Combined Sewer Overflow Public Notification Plan

PREPARED FOR

Buffalo Sewer Authority
CSO Reporting Tool Updates and Public Notification
SPDES No. 0028410
January 2024

AT

Buffalo, New York

PREPARED FOR

Xylem Vue, Inc.
121 S. Niles Avenue, Suite 22
South Bend, IN 46617

FOR SUBMISSION TO

Buffalo Sewer Authority
65 Niagara Square, #1038
Buffalo, NY 14202

Submitted by:

Watts Architects &Engineers

BUFFALO / ROCHESTER / SYRACUSE / NEW YORK

watts-ae.com

ARCADIS

Table of Contents

1.0 / Executive Summary

The Buffalo Sewer Authority (BSA) has developed this public notification plan (PNP) for combined sewer overflows (CSOs) for outfalls that are located along the Niagara and Buffalo Rivers, Black Rock Canal, Scajaquada and Cazenovia Creeks, Erie Basin Marina, and The Buffalo Harbor In accordance with SPDES No. 0028410 issued by the New York State Department of Environmental Conservation and 40 CFR Part 122.38(c). A CSO is a discharge from a combined sewer system (CSS) that may be released during wet weather, at a point prior to the water being treated at the BSA Bird Island Wastewater Treatment Plant (WWTP). The PNP describes how BSA will provide notification to the public of CSO occurrences from the BSA CSS.

BSA's SPDES permit stipulates that BSA optimize the collection system by operating and maintaining it to minimize the discharge of pollutants from the CSOs within the conveyance and treatment system. The intent of this CSO best management practices (BMP) is to maximize in-system and flow conveyed to the WWTP without causing service backups or street flooding while minimizing CSO discharges.

2.0 / Objective of the Plan

This plan was developed to comply with the requirements of the State Pollutant Discharge Elimination System (SPDES) Permit 0028410 issued by the New York State Department of Environmental Conservation (NYSDEC) to the Buffalo Sewer Authority for the operation of Buffalo Sewer Authority's Combined Sewer Overflow (CSO) Structures. The foremost goal of this plan is to inform the public of combined sewer overflow events and to provide the public with information on CSOs.

3.0 / Signage

There are fifty-two (52) CSOs in the City of Buffalo, as shown on the Table 3.1. All CSOs have signage as required by 40 CFR Section 122.38. An illustration of a typical sign is provided in Appendix A. The CSO signs are inspected approximately annually and are maintained or replaced as needed. A figure showing the locations of all CSO location are shown in Appendix B.

Table 3.1 Combined Sewer Overflow Outfalls

Outfall	Location	Latitude	Longitude	Receiving Water
003	Austin Street	42° 56'14" N	78° 54' 26" W	Black Rock Canal
004	Bird Avenue	42° 55' 34" N	78° 53' 57" W	Black Rock Canal
005	Potomac Avenue	42° 55' 27" N	78° 53' 27" W	Black Rock Canal
006	W. Delavan Ave	42° 55' 20" N	78° 53' 29" W	Black Rock Canal
007	W. Delavan Ave	42° 55' 20" N	78° 55' 20" W	Black Rock Canal
008	Brace Street	42° 55' 15" N	78° 54' 00" W	Black Rock Canal
009	Auburn Street	42° 55' 08" N	78° 54' 03" W	Black Rock Canal
010	Breckenridge St	42° 55' 02" N	78° 54' 05" W	Black Rock Canal
011	Albany St to W. Wall- Bird Island	42° 54' 49" N	78° 54' 12" W	Niagara River
012	Albany Street	42° 54' 48" N	78° 54' 07" W	Black Rock Canal
013	Virginia Street	42° 53' 20" N	78° 53' 37" W	Buffalo Harbor
014*	Fourth Street	42° 53' 01" N	78° 53' 12" W	Erie Basin Slip #3
015*	Genesee Street	42° 52' 58" N	78° 53' 07" W	Erie Basin Slip
016*	Erie Street	42° 52' 55" N	78° 52' 57" W	Erie Basin

017	Hamburg Drain-Main Street	42° 52’ 38” N	78° 52’ 47” W	Buffalo River
022	Baltimore Street	42° 52’ 23” N	78° 52’ 29” W	Buffalo River
023	Ohio Street	42° 52’ 01” N	78° 52’ 05” W	Buffalo River
025	Hamburg Street	42° 51’ 51” N	78° 51’ 37” W	Buffalo River
026	Smith Street	42° 51’ 49” N	78° 51’ 03” W	Buffalo River
027	Babcock Street	42° 51’ 48” N	78° 50’ 16” W	Buffalo River
028	Boone Street	42° 51’ 38” N	78° 49’ 56” W	Buffalo River
029	Boone Street	42° 51’ 38” N	78° 49’ 56” W	Buffalo River
031	Kimmel Avenue	42° 21’ 37” N	78° 49’ 29” W	Cazenovia Creek
032	W. of Bailey Ave	42° 51’ 43” N	78° 49’ 35” W	Buffalo River
033	Bailey Ave	42° 51’ 38” N	78° 49’ 33” W	Buffalo River
035	Cazenovia Park	42° 51’ 02” N	78° 48’ 31” W	Cazenovia Creek
037	Salem Street	42° 51’ 09” N	78° 48’ 41” W	Cazenovia Creek
038	Kingston Place	42° 51’ 10” N	78° 48’ 40” W	Cazenovia Creek
039	Tamarack Street	42° 51’ 13” N	78° 48’ 46” W	Cazenovia Creek
040	Yale Place	42° 51’ 15” N	78° 48’ 46” W	Cazenovia Creek
042	S. Ryan Street	42° 51’ 19” N	78° 48’ 51” W	Cazenovia Creek
044	Mumford Street	42° 51’ 27” N	78° 49’ 06” W	Cazenovia Creek
046	Unger Avenue	42° 51’ 32” N	78° 49’ 13” W	Cazenovia Creek
047	Southside Pkwy.	42° 51’ 35” N	78° 49’ 22” W	Cazenovia Creek
048	E. of Bailey Ave	42° 51’ 38” N	78° 49’ 29” W	Cazenovia Creek
049	W. of Bailey Ave	42° 51’ 42” N	78° 49’ 36” W	Buffalo River
050	Seneca Street	42° 51’ 20” N	78° 49’ 16” W	Buffalo River
051	Hillery Park	42° 51’ 43” N	78° 48’ 38” W	Buffalo River
052	S. Ogden Street	42° 51’ 54” N	78° 48’ 08” W	Buffalo River
053	Main Street	42° 55’ 26” N	78° 51’ 26” W	Scajaquada Creek
054	Crowley Avenue	42° 57’ 07” N	78° 54’ 36” W	Niagara River
055	Niagara Street	42° 56’ 35” N	78° 54’ 35” W	Cornelius Creek, Niagara River
056	Nottingham Terrace	42° 56’ 06”	78° 52’ 39” W	Scajaquada Creek
057	Tonawanda Street	42° 55’ 43” N	78° 53’ 52” W	Scajaquada Creek
058	West Avenue	42° 55’ 49” N	78° 53’ 45” W	Scajaquada Creek
059	DeWitt Street	42° 55’ 51” N	78° 53’ 39” W	Scajaquada Creek
060	Elmwood Ave	42° 56’ 04” N	78° 52’ 42” W	Scajaquada Creek
061	Scajaquada Tunnel, Lafayette Avenue	42° 55’ 15” N	78° 54’ 01” W	Black Rock Canal
062	W. Ferry Street	42° 54’ 55” N	78° 54’ 07” W	Black Rock Canal
063	Front Park	42° 54’ 10” N	78° 54’ 07” W	Black Rock Canal
064	Ohio Drain, Ohio Street	42° 51’ 59” N	78° 52’ 06” W	Buffalo River
066	Sloan Drain, S. Ogden Street	42° 51’ 53” N	78° 49’ 21” W	Buffalo River

* Sensitive area identified in the Section 4.6 Buffalo Sewer Authority Final Long Term Control Plan, January 2014 as waters with threatened and/or endangered species and waters with primary contact recreation.

4.0 / Public Notification

4.1 Initial Notification via NY-Alert

Notifications of CSO events will be made in accordance with the Sewage Pollution Right to Know (SPRTK) Act. The 2013 SPRTK requires untreated and partially treated sewage discharges to be reported by publicly owned treatment works (POTWs) and publicly owned sewer systems (POSSs) within two (2) hours of discovery to DEC and within four (4) hours of discovery to the public and adjoining municipalities. The public is notified of discharges and potential discharges through NY-Alerts (alert.ny.gov) and the BSA website (buffalosewer.org). The Erie County Department of Health and affected entities will also be notified via email.

In cases where wet weather is considered extremely likely, notifications may be given that CSO discharges are likely to occur up to 8 hours in advance of a predicted storm. These events may occur when thunderstorms form in the spring and summer. Under the right conditions, notification may occur when the National Weather Service issues a thunderstorm warning for the Buffalo area.

Information in the notifications will include the following:

- Locations of the discharges and the water body that received the discharge.
- Start date and time the BSA became aware of the discharge.
- Whether the discharge is continuing or has ended. If the discharge has ended, the approximate time the discharge has ended.
- A point of contact for the BSA.

Notification of CSO discharges to NY-Alerts is a matter of compliance. Failure to make notifications as required would only occur under extreme circumstances such as communication and power failures. Should this occur, notification will be made as soon as possible after the extreme circumstance that caused the delay is cleared.

Supplemental notification will be given within seven (7) days after becoming aware that a discharge has ended. BSA shall update the electronic notice with the following information unless the information had been provided in an earlier notice.

- The estimated volume of the discharge.
- The approximate time the discharge has ended.
- An estimated cumulative discharge volume from the sewershed.

The following figure indicates steps that will be followed for public notification.

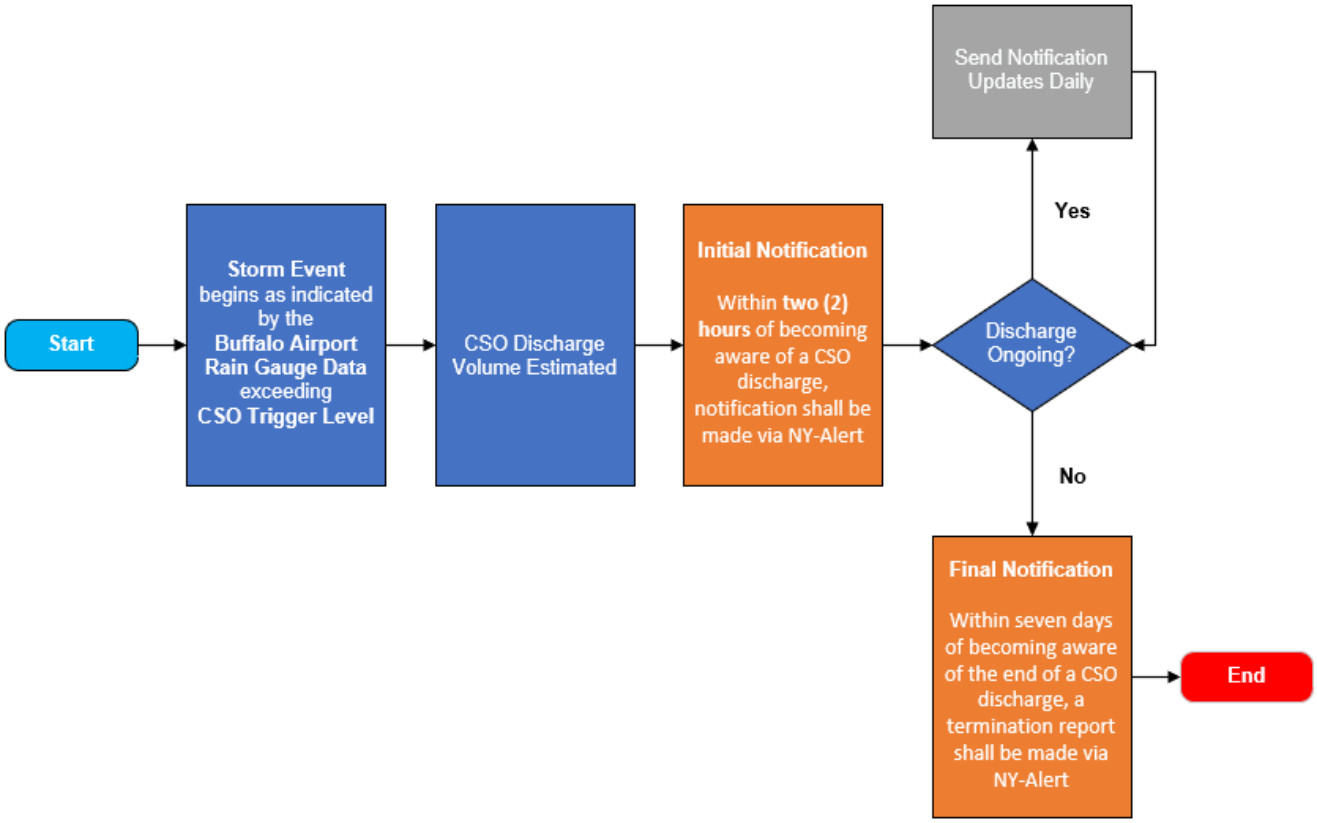

Figure 4.1 – Public Notification Procedures via NY-Alert.

Discharge volumes at the CSO locations will be estimated using rainfall data collected at the Buffalo Niagara International Airport. The discharge volume equation for each CSO is based on a regression analysis for CSO flow results from the BSA collection system model. The original EPA Stormwater Management Model (SWMM) of the BSA collection system dates to 1999. This model is updated periodically to include new features in the collection system and improve accuracy of the model results. The latest SWMM model was updated and approved by EPA in 2022. Airport rain data from 2017-2022 was used as an input for a simulation in the updated model. The output timeseries from this simulation was used in the CSO volume regression analysis.

As described above, there are 52 CSOs in the City of Buffalo discharging to six water bodies. Each CSO has an upstream sewershed that can convey stormwater and combined sewer overflows to the CSO outfall. The total CSO volumes in each receiving water are reported to NY-Alert, also known as Everbridge site, as having discharged from the CSO outfall with the lowest overflow trigger precipitation in that receiving water. The CSO outfall with the lowest trigger precipitation is referred to as the CSO.

The following table lists all CSOs included in each receiving water and the triggering CSO for that receiving water.

Table 4.1 CSOs including Receiving Water and Triggering CSO			
Outfall	Location	Triggering CSO	Receiving Water
003	Austin Street	CSO- 012	Black Rock Canal
004	Bird Avenue		
005	Potomac Avenue		
006	W. Delavan Ave		
007	W. Delavan Ave		
008	Bruce Street		
009	Auburn Street		
010	Breckenridge St		
012	Albany Street		
013	Virginia Street		
061	Scajaquada Tunnel, Lafayette Ave		
062	W. Ferry Street		
063	Front Park		
011	Albany St to W. Wall - Bird Island	CSO - 011	Niagara River
054	Crowley Avenue		
055	Niagara Street		
014	Fourth Street	CSO - 014	Erie Basin
015	Genesee Street		
016	Erie Street		
017	Hamburg Drain-Main Street	CSO - 028	Buffalo River
022	Baltimore Street		
023	Ohio Street		
025	Hamburg Street		
026	Smith Street		
027	Babcock Street		
028	Boone Street		
029	Boone Street		
032	W. of Bailey Ave		
033	Bailey Ave		
049	W. of Bailey Ave		
050	Seneca Street		
051	Hilery Park		

Outfall	Location	Triggering CSO	Receiving Water
052	S. Ogden Street		
064	Ohio Dran, Ohio Street		
066	Sloan Drain, S. Ogden Street		
031	Kimmel Avenue	CSO - 037	Cazenovia Creek
035	Cazenovia Park		
037	Salem Street		
038	Kingston Place		
039	Tamarack Street		
040	Yale Place		
042	S. Ryan Street		
044	Mumford Street		
046	Unger Avenue		
047	Southside Pkwy.		
048	E. of Bailey Ave		
053	Scajaquada Drain	CSO - 053	Scajaquada Creek
056	Nottingham Terrace		
057	Tonawanda		
058	West Avenue		
059	Dewitt Street		
060	Elmwood Ave		

Recent precipitation data is automatically brought into an internal Power BI dashboard to estimate overflow volumes in real time for BSA operators to report via the NY-Alert system. When the trigger precipitation level for the triggering CSO is met, the total estimated overflow volume for that receiving water is calculated. The results for all sewersheds containing overflows are displayed in a table for operators to report to NY-Alert.

Information reported to NY-Alert will include:

1. Discharge location
2. Location details
3. Waterbody affected
4. Discharge description
5. Potentially impacted public areas
6. Discharge date and time
7. Discharge duration if this information is available at the time of initial notification
8. Discharge reason
9. Steps taken to contain discharge
10. Volume/rate of discharge

11. Treated state of discharge

4.2 Notification Updates

For discharges that are ongoing, updates will be submitted for each day of the discharge.

4.3 Supplemental Notification via NY-Alert

Within seven days of the end of the CSO event, the electronic notification must be updated to reflect:

- The measured discharge amount of the discharge(s).
- The approximate time that the discharge ended.

This supplemental notification will constitute the termination report. The end of the overflow event will be determined by operators through monitoring.

4.4 CSO Discharge Warning via Buffalo Sewer Authority Website

SPRTK dictates that overflows reported to NY-Alert should be estimated as they occur, not predicted based on forecasted precipitation data; to keep the public informed about potential upcoming overflow events, BSA will display predicted CSO events on their website. Using the ESRI map visual from Power BI, BSA will show color-coded points at each CSO location flagging whether an overflow is highly likely (red), moderately likely (yellow), or unlikely (green) due to the ongoing or next precipitation event within the next seven days. Precipitation forecasts are generated by NOAA HRRR and queried through the Open-Meteo API. Additionally, the map will show whether any precipitation in the last 48 hours measured at the Buffalo Niagara International Airport may have resulted in CSO discharges. Points are represented as the highest likelihood of overflow probability within the time window from the past 48 hours to the next 48 hours. Overflow events associated with the ongoing or next precipitation event will be represented with full opacity, while those associated with a past precipitation event will be represented with partial transparency. The color-coding scheme is shown in the table below.

Table 4.2

BSA Website CSO Discharge Warning - Color - Coding Scheme

Scenario	Point Color*
CSO discharge is **Ongoing** or **Highly Likely** to occur in next 144 hrs.	#D41159
CSO discharge is **Moderately Likely** to occur in next 144 hrs.	#5D3A9B
CSO discharge is **Unlikely** to occur in next 144 hrs but CSO occurrence was **Highly Likely** in last 48 hrs.	#D41559 + 40 % transparency
CSO discharge is **Unlikely** to occur in next 144 hrs but CSO occurrence was **Moderately Likely** in last 48 hrs.	#5D3A9B + 40% transparency
CSO discharge is **Unlikely** to occur in next 144 hrs and CSO occurrence was **Unlikely** for past 48 hrs.	#1A85FF

*Hex codes added for clarity.

An overflow at a given CSO location is considered highly likely if the precipitation event under review exceeds the CSO trigger precipitation by 25%, moderately likely if the precipitation event meets at least 75% of the CSO trigger precipitation, or unlikely otherwise.

In addition to the overflow warning map on their website, BSA will alert the public via social media outlet if a storm with a return period exceeding one year is expected. The alert information will be generated in Power BI, including

the precipitation event's expected return period, predicted start and end times, and total precipitation depth. BSA will have discretion regarding when social media alerts should be posted and the level of detail included.

5.0 / Potentially Affected Public Entities

Potential affected entities regarding CSOs from the BSA include the Town and City of Tonawanda, the Town of Grand Island, and the City of Niagara Falls. The PNP has identified the following public entities which may be affected by the occurrence of CSO discharges as shown in Table 5.1.

Table 5.1 Potentially Affected Public Entities Contacts

Entity	Contact	Phone Number
Town of Tonawanda	Town Supervisor 2919 Delaware Ave., Room 11 Tonawanda, NY 14217	716-877-8804
City of Tonawanda	Public Works Superintendent 150 Fillmore Ave. Tonawanda, NY 14150	716-695-1376
Town of Grand Island	Town Deputy Supervisor 2255 Baseline Road Grand Island, NY 14072	716-982-5461
City of Niagara Falls	City Administrator 745 Main Street Niagara Falls, NY 14301	716-286-4320

6.0 / Input Received on Public Notification Plan

BSA placed a notice in the Buffalo News and on its website that the draft Public Notification Plan was available for review and comment from January 29, 2024, through March 1, 2024. Additionally, the Erie County Department of Health was notified along with the potentially affected public entities in Table 5.1. No comments were received.

7.0 / Annual Notification

The BSA will release an annual notice by May 1 of each calendar year. This notice will describe CSO discharge from its discharge permit that occurred in the previous calendar year and provide the state NPDES director and EPA with notice on how the annual notice is available. Notice will be sent to EPA in the form of an email to NPDES_CSO@epa.gov and will contain a link to the annual notice.

Appendix A / Typical CSO Sign

N.Y.S PERMITTED DISCHARGE POINT
(wet weather discharge)
SPDES PERMIT No: 0028410

OUTFALL No:_____

For information about this permitted discharge contact:

Permittee Name: Buffalo Sewer Authority

Permittee Contact: Principal Sanitary Engineer

Permittee Phone: (716) 851-4664

Appendix B
CSO Location

N

S

Niagara River

Scajaquada Creek

Black Rock Canal

Buffalo River

Lake Erie

Cazenovia Creek

CSO054 CSO055 CSO003 CSO056 CSO058 CSO059 CSO057 CSO060 CSO004 CSO005 CSO053 CSO008 CSO006 CSO010 CSO012 CSO063 CSO011 CSO013 CSO033 CSO026 CSO066 CSO015 CSO014 CSO017 CSO016 CSO027 CSO022 CSO064 CSO025 CSO050 CSO029 CSO032 CSO049 CSO046 CSO051 CSO044 CSO039 CSO035 CSO047 CSO028 CSO037 CSO052

054 055 003 056 060 058 059 057 004 005 053 007 006 061 008 009 010 011 062 012 063 013 014 015 016 017 022 023 064 025 026 027 033 050 049 032 028 029 048 031 047 046 044 042 040 039 038 037 035 066 051 052

Legend

- Combined Sewer Overflow (52)
- Sensitive Use Area
- Waters Supporting Historic & Current Threatened & Endangered Species
- Scajaquada Drain
- Receiving Water Body
- Combined Sewer Overflow Basin
- City of Buffalo

Service Layer Credits: NYS ITS Geospatial Services

BUFFALO SEWER AUTHORITY

Item 5.2
Combined Sewer Overflow Map

0 2,200 4,400 8,800

Feet

8/30/2023