Access Areas – Kinnickinnic River and South Shore

Figure 4.2

Potentially Impacted Public Access Areas – Milwaukee River and North Shore

Figure 4.3
Potentially Impacted Public Access Areas – Menomonee River



Section 5 Procedure for Determining CSO Volume, Duration, and Need to Recalibrate Model

Typically, combined sewer overflows begin a short time after the District closes the combined sewer gates to the deep tunnel storage system. These combined sewer overflows end when combined sewer gates to the deep tunnel storage system reopen. However, in cases of intense localized rain, isolated combined sewer overflows may occur unrelated to the closure of gates to the deep tunnel storage system.

Of the District's 115 combined sewer overflow outfalls, 106 outfalls are hydraulically connected to deep tunnel storage system drop shafts. For these outfalls, the District uses a model to determine the location, timing, and volume of overflows. The model considers individual junction chamber levels; surface water levels at each outfall; and the location, elevation, and configuration of each outfall.

The remaining nine outfalls are not hydraulically connected to deep tunnel storage system drop shafts. For these outfalls, the District uses site-specific methods to calculate overflows, such as pump run time and pump capacity or level measurements and weir equations. After the District reopens combined sewer gates to the deep tunnel storage system, the District dispatches field crews to perform inspections at these nine outfalls to gather sewage level data and verify overflows. Depending upon the duration and intensity of the event and whether the overflow is system-wide or localized, data compilation and review may take up to three days after an event is over.

After field data is compiled and reviewed, the District runs its overflow model and performs site-specific calculations to produce an overflow report. Figure 5.1 shows an example of this report.

The District has operated its combined sewer overflow model since the 1980s. The District has continuously refined this model since its inception. The District will continue to update this model as conditions change. The District will recalibrate the model in response to advancements in modeling, improvements to instrumentation, or conveyance system changes that affect outfalls or overflow set points. No less frequently than once every five years, the District will evaluate whether model recalibration is necessary, as required by 40 CFR 122.38(c)(9).

Figure 5.1
Combined Sewer Overflow Report Example

MMSD
PARTNERS FOR A CLEANER ENVIRONMENT

Milwaukee Metropolitan Sewerage District
CSO Monitoring Report Summary

Reporting Period Start Date 4/10/13
Reporting Period End Date: 4/12/13

Collector System		*Total Estimated Volume (MG)*	*Total Estimated Duration (Hours)*
CT2	WPDES 113 North Hawley Road & West State Street	11.6	27
CT3/4	WPDES 114 North 44th Street & West Wells Street	22.6	5
CT5/6	WPDES 115 North 25th Street at the Menomonee River	47.7	4
CT7	WPDES 116 South 16th Street & West Canal Street	8.1	4
CT8	WPDES 117 South 3rd Street & West Seeboth Street	1.0*	1
KK1	WPDES 118 South 6th Street & West Cleveland Avenue	22.8	8
KK2	WPDES 119 South 1st Street & South Chase Avenue	1.0*	1
KK3	WPDES 120 South 4th Street & West Becher Street	10.3	3
KK4	WPDES 121 South 1st Street & West Lincoln Avenue	1.0*	1
LMN	WPDES 122 East Bay Street & East Ward Street	47.1	8
LMS	WPDES 123 South Lincoln Memorial Drive & East Russell Avenue	1.0*	1
NS4	WPDES 104 North Cambridge Avenue & East Providence Avenue	4.8	14
NS5	WPDES 105 East Burleigh Street at the Milwaukee River	0.5	1
NS6	WPDES 106 East Park Place at the Milwaukee River	9.4	12
NS7	WPDES 107 North Commerce Street & North Booth Street	20.8	6
NS8	WPDES 108 North Commerce Street & East Pleasant Street	12.4	6
NS9	WPDES 109 North Old World 3rd Street & West McKinley Avenue	12.1	10
NS10	WPDES 110 North Water Street & East St. Paul Avenue	7.1	6
NS11	WPDES 111 North Humboldt Avenue & East Capitol Drive	2.4	7
NS12	WPDES 112 North 31st Street & West Capitol Drive	0.0	
Total Estimated CSO Discharge For Dropshaft Basins		**243.7**	
Combined Sewer Overflow Volumes from CSO Outfalls Not Tributary to the ISS Dropshafts			
	CSO-197 West Hampton Avenue & North 32nd Street	3.9	2
	CSO-230 North Richards Street & East Congress Street	2.6	10
	CSO-260 South 6th Street & West Oklahoma Avenue	208.8	46
	CSO-262 North 59th Street & West Trenton Place	135.8	41
Total Estimated Non-Tributary Discharge		**351.1**	

TOTAL ESTIMATED CSO DISCHARGE: **594.8 MG**
For 4/10/13 Through 4/12/13

* Non-CSOLOG estimate; see CSO Flow Adjustment Report for more information.

April 16,2013 9:50am *Version 2.2h Page 1 of 1*

Section 6 Notice to Governments

6.1 Introduction

For events related to overflows, the District will provide various notices to other governments, including: (1) brief immediate notices; (2) notices to the Department of Natural Resources, as required by the District's WPDES permit; and (3) the four-hour and seven-day notices required by the new regulations in 40 CFR 122.38(a)(2). The District already provides the immediate brief notices and the notices required by the permit. For the four-hour and seven-day reports, the requirements are new.

Central Control System Operators continuously monitoring system status. These operators implement a *Sewer Overflow Response Plan* and an *Overflow Notification Standard Operating Procedure*. Appendix 1 provides the Plan and Appendix 2 provides the Procedure.

6.2 Immediate Notice

Central Control System Operators will provide brief immediate notices of overflow events, as shown in Table 6.1.

6.3 Reports to the Department of Natural Resources

The District's WPDES permit requires notices to the Department of Natural Resources within 24 hours of becoming aware of an overflow and a detailed written report within five days. The District will continue to provide these notices as required by the permit.

6.4 Four-Hour Notice

Within four hours of becoming aware of a combined sewer overflow, 40 CFR 122.38(a)(2)(i) requires the District to provide notice to the health department and other potentially affected public entities. For the District, the relevant entities are the Milwaukee Health Department and the Milwaukee Water Works, as indicated in Section 4. In this notice, the District will provide the following information:

a. the receiving water,
b. the discharge location,
c. potentially impacted public access areas,
d. the date and time the discharge commenced or was identified,
e. whether the discharge is continuing, and
f. a District contact person.

6.5 Seven-Day Notice

Combined with the five-day notice required by the WPDES Permit, the District will provide notice to the Milwaukee Health Department and the Milwaukee Water Works, as required by 40 CFR 122.38(a)(2)(ii). In this notice, the District will provide the following information:

a. the receiving water,
b. the discharge location,
c. potentially impacted public access areas,
d. the date and time the discharge commenced or was identified,
e. the ending date and time,
f. estimated discharge volumes, and
g. a District contact person.

Table 6.1
Recipients of Immediate Notice of Overflow Events

Event	Notice Recipients
False Alarm	Central Control System Operators District Headquarters
Possible Overflow	Central Control System Operators Plant Managers District Headquarters
Confirmed Overflow	Central Control System Operators Plant Managers District Headquarters
Combined Sewer Gates Closure	Central Control System Operators Shift Supervisors Plant Managers District Headquarters Department of Natural Resources Milwaukee Health Department Milwaukee Water Works Cudahy Water Utility North Shore Water Utility Oak Creek Water Utility South Milwaukee Water Utility University of Wisconsin Milwaukee
Sanitary Sewer Gates Closure	Central Control System Operators Shift Supervisors Plant Managers District Headquarters Department of Natural Resources Milwaukee Health Department Milwaukee Water Works Cudahy Water Utility North Shore Water Utility Oak Creek Water Utility South Milwaukee Water Utility University of Wisconsin Milwaukee Municipal staff at all 28 tributary municipalities

Section 7 Public Notice

7.1 Capacity Utilization and Weather Information

To allow the public to understand how weather relates to sewerage system performance, the District will maintain real-time information on its website regarding water reclamation facility capacity utilization, storage system capacity utilization, and rain gauge data. Figures 7.1 and 7.2 show the web sites with this information.

7.2 Four-hour notice procedure

Within four hours of becoming aware of a combined sewer overflow, the District will post on its website the following information.

a. the receiving water,
b. the discharge location,
c. potentially impacted public access areas,
d. the date and time the discharge commenced or was identified, and
e. whether the Discharge is continuing.

7.3 Seven-day notice procedure

Within seven days after the conclusion of a combined sewer overflow, the District will post on its website the following information.

a. the receiving water,
b. the discharge location,
c. potentially impacted public access areas,
d. the date and time the discharge commenced or was identified,
e. the ending date and time, and
f. estimated discharge volumes by outfall.

7.4 Annual Information

The District will maintain a website showing the total volume treated, percent of volume treated, and total overflow volume for the current calendar year and the percent volume treated for past years. Figure 7.3 shows the web site with this information.

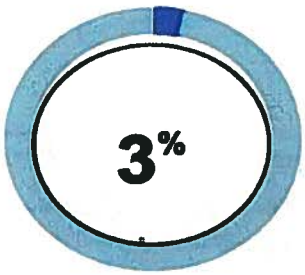
Figure 7.1

Water Reclamation Facility and Storage System Capacity Utilization Web Site

Last updated: Mar 2, 2018, 8:15 AM (updated every 5 minutes)

MILWAUKEE DEEP TUNNELS

DEEP TUNNEL



CURRENT STORAGE : 13 million gallons

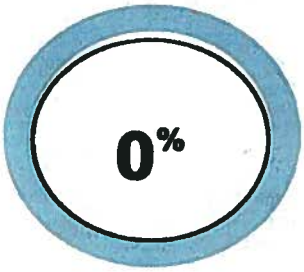
MAX CAPACITY : 432 million gallons

LENGTH: 21.4 MILES

DIAMETER 17 FT. TO 32FT

DEPTH UNDERGROUND: 300 FT.

NORTHWEST SIDE DEEP TUNNEL



CURRENT STORAGE : 0 million gallons

MAX CAPACITY : 89 million gallons

LENGTH: 7.1 MILES

DIAMETER 20FT

DEPTH UNDERGROUND 135ft. TO 175 FT.

WATER TREATMENT FACILITIES

SOUTH SHORE WATER RECLAMATION FACILITY

CURRENTLY TREATING : 84 million gallons / day

MAX CAPACITY : 220 million gallons / day

JONES ISLAND WATER RECLAMATION FACILITY

CURRENTLY TREATING : 67 million gallons / day

MAX CAPACITY : 283 million gallons / day

Figure 7.2
Rain Gauge Web Site

MMSD RAIN GAUGE DATA

Data from: Mar 7, 2018, 12:00 AM

Through Mar 7, 2018, 11:59 AM

(Updated every five minutes)

Legend:

0.00" RAIN GAUGE AMOUNT

DEEP TUNNEL SYSTEM

Figure 7.3
Annual Percent Treated and Overflow Information

Home / About Us / Weather Center / Volume Treated Data

MMSD has captured and cleaned 98.4% of all the water and wastewater that's entered the regional sewer system since we started operating the Deep Tunnel in 1994. The goal nationally is an 85% capture and clean rate for the more than 700 cities with sewer systems like ours.

HOW ARE WE DOING IN 2018?

Volume Treated measures how much water and wastewater MMSD captures and treats by year versus the amount that the District releases from its sewers to area waterways untreated during heavy rain storms to prevent basement backups.

VOLUME TREATED

District Gallons Treated: 10,860,000,000

District Gallons Overflowed: 0

District Total Gallons: 10,860,000,000

District % Treated: 100.00%

% OF VOLUMES CAPTURED & CLEANED

TOTAL PERCENT CAPTURE 98.5%

1994	99.7%	1999	94.8%	2004	97.9%	2009	98.3%	2014	99.5%
1995	98.9%	2000	95.6%	2005	99.6%	2010	96.1%	2015	98.9%
1996	99.0%	2001	99.3%	2006	99.9%	2011	99.7%	2016	99.8%
1997	97.1%	2002	99.3%	2007	99.2%	2012	99.9%	2017	99.9%
1998	99.1%	2003	99.9%	2008	95.1%	2013	98.5%	2018	

Section 8 Annual Report

No later than May 1 of each year, the District will prepare a report summarizing combined sewer overflows in the preceding calendar year. This report will include:

1. The location and receiving water for each combined sewer overflow outfall;

2. For each combined sewer overflow event:
    a. location,
    b. date,
    c. starting time,
    d. duration,
    e. estimated volume, and
    f. cause;

3. A summary of any overflow monitoring data, such as the name of the junction chamber where sampling occurred and the water quality parameters analyzed;

4. Potentially impacted public access areas. For isolated events, the report may identify specific areas downstream of the overflow. However, for most events the report will reference all areas within the combined sewer service area;

5. Precipitation data for each overflow caused by wet weather;

6. A summary of actions taken to reduce overflows. The report will note that implementation of the nine minimum controls and a long-term control plan are complete;

7. Any changes to outfalls or public notification procedures since the previous report; and

8. The name, title, telephone number and email address of a District contact person.

The District will email this report to npdes_cso@epa.gov and to the Wisconsin Department of Natural Resources. The District will provide it to others upon request. The District will make this report available on the District's web site.

Appendix 1

VEOLIA WATER

Milwaukee Metropolitan Sewerage District

Sewer Overflow Response Plan

Submitted

April 3, 2008 (S.Passarro)
Revised May 9, 2008 (S.Passaro)
Revised February 25, 2009 (P.Noran)
Revised February 10, 2010 (P.Noran)
Revised March 25, 2011 (P.Noran)
Revised February 2, 2012 (P.Noran)
Revised February 6, 2013 (P.Noran)
Revised February 28, 2014 (J.Kittelson)
Revised February 24, 2015 (C.Teoh)
Revised February 25, 2016 (C.Teoh)
Revised February 24, 2017 (M. DuPont)
Revised February 16, 2018 (M. DuPont)

Milwaukee Metropolitan Sewerage District
Sewer Overflow Response Plan

Table of Contents

Attachments

I. Introduction

The Sewer Overflow and Response Plan (SORP) is updated annually to keep its various documents and procedures current with any regulatory changes, changes in contact information, and improvements in program management.

Veolia Water Milwaukee (VWM) and Milwaukee Metropolitan Sewerage District (MMSD) discuss each overflow incident to collect information and share valuable feedback to further improve the quality of each response.

II. Authority

This Sewer Overflow Response Plan (SORP) is prepared in order to address the requirements of MMSD's Wisconsin Pollutant Discharge Elimination System (WPDES) Discharge Permit No. WI-0036820-03-0.

III. General

This Sewer Overflow Response Plan (SORP) is intended to document standard notification, containment and clean-up activities associated with sanitary sewer overflows (SSOs) and combined sewer overflows (CSOs) that may occur in the MMSD's Collection and Conveyance System. The purpose of the SORP is to eliminate or minimize the effect that these overflows might have on public health and local water quality.

IV. Overflow Response Procedure

The trigger for this procedure is when the VWM Conveyance System Manager, the on-call Conveyance Supervisor or the on-duty Computer Console System (CCS) Operator is made aware of a possible overflow/bypass event. This notification may come from any of the following:

- Alarm from the SCADA system
- Notification (most likely a call) from a customer or general public
- Notification from MMSD personnel
- Visual observation of a field crew (MMSD/VWM/Municipal)

The following events require the listed notifications by the CCS Operator. If there are questions or problems with any of the notifications, the on-call MMSD Monitoring Supervisor should be promptly contacted.

A. *Bypass/Overflow Notifications*

There are basic scenarios related to bypasses/overflows that require different responses, as follows:

1) False Alarms - Combined Sewer Overflow Alarm or MIS Bypass Alarm believed to be triggered or caused by Maintenance or Construction Activities and not by an actual overflow. The CCS Operator has prior knowledge of people working at the site and other available information (low levels, pumps not running, etc.) indicating that no overflow or bypass has occurred. The CCS Operator must complete and e-mail the CCS Overflows Form, noting the conditions leading to the false alarm to the "*US VNA MKE False Alarm*" e-mail distribution list (see Attachment A).

2) Possible Combined Sewer Overflow or MIS Bypass - Whenever a bypass/overflow alarm indicates a possible combined sewer overflow or MIS bypass, the CCS Operator must first contact the MMSD Monitoring Supervisor and VWM Conveyance Supervisor, then complete and e-mail the CCS Overflows Form noting all known details to the "*US VW MKE CCS Alarm*" e-mail distribution list (see Attachment A). The CCS Operator will provide updates when field investigations/verifications and other pertinent information become available.

3) Confirmed Overflow/Bypass - Whenever confirmation of a bypass or overflow is received from MMSD management, the standard notifications and documentation must be distributed. Even if there has been prior notification of a possible bypass or overflow, a second, updated form must be distributed using the following procedure. The CCS Operator must contact the MMSD Monitoring Supervisor and VWM Conveyance System Manager, then complete and e-mail the CCS Overflows Form, noting the source of the confirmation as an attachment to the "*US VW MKE Gates*" email distribution list (see Attachment A).

4) CSO Gate Closings - When the CSO Gates are closed, the CCS Operator must contact the VWM Conveyance System Manager. The VWM Conveyance System Manager will then contact MMSD management. When the CSO gate closings are confirmed and after obtaining approval from the VWM Conveyance Manager or MMSD management, the CCS Operator will then complete the CCS Overflows Form and e-mail the Form to the "*US VW MKE Gates*" email distribution list (see Attachment A).

5) SSO Gate Closings - When the SSO Gates are closed, the CCS Operator must contact the MMSD Monitoring Supervisor and the VWM Conveyance System Manager. When the SSO gate closings are confirmed, and after obtaining approval from the VWM Conveyance Manager or MMSD management, the CCS Operator will then complete the CCS Overflows Form and e-mail the Form to the "*US VNA MKE Municipal All*" email distribution list (see Attachment A).

Please refer to the most-current version of the *CCS Operations SOP 005 – Overflow Notification* for more detail.

B. Coordination of Response

The Conveyance System Manager has the overall responsibility and authority to coordinate the response to the overflow notification. The Conveyance System Manager may delegate this authority to the on-call Conveyance Supervisor depending on availability of the Manager and the initial apparent complexity of the situation.

Coordination activities shall include:

- Dispatching of field crews to the site for initial investigation
- Gathering of data from CCS Operators
- Coordination with MMSD Monitoring personnel
- Coordination with Local Municipalities
- Determine appropriate response
- Implementing the response

C. *Dispatch of Sewer Maintenance Personnel to Site of Possible Manhole Overflow or Sewer Back-Up*

When CCS Operators are notified of a possible manhole overflow or a basement back-up, whether during dry- or wet-weather flows, they must quickly determine if it may be related to assets owned by the MMSD. If indications are the overflow or back-up is related to an asset owned by the MMSD, the CCS Operator will contact the VWM Conveyance Supervisor to determine whether a Field Crew should be dispatched to visually inspect the reported problem. The role of the Veolia Field Crew is as follows:

1) Verify whether or not an overflow/bypass is occurring or has recently occurred

2) Gather site data, including water depths in MIS manholes

3) Determine whether the issue is related to the MMSD system or another system. Promptly report all findings back to the VWM Conveyance Supervisor, who will contact the MMSD Monitoring Supervisor. If it is not related to MMSD's system but there is imminent danger to public health, public or private property or to the quality of the waters of the state of Wisconsin, prudent emergency action should be taken until the responsible party is notified and arrives to take responsibility.

A list of contact numbers for the Department of Public Works in each municipality is provided as Attachment A. With MMSD-related overflows/ back-ups, take steps to protect public health, environment and property from sewage spill events and restore affected areas to normal as soon as possible, as listed below.

D. Overflow Correction, Containment and Clean-Up

The general procedure to be followed is as follows:

1) Establish perimeters and control zones with cones, barricades, vehicles or terrain.

2) Request additional assistance, equipment and resources if they are necessary to quickly determine the cause of the overflow/back-up, contain the spill and to correct the condition that caused the event. Refer to the Contractor Call Out List provided in Attachment B.

3) Locate and clear the blockage, if present, or review the system to determine if there is a quick means to divert flow away from the overflow point to alleviate the hydraulic overload. To clear a blockage, refer to the Conveyance SOP titled "Cleaning and Clearing Blockages". Bypass pumping may be necessary to isolate the problem area and make the correction.

4) Update CCS and MMSD; the on-call VWM Conveyance Supervisor will directly contact CCS and the MMSD Monitoring Supervisor.

5) Assist with appropriate public notification as directed by MMSD.

6) Clean up the area affected by the spill.

7) Properly document the spill and complete all required reports.

E. Sewage Overflow/Back-Up Report

For overflows occurring at established overflow structures in the Collection and Conveyance System, the MMSD Monitoring Department will prepare the Report that will be submitted to the applicable regulatory agency on the volume and duration of the overflow event.

For manhole overflows and for basement back-ups, VWM Conveyance Field Crews are responsible to collect the following information:

1) Determination of the approximate volume of the overflow.

2) Documentation of duration of overflow – end time will be when the blockage is cleared or, if overflow has stopped prior to the Field Crew's arrival, documentation of arrival time and status of overflow.

3) Photographs of the event, if possible.

4) Documentation of any damage to the exterior areas of adjacent public/ private property apparently caused by the overflow. VWM Field Crew will not enter private property for purposes of estimating damage without direct authorization from the VWM Conveyance Supervisor and/or VWM Conveyance System Manager.

5) Any identified causes of the overflow.

6) Corrective actions taken.

7) Issues that impeded the response (failures or problems with equipment, communication, plan availability, etc.).

F. *Customer Satisfaction*

In situations where homeowners or ratepayers are involved in the back-up/ overflow event, the VWM Conveyance System Manager or his/her designee will follow-up in person or via telephone with the person(s) who originally reported the event and with others who were directly affected by the overflow/back-up. The cause of the overflow and the resolution will be disclosed with the affected parties.

V. Public Advisory

MMSD and VWM will work in cooperation with the Wisconsin DNR to quickly and efficiently notify people of a confirmed overflow in order to isolate the affected area until sufficient clean-up has been performed that it is deemed safe to allow public access again.

a) MMSD Web Site – Overflow locations are immediately posted on www.mmsd.com to provide the public with 24 hour per day access to this information.

b) When an overflow occurs in an area where contact with the public is possible, temporary signs will be posted adjacent to the overflow site that will provide a warning of potential public health risks due to sewage contamination.

c) MMSD shall determine on a case-by-case basis if other forms of public notification such as newspaper notices or fliers are necessary to adequately inform the public and ensure safety.

VI. Regulatory Agency Notification Plan

DNR personnel are included on two (2) e-mail distribution lists:

- US VW MKE Gates
- US VNA MKE Municipal All

These distribution lists are maintained by the VWM Project Manager under direction of the MMSD Contract Compliance Office. The email distribution lists are updated at least annually to ensure notifications are received in a timely manner by the appropriate parties.

VII. Maintenance of SORP

This SORP will be reviewed on an annual basis. Updates will be made, at a minimum, when there are changes in procedures, changes in contact personnel or changes in the regulatory requirements.

VIII. References

- CCS SOP 005 – Overflow Notifications
- Conveyance SOP 1-3114 – Cleaning and Clearing Blockages in Sewers

ATTACHMENT A

E-mail Notification Distribution Lists

(1) MKE CCS False Alarm Group
MKE CCS Operators (Veolia) [1]
MMSDFalseBypasses@mmsd.com (MMSD) [2]

Note:
[1] *Members in the MKE CCS Operators distribution list are:*

- *Ken Moore (Veolia)*
- *Mike Kehoe (Veolia)*
- *Patrick Kober (Veolia)*
- *Mark Teske (Veolia)*
- *Andy Walloch (Veolia)*

[2] *The MMSDFalseBypasses@mmsd.com distribution list is managed by Joe Leszcynski at MMSD.*

(2) MKE CCS Alarm Group
MKE CCS Operators (Veolia)
mmsdccsalarm@mmsd.com (MMSD)[1]
Scott Royer (Veolia)
Choo Teoh (Veolia)
Michael DuPont (Veolia)
Mike Wojtanowski (Veolia)
Anthony Jackson (Veolia)
Jeff Pietryga (Veolia)
Jena Lynch (Veolia)
Deb Plears (Veolia)

[1] *The mmsdccsalarm@mmsd.com distribution list is managed by Joe Leszcynski at MMSD.*

(3) MKE Gate Members

MKE CCS Alarm Group

MKE Shift Supervisors [3]

Bryan Hartsook (*WDNR*)	bryan.hartsook@wisconsin.gov
Geisa Thielen (WDNR)	geisa.thielen@wisconsin.gov
Xiaochun Zhang (*WDNR*)	xiaochun.zhang@wisconsin.gov
Frank Miller (*Cudahy Water Utility*)	millerf@cudahy.wi.us
Eric Klefer (*North Shore Water*)	eklefer@northshorewc.com
Mike Sullivan (*Oak Creek Water Works*)	msullivan@water.oak-creek.wi.us
Doug Fischer (*So. Milw Water Works*)	fisherd@ci.south-milwaukee.wi.us
Dr. Sandra McLellan (*UWM*)	mclellan@uwm.edu
Deb Dila (*UWM*)	dila@uwm.edu
Milwaukee Water Works	watoverflow@milwaukee.gov
Milwaukee Health Department	health_watoverflow@milwaukee.gov
Lindsey Page (Milw Health Dept)	lpage@milwaukee.gov
Matthew Scallon (Milw Health Dept)	mscall@milwaukee.gov

Note:

[3] ***Members in the MKE Shift Supervisors distribution list are:***

- ***Benjamin Mielke (Veolia)***
- ***Brandon Collins (Veolia)***
- ***Brett Kelly (Veolia)***
- ***Charles Hoskins (Veolia)***
- ***Dion Doege (Veolia)***
- ***Francesco Ramos***
- ***Jacob Holbert (Veolia)***
- ***John Szyszkiewicz (Veolia)***
- ***Khristopher Radke (Veolia)***
- ***Leo Prusi (Veolia)***
- ***Samuel Lieven (Veolia)***
- ***Scott McInnes (Veolia)***
- ***Todd Schwingle (Veolia)***

(4) MKE Municipal Members

MKE Gate Members

Community	Contact Name	Email
Bayside	Andy Pederson	apederson@bayside wi.gov
Bayside	Jake Meshke	jmeshke@bayside wi.gov
Bayside	Lynn Galyardt	lgalyardt@bayside wi.gov
Brookfield	Tom Grisa	grisa@ci.brookfield.wi.us
Brookfield	Tom Grisa	tgrisa@wi.rr.com
Brookfield	Jeff Chase	chase@ci.brookfield.wi.us
Brookfield	Dan Erickson	erickson@ci.brookfield.wi.us
Brookfield	Kris Gauger	gauger@ci.brookfield.wi.us
Brookfield	Steve Ponto	ponto@ci.brookfield.wi.us
Brookfield	Rick Wenzel	wenzelr@ci.brookfield.wi.us
Brown Deer	Matthew Maederer	mmaederer@browndeerwi.org
Brown Deer	Michael Hall	manager@browndeerwi.org
Brown Deer	Michael Kass	mkass@bdpolice.org
Butler	Kayla Chadwick	kchadwick@butlerwi.gov
Caledonia	Bob Lui	blui@caledoniawiutility.com
Cudahy	Mary Jo Langa	langam@ci.cudahy.wi.us
Cudahy	Scott Rewolinski	rewolinskis@ci.cudahy.wi.us
Cudahy	Tim Birkel	birkelt@ci.cudahy.wi.us
Elm Grove	Richard Paul, Jr.	rpaulir@elmgrovewi.org
Elm Grove	David DeAngelis	ddeangelis@elmgrovewi.org
Fox Point	Scott Brandmeier	sbrandmeier@vil.fox-point.wi.us
Fox Point	Bill Wojtanowski	bwojtanowski@vil.fox-point.wi.us
Fox Point	Mike Krueger	mkrueger@vil.fox-point.wi.us
Franklin	Mike Roberts	mroberts@franklinwi.gov
Germantown	Timothy Zimmerman	gtsewer@blrwi.rr.com
Glendale	Dave Eastman	d.eastman@glendale-wi.gov
Greendale	Todd Michaels	tmichaels@greendale.org
Greenfield	Jeff Katz	jeffrey.katz@greenfieldwi.us
Greenfield	Greenfield Police	dispatch@gfpd.org
Greenfield	Mike Neitzke	mike.neitzke@greenfieldwi.us
Greenfield	John Laskoski	john.laskoski@greenfieldwi.us
Hales Corners	Mike Martin	mimartin@halescorners.org
Hales Corners	Jim Hughes	yhcdpw@halescorners.org
Menomonee Falls	Jeff Nettesheim	jnettesheim@menomonee-falls.org
Menomonee Falls	Jeff Nettesheim	jsnett1425@sbcglobal.net
Menomonee Falls	Tom Dimoff	tdimoff@menomonee-falls.org
Menomonee Falls	Randy Hager	rhager@menomonee-falls.org
Mequon	Kristen Lundeen	klundeen@ci.mequon.wi.us
Mequon	Wayne Bernhardt	wbernhardt@ci.mequon.wi.us
Milwaukee	Ghassan Korban	ghassan.korban@milwaukee.gov
Milwaukee	Jeffery Polenske	jeffery.polenske@milwaukee.gov
Milwaukee	Anthony Stewart	anthony.stewart@milwaukee.gov
Milwaukee	Corey Tipton	corey.tipton@milwaukee.gov

Community	Contact Name	Email
Milwaukee	David Gonzales	dgonz@milwaukee.gov
Milwaukee	Tim Thur	timothy.thur@milwaukee.gov
Milwaukee	Carol Rindt	Carol.Rindt@milwaukee.gov
Milwaukee	Robert Brooks	robert.brooks@milwaukee.gov
Milwaukee	Nader Jaber	nader.jaber@milwaukee.gov
Milwaukee	Kurt Sprangers	ksprang@milwaukee.gov
Milwaukee	Jason Sanders	jason.sanders@milwaukee.gov
Milwaukee County	Mark Sifuentes	Mark.Sifuentes@milwaukeecountywi.gov
Muskego	Scott Kroeger	skroeger@cityofmuskego.org
Muskego	Scott Kloskowski	skloskowski@cityofmuskego.org
Muskego	George Mayer	gmayer@cityofmuskego.org
New Berlin	Dave Ament	dament@newberlin.org
New Berlin	Jim Hart	jhart@newberlin.org
New Berlin	Tamara Simonson	tsimonson@newberlin.org
New Berlin	Melody Styba	mstyba@newberlin.org
New Berlin	Mark Blum	mblum@newberlin.org
New Berlin	Tom Bauer	tbauer@newberlin.org
Oak Creek	Mike Sullivan	msullivan@water.oak-creek.wi.us
River Hills	Kurt Fredrickson	kfredrickson@vil.river-hills.wi.us
Shorewood	Leeann Butschlick	lbutschlick@villageofshorewood.org
Shorewood	Joel Koiste	jkoiste@villageofshorewood.org
Shorewood	Dave Kunze	dkunze@villageofshorewood.org
St Francis	Melinda Dejewski	melindad@stfrancwi.org
Thiensville	Andy LaFond	Alafond@village.thiensville.wi.us
Thiensville	Dianne Robertson	drobertson@village.thiensville.wi.us
Wauwatosa	Bill Wehrley	wwehrley@wauwatosa.net
Wauwatosa	Bill Wehrley	wwehrley@wi.rr.com
Wauwatosa	Dave Simpson	dsimpson@wauwatosa.net
Wauwatosa	Jim Archambo	jarchambo@wauwatosa.net
Wauwatosa	Kevin Hurst	khurst@wauwatosa.net
Wauwatosa	Mike Maki	mmaki@wauwatosa.net
Wauwatosa	Mike Steiner	msteiner@wauwatosa.net
West Allis	Robert Hutter	rhutter@westalliswi.gov
West Allis	Dave Wepking	dwepking@westalliswi.gov
West Allis	Peter Daniels	pdaniels@westalliswi.gov
West Allis	Tim Last	tlast@westalliswi.gov
West Milwaukee	Jim Stenzel	James.stenzel@westmilwaukee.org
West Milwaukee	Ian Roecker	Ian.roecker@rasmithnational.com
Whitefish Bay	John Edlebeck	j.edlebeck@wfbvillage.org
Whitefish Bay	Kevin Kaegi	k.kaegi@wfbvillage.org
Whitefish Bay	Mark Passante	m.passante@wfbvillage.org
Whitefish Bay	Pat McCarthy	p.mccarthy@wfbvillage.org
Whitefish Bay	Spencer Charczuk	s.charczuk@wfbvillage.org
Whitefish Bay	Paul Gorecki	p.gorecki@wfbvillage.org

Note: Updates to this list are provided by Micki Klappa-Sullivan at MMSD

ATTACHMENT B

MMSD Service Area - Municipal DPW Contact List

Municipality	Contact	Business Hours	After hours / weekends
Bayside	Jake Meshke	414-206-3915	414-351-9900
Brookfield	Ron Gillenardo	262-796-6644	262-782-0199
Brown Deer	Matthew Maederer	414-357-0120	414-371-2900/PD
Butler	Kayla Chadwick	262-783-2525	414-783-2525
Caledonia	Bob Lui	262-681-3900	262-939-3409
Cudahy	Mary Jo Lange	414-769-2216	414-769-2260/PD
Elm Grove	Richard Paul, Jr.	262-782-6700	262-786-4141/PD
Fox Point	Scott Brandmeier	414-351-8900	414-351-9900/PD
Franklin	Glen Morrow	414-421-7510	414-425-2522/PD
Germantown	Larry Ratayczak	262-250-4721	262-253-7780/PD
Glendale	Dave Eastman	414-228-1710	414-228-1753/PD
Greendale	Mark Uecker	414-423-2133	414-423-2121/PD
Greenfield	Lynn Jacob	414-761-5374	414-761-5301/PD
Hales Corners	Michael Martin	414-529-6140	414-529-6140/PD
Menomonee Falls	Randy Haeger	262-532-4800	262-532-1700/PD
Mequon	Kristen Lundeen	262-236-2913	262-242-3500/PD
Milwaukee	Robert Brooks	414-286-2489	414-286-2489
Muskego	Scott Kloskowski	262-679-4128	262-679-4130/PD
New Berlin	Nicole Hewitt	262-786-7086	262-446-5070
Oak Creek	Doug Schwartz	414-768-7060	414-768-7060
River Hills	Kurt Fredrickson	414-352-0080	414-247-2300/PD
Shorewood	Leann Butschlick	414-847-2650	414-847-2610/PD
South Milwaukee *	Doug Fischer	414-768-8180	414-768-8180
St. Francis	Melinda Dejewski	414-481-2300	414-481-2232/PD
Thiensville	Andy LaFond	262-242-3720	262-242-2100/PD
Wauwatosa	Bill Wehrley	414-471-8422	414-471-8422
West Allis	Robert Hutter	414-302-8360	414-302-8000/PD
West Milwaukee	James Stenzel	414-645-6238	414-645-2151/PD
Whitefish Bay	John Edlebeck	414-962-6690	414-962-6690/PD

* *South Milwaukee is not part of the MMSD system.*

Note: Updates to this list are provided by Micki Klappa-Sullivan at MMSD

VEOLIA WATER

ATTACHMENT C

Emergency Contractor Call-Out List

Service	Contractor(s)	Contact	Cell Number	Telephone Number
Access and repairs to tunnel sites and deep vaults	J. F. Ahern	Michael Venne	920-960-0868	920-921-9020
Repair of Piping and Valves	Grunau	On-Call Supervisor	N/A	414 216-6900
High Voltage Repair	High Voltage Maintenance (HVM)	Dave Van de Casteele	414-418-1223	262-784-3660
Emergency Electrical Response	Pieper Electric	Randy Grinka	414-788-0875	414-462-7700
Cranes and Heavy Equipment	Ideal	Dan Kueht	414-588-6672	414-463-5438
Small Pipe Collapse	D.F. Tomasini	Dave Konen Bill Tetting	414-581-1561 414-581-0358	262 820-8300
Large Pipe Collapse	Super Excavators	On-Call Supervisor	N/A	262 252-3200
Radio Communication Failure	Vyex	Dave Karr		262 513-0150
Hazardous Material Response	Veolia Environmental Services	On Call Supervisor	N/A	800-688-4005
Repair of monitoring and control sites	Pieper Electric, Inc.	Randy Grinka	414-788-0875	414-462-7700
Emergency pumping	Lincoln Contractors	Dan Gust	414-807-8936	414-541-1328
Pipe Cleaning and CCTV	Visu-Sewer, Inc.	Keith Alexander	414-491-4594	262-695-2340
Pavement & Fence Repairs	Munson, Inc.	Rob Featherston	414-788-1803	414-351-0800

Appendix 2

Issued by:	**VWM**	**SOP No:**	**CCS Operations SOP - 005**
Approval:	**Michael DuPont, PE Conveyance System Manager**	**Revision No:**	**13.0**
		Effective Date:	**December 1, 2017**

SUBJECT: Overflow Notification

1.0 SCOPE

This SOP shall apply to the Central Control System (CCS) personnel and Veolia management when reporting false, possible or confirmed overflows.

2.0 PURPOSE

To provide additional details to the standard CCS notification and documentation requirements associated with any sanitary sewer overflows (SSO's) or combined sewer overflows (CSO's) in the MMSD Collection and Conveyance System. The SOP also describes the notification and documentation requirements for potential Inline Storage System (ISS) tunnel gate closings that may occur during certain rain events

3.0 RESPONSIBILITIES

CCS operators shall document all overflow notifications that are reported to the CCS operation. These include verbal notifications and overflows indicated by the Conveyance SCADA Overflow Tag List system. The results of "Possible Overflow" investigations must be documented. Finally, any ISS tunnel gate closings, which occur during rain events, must also be documented. Each of the above-listed items have specific documentation requirements and methods for disseminating the information both verbally and by e-mail.

> ***Caution:*** *These notifications can affect public health and safety and must be done in a prompt, precise and professional manner.*

4.0 REFERENCES AND FORMS

- Overflow TAG List
- CCS Overflows template located on the Share (S:) drive

5.0 TRIGGERS

5.1 Indication of an Overflow

The trigger for these procedures is when the Console Operator is notified of a Possible Overflow event. This notification may come from:

(1) a report (most likely a call) from the Veolia Conveyance Manager, Assistant Manager, On Duty Field Supervisor, MMSD management or monitoring personnel, general public, or visual observation of a MMSD/Veolia/ Municipal field crew; or

(2) the Conveyance SCADA system indicates a Possible Overflow with an alarm from one of the tags in the "Overflow TAG List" (these alarms will also be displayed on the "Bypass Structures" global display).

A Trigger
A Possible Overflow is identified and MMSD or VWM personnel who are already at the site confirm that they triggered this False Overflow alarm.

B Triggers
A Possible Overflow is identified and further investigation is warranted.

Or

A Possible Overflow is Confirmed to have actually occurred and MMSD and/or VWM management personnel direct that a notification of this event be sent out.

5.2 ISS Gate Closures

The trigger for these procedures is when, during a rain event, one or more ISS inflow sites has all tunnel gates automatically or manually fixed in the closed position, cutting off normal flows to the ISS.

6.0 PROCEDURES

6.1 False Overflow Alarm

Trigger – A Possible Overflow is identified; and MMSD or VWM personnel who are already at the site confirm that they triggered this **False Overflow alarm**.

1. Complete the CCS Overflows form using the most recent template stored on the shared drive under S:\Operations ALL RO\CCS Overflows*current year*.
   a. Enter pertinent information in the Comments - Name, Date, & Time sections.
   b. Check the False Alarm box.
   c. On the left side of the form, check the applicable facility box(es) where Possible Overflows have been detected. Note: If a facility is not listed, check the Other (Describe) box and enter a brief description of the facility and/or location.

2. Save the document on the shared drive, under Operations ALL RO\CCS Overflows*current year*, using the current date in the document name. For example *CCS Overflows 09-30-14.docx.*

3. E-mail the completed CCS Overflows document to the "US VNA MKE False Alarm" group. Indicate in the subject line of the e-mail this is a FALSE ALARM.

6.2 Possible or Confirmed Overflows

Trigger – A Possible Overflow is identified; and further investigation is warranted.

> ***Note #1** – If the Operator (using SCADA Alarm/Event information and Historical data) can determine that no overflow has occurred, then the supervisor notifications in step 1 below should be skipped.*
>
> ***Note #2** – If the Possible Overflow* is **"confirmed"** to have occurred, **skip to 5. c.** on the next page.

1. Notify the On-call MMSD Monitoring Supervisor and the On-call Veolia Field Supervisor of the event (Conveyance Manager is back-up). This notification must be in person or by phone (voicemail, e-mail, & text messages are not satisfactory because there is not a way to ensure that the intended recipient received the notification in a timely manner).

2. Complete the CCS Overflows form using the most recent template stored on the shared drive under S:\Operations ALL RO\CCS Overflows*current year.*
   Note – Use only one form per rain event for all Possible or Confirmed Overflows.
   a. Enter pertinent information in the Comments - Name, Date, & Time sections.
   b. Check the Possible Overflow box.
   c. On the left side of the form, check the applicable facility box(es) where Possible Overflows have been detected. Note: If a facility is not listed, check the Other (Describe) box and enter a brief description of the facility and/or location.

3. Save the document on the shared drive, under Operations ALL RO\CCS Overflows*current year*, using the current date in the document name. For example *CCS Overflows 09-30-14.docx.*

4. E-mail the completed CCS Overflows document to the "MKE CCS Alarm" group.

5. Each time additional information becomes available, the Comments section of the form must be updated with new "Name, Date, & Time", plus any pertinent comments:

   a. If **additional Possible Overflows** are identified:
      i. On the left side of the form, check the additional facility box(es) where new Possible Overflows have been detected. Note: If a facility is not listed, check the Other (Describe) box and enter a brief description of the facility and/or location.

ii. Save the document on the shared drive, under Operations ALL RO\CCS Overflows*current year*, using the current date in the document name and the word "UPDATE#" added to the file name, for example *CCS Overflows 09-30-14 UPDATE1.docx*.

iii. Email the updated form to the "MKE CCS Alarm" group.

b. If, after an investigation, a Possible Overflow indication proves to be an **incorrect report or an erroneous alarm**:

i. In the Comments section, identify which overflow(s) has/have been ruled out.

ii. Save the document on the shared drive, under Operations ALL RO\CCS Overflows*current year*, using the current date in the document name and the word "UPDATE#" added to the file name, for example *CCS Overflows 09-30-14 UPDATE2.docx*.

iii. Email the updated form to the "MKE CCS Alarm" group.

c. If, after an investigation, a Possible **Overflow is Confirmed** by MMSD or Veolia Water Milwaukee management personnel to have occurred:

i. Notify the VWM Conveyance Manager (On-Call Field Supervisor as backup) that an overflow has been confirmed. This notification must be in person or by phone (voicemail, e-mail, & text messages are not satisfactory because there is not a way to ensure that the intended recipient received the notification in a timely manner).

Note: Only continue with the rest of this procedure if MMSD or Veolia Water Milwaukee management personnel direct that a notification of this event must be sent out.

ii. Check the Confirmed Overflow box.

iii. Update the Comments section with new "Name, Date, & Time".

iv. On the right side of the form, check the applicable facility boxes, where the overflow(s) has/have been confirmed. Note: If a facility is not listed, check the Other (Describe) box and enter a brief description of the facility and/or location.

v. Save the document on the shared drive, under Operations ALL RO\CCS Overflows*current year*, using the current date and the word "Confirmed" added to the file name, for example *Confirmed CCS Overflow 10-01-14.docx*.

vi. Email the updated form to the "US MKE Gates" group.

6.3 ISS Tunnel Gate Closing (Junction Chambers)

Triggers

(a) During a rain event; the system goes into SS ONLY or FULL mode and the Combined Sewer **Junction Chamber gates close** (or these gates are manually closed); or

(b) Bypass sites are activated during a rain event and corresponding Combined Sewer ISS **gate(s) at DC0402(BS0405), DC0504(BS0502), DC0502(BS0501), DC0503(BS0501), or DC0103, automatically or manually close**; or

(c) ISS Sanitary Sewer site inflow gate(s) at NS01(DC0405), NS03, or NS12 automatically or manually close during a rain event.

1. Notify the VWM Conveyance Manager (On-Call Field Supervisor as backup) that certain ISS tunnel gates are closed. This notification must be in person or by phone (voicemail, e-mail, & text messages are not satisfactory because there is not a way to ensure that the intended recipient received the notification in a timely manner).
2. Record the time and details of this event in the Console Operator Log.

   Note: Only continue with the rest of this procedure if MMSD or VWM management personnel direct that a notification of this event must be sent out.
3. Complete the CCS Overflows form using the most recent template stored on the shared drive under S:\Operations ALL RO\CCS Overflows*current year*. Save the document on the shared drive, under Operations ALL RO\CCS Overflows*current year*, using the current date and the word "Confirmed" added to the file name, for example *Confirmed CCS Overflow 09-30-14.docx*.

   Note – Use only one form per rain event for all ISS tunnel gate closures.

   a. Enter pertinent information in the Comments - Name, Date, & Time sections.

   b. Check the appropriate box(es); record the date & time when the gate(s) started closing; and e-mail the form as indicated below:

      - **Junction Chamber** gate closures (SS ONLY Mode) –
        - ✓ check the Combined Sewer Gates Closure box
        - ✓ Record Date and Time when the gate(s) started closing in Comments section
        - ✓ If any of the Junction Chamber gates are manually held open, use the Comments section to identify these exceptions
        - ✓ E-mail the document to the "US VW MKE Gates" group
      - **DC0402, DC0504, DC0502, DC0503, or DC0103** tunnel gate closures –
        - ✓ Check the appropriate facility box(es)
        - ✓ E-mail the document to the "US VW MKE Gates" group
      - **NS01(DC0405), NS03, or NS12** tunnel gate closures –
        - ✓ Check the appropriate facility box(es)
        - ✓ E-mail the document to the "US VNA MKE Municipal All" group

7.0 TRAINING TO EMPLOYEES

This SOP and any revision shall be communicated in the following manner:

Employee Group Affected:	Communication Method
CCS Operators	E-mail correspondence, Hard copy updates

8.0 REVIEW AND APPROVAL

Reviewer / Title (list all reviewers)	Revision No.	Review Date
Mark Teske, CCS Operator (Lead)	12.0	07/21/2015
Choo B. Teoh, PE, Conveyance System Manager	12.0	07/21/2015
Choo B. Teoh, PE, Conveyance System Manager	12.0	02/17/2016
Michael DuPont, PE, Conveyance System Manager	13.0	11/16/2017

Approved by:	Michael DuPont, PE
Title:	Conveyance System Manager
Date:	November 16, 2017

9.0 CHANGE HISTORY

Revision Number	Summary of Changes	Issue Date	Effective Date
1	Initial Version		10/22/1999
2	Reviewed and updated procedures		11/09/2000
3	Reviewed and updated procedures		03/21/2001
4	Reviewed and updated procedures		04/04/2001
5	Reviewed and updated procedures		07/16/2002
5	Reviewed and updated procedures		04/10/2006
6	Reviewed and updated procedures		09/26/2006
7	Reviewed and updated procedures		07/01/2008
8	Reviewed and updated procedures		04/18/2011
9	Reviewed and updated procedures		09/04/2013
10	Reviewed and updated procedures	08/28/2014	09/19/2014
11	Reviewed and updated procedures; updated to new SOP format	03/02/2015	
12	Reviewed and updated procedures; included new distribution lists	07/21/2015	07/21/2015
13	Reviewed and updated procedures, updated email names	11/16/2017	12/01/2017

TRAINING AND ACKNOWLEDGEMENT

By signing below, employees acknowledge receipt and understanding of this Standard Operating Procedure

Procedure Name:_____

Revision No._____

Effective Date:_____

NAME (Print)	NAME (Signature)	DATE

Overflow Tags From HMI/SCADA System

Tag ID	Description
M_DC_BS0101_BYPASS	BS0101 OVERFLOW EVENT
M_DC_BS0302_BYPASS	BS0302 OVERFLOW EVENT TO UNDERWOOD CREEK
M_DC_BS0303_BYPASS	BS0303 OVERFLOW EVENT TO HONEY CREEK
M_DC_BS0304_BYPASS	MS0357 (BS0304) OVERFLOW EVENT
M_DC_BS0401_BYPASS	BS0401 OVERFLOW EVENT TO HONEY CREEK
M_DC_BS0405_BYPASS	BS0405 OVERFLOW EVENT TO MENOMONEE RIVER
M_DC_BS0501_BYPASS	BS0501 OVERFLOW EVENT TO MILW RIVER
M_DC_BS0502_BYPASS	BS0502 OVERFLOW EVENT TO LINCOLN CREEK
M_DC_BS0503_BYPASS	BS0503 OVERFLOW EVENT TO LINCOLN CREEK
M_DC_BS0505_BYPASS	BS0505 OVERFLOW EVENT TO LINCOLN CREEK
M_DC_BS0506_BYPASS	BS0506 OVERFLOW EVENT TO MILW RIVER
M_DC_BS0507_BYPASS	BS0507 OVERFLOW EVENT TO MENOMONEE RIVER
M_DC_BS0601_BYPASS	BS0601 OVERFLOW EVENT TO KK RIVER
M_DC_BS0602_BYPASS	BS0602 OVERFLOW EVENT TO LAKE MICHIGAN
M_DC_BS0701_BYPASS	BS0701 OVERFLOW EVENT TO MILW RIVER
M_DC_BS0801_BYPASS	BS0801 OVERFLOW EVENT
M_DC_CT02_BYPASS	CT02 (DG0803) OVERFLOW EVENT MENOMONEE
M_DC_CT0304_BYPASS	CT07 OVERFLOW EVENT TO MENOMONEE RIVER
M_DC_CT0506_BYPASS	CT08 OVERFLOW EVENT TO MENOMONEE RIVER
M_DC_CT07_BYPASS	CT0304 OVERFLOW EVENT TO MENOMONEE RIVER
M_DC_CT08_BYPASS	CT0506 OVERFLOW EVENT TO MENOMONEE RIVER
M_DC_DC0103_BYPASS	DC0103 OVERFLOW EVENT KK RIVER
M_DC_KK01_BYPASS	KK01 OVERFLOW EVENT TO KK RIVER
M_DC_KK02_BYPASS	KK02 OVERFLOW EVENT TO KK RIVER
M_DC_KK03_BYPASS	KK03 OVERFLOW EVENT TO KK RIVER
M_DC_KK04_BYPASS	KK04 OVERFLOW EVENT TO KK RIVER
M_DC_LMN_BYPASS	LMN OVERFLOW EVENT TO KK RIVER
M_DC_LMS_BYPASS	LMS OVERFLOW EVENT TO LAKE MICHIGAN
M_DC_MS0409_BYPASS	MS0409 OVERFLOW EVENT TO FISH CREEK
M_DC_MS0460_BYPASS	MS0460 OVERFLOW EVENT (BS0403)
M_DC_MS0545_BYPASS	MS0545 OVERFLOW EVENT (BS0513)
M_DC_NS03_BYPASS	NS03 OVERFLOW EVENT TO MILW RIVER
M_DC_NS04_BYPASS	NS04 OVERFLOW EVENT TO MILW RIVER
M_DC_NS05_BYPASS	NS05 OVERFLOW EVENT TO MILW RIVER
M_DC_NS06_BYPASS	NS06 OVERFLOW EVENT TO MILW RIVER
M_DC_NS07_BYPASS	NS07 OVERFLOW EVENT TO MILW RIVER
M_DC_NS08_BYPASS	NS08 OVERFLOW TO MILW RIVER
M_DC_NS09_BYPASS	NS09 OVERFLOW EVENT TO MILW RIVER
M_DC_NS10_BYPASS	NS10 OVERFLOW EVENT TO MILW RIVER
M_DC_NS11_BYPASS	NS11 OVERFLOW EVENT TO MILW RIVER
M_DC_NS12_BYPASS	NS12 OVERFLOW EVENT TO MILW RIVER
M_DC_PS0402_BYPASS	PS0402 OVEFLOW EVENT
M_DC_PS0502_BYPASS	PS0502 OVERFLOW EVENT

VEOLIA WATER

CCS Overflows

Comments:			
NAME: Name	DATE/TIME date/time	enter text	
Name	date/time	enter text	

☐ **False Alarm**
EMAIL TO: MKE False Alarm

☐ **Possible Overflow**
EMAIL TO: MKE CCS Alarm

Confirmed Overflow ☐
EMAIL TO: MKE Gates

☐	BS0101	Howell & Grange	☐
☐	BS0302	108th & Fischer	☐
☐	BS0303	74th & Oklahoma	☐
☐	BS0304	State Fair & Dickinson	☐
☐	BS0401	Honey Creek & Wisconsin	☐
☐	BS0403	Honey Creek & Portland	☐
☐	BS0503	35th & Roosevelt	☐
☐	BS0505	27th & Villard	☐
☐	BS0506	Range Line & Milwaukee River	☐
☐	BS0507	46th & State	☐
☐	BS0515 & BS0516	Congress / River / Estabrook	☐
☐	BS0601	35th & Manitoba	☐
☐	BS0602	KK & St. Francis	☐
☐	BS0701	Bruce & Water (CSO)	☐
☐	DS145A	28th & Nash (CSO)	☐
☐	MS0409	9523 N. Broadmoor	☐
☐	MS0545	Lydell & Montclaire	☐
☐	PS0402	Lake Drive & Ravine PS	☐
☐	PS0502 (BS0404)	Green Tree Road PS	☐
☐	Other (Describe)		☐

☐ **Combined Sewer Gates Closure**
E-MAIL TO: MKE Gates

☐ BS0405/DC0402 56th & State (CSO)	Date & Time: Click here to enter a date.
☐ BS0502 32nd & Hampton / DC0504 31ST & Hampton (CSO)	Date & Time: Click here to enter a date.
☐ BS0501 Richards & Congress / DC0502 Humboldt & Capitol / DC0503 Port Washington & Congress (CSO)	Date & Time: Click here to enter a date.
☐ DC0103 6th & Oklahoma (CSO)	Date & Time: Click here to enter a date.

☐ **Sanitary Sewer Gates Closure**
E-MAIL TO: MKE Municipal

☐ NS01 (DC0405) 51st & Hampton	Date & Time: Click here to enter a date.
☐ NS03 4400 N. Port Washington (River Woods Parkway)	Date & Time: Click here to enter a date.
☐ NS12 31st & Capitol	Date & Time: Click here to enter a date.