2022 Annual Plan Report

Onondaga County, New York

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Prepared for:
New York State Department of Environmental Conservation

Prepared by:

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Save the Rain
www.savetherain.us

Jacobs

2022 ANNUAL PLAN REPORT

Prepared for the New York State Department of Environmental Conservation
on behalf of the Onondaga County Department of Water Environment Protection
June 23, 2023

The information contained in this report was prepared under the supervision and direction of the undersigned, whose seal as a registered professional engineer is affixed below.

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Acronyms and Abbreviations

ACJ	Amended Consent Judgment (Fourth Stipulation)
ASLF	Atlantic States Legal Foundation
AWQS	Ambient Water Quality Standards
BMP	Best Management Practice
CCE	Cornell Cooperative Extension
cfu	Colony Forming Units
the City	the City of Syracuse
the County	Onondaga County
CSF	Clinton Storage Facility
CSO	Combined Sewer Overflow
CSS	Combined Sewer System
CVAFS	Cold Vapor Atomic Fluorescence Spectrometry
EBSS	Erie Boulevard Storage System
EDO	Effective Date of Order
EFC	Environmental Facilities Corporation
EIS	Environmental Impact Statement
FC	Fecal Coliform
FCF	Floatables Control Facility
fps	Feet per Second
ft^2	Square Feet
GIF	Green Improvement Fund
GIGP	Green Innovation Grant Program
GIS	Geographic Information System
GPM	gallons per minute
HB	Harbor Brook
HBIS	Harbor Brook Interceptor Sewer
hr	Hour
IMA	Inter-Municipal Agreement
in	Inch(es)
LF	Linear Feet
LTCP	Long-Term Control Plan
µg/L	Micrograms per Liter
Metro	Metropolitan Syracuse Wastewater Treatment Plant
MG	Million Gallons

mg/L	Milligrams per Liter
MIS	Main Interceptor Sewer
mL	Milliliter
MOU	Memorandum of understanding
MRL	Minimum Reporting Limit
MTS	Microbial Trackdown Study
ng/L	Nanograms per liter
NYCRR	New York Codes, Rules and Regulations
NYS	New York State
NYSDEC	New York State Department of Environmental Conservation
NYSDOT	New York State Department of Transportation
OC	Onondaga Creek
OCDWEP	Onondaga County Department of Water Environment Protection
O&M	Operation and Maintenance
OEC	Onondaga Earth Corps
OEI	Onondaga Environmental Institute
%	Percent
PCCM	Post-Construction Compliance Monitoring
QA/QC	Quality Assurance/Quality Control
RTF	Regional Treatment Facility
SAPA	State Administrative Procedures Act
SCADA	Supervisory Control and Data Acquisition
SF	Storage Facility
SPDES	State Pollutant Discharge Elimination System
STR	Save the Rain
SWMM	Stormwater Management Model
TDS	Total Dissolved Solids
TMDL	Total Maximum Daily Load
TOGS	Technical & Operational Guidance Series
UAA	Use Attainability Analysis
USEPA	U.S. Environmental Protection Agency
WQS	Water Quality Standards
WQX	Water Quality Exchange
yr	Year

Executive Summary

This 2022 Annual Plan Report contains a summary of Onondaga County's (the County's) combined sewer overflow (CSO) control, monitoring, and public participation efforts during 2022. The report was prepared based on the reporting requirements of the State Consent Order (Order) between the County and New York State Department of Environmental Conservation (NYSDEC) that was executed on March 16, 2021 and effective on October 8, 2021. CSO annual reporting requirements specified in the Metro SPDES Permit are also included in this report.

The County's CSO control program, also known as Save the Rain, has been guided by the requirements of the Fourth Stipulation of the Amended Consent Judgment (ACJ) since 2009. The Fourth Stipulation of the ACJ was an update to the 1998 ACJ. The ACJ was terminated on October 8, 2021.

The Order requires that the County submit an Annual Plan Report, due on or before April 1st of each year while the County is under the Order with the NYSDEC. The requirements for the Annual Plan Report and the Metro SPDES permit form the basis for the content of this Report.

The goal of the County's Save the Rain program is to improve water quality in Onondaga Lake and its tributaries

Combined Sewer System Overview

The County manages the combined sewer system (CSS) which directs flow to the Metropolitan Syracuse Wastewater Treatment Plant (Metro). The CSS drainage area encompasses 7,337 acres, or approximately 11 square miles. The two major combined sewer areas are the Harbor Brook basin and the Onondaga Creek basin, and a third smaller area is the Ley Creek basin.

The County manages the CSS to maximize the capture and treatment of combined sewage. Even so, the capacity of the CSS can be overwhelmed during periods of intense or prolonged rainfall and snowmelt, and CSO is released through overflow relief points called CSO outfalls. Beginning in 1998, a phased program of improvements, including sewer separations and other green and gray infrastructure projects, has led to closure or abatement of 61 out of 72 CSO outfalls.

2022 Completed Projects

During 2022, the County completed five green infrastructure projects and three gray infrastructure projects as part of its CSO control program. These projects are included in the 248 green infrastructure projects and 23 gray infrastructure projects implemented in the County since 2009. As the County continues to implement CSO control projects, its goal is to implement projects using an opportunistic approach that obtains the greatest CSO reduction and water quality improvement in a cost effective manner.

Future Planned Projects

The County has several CSO control projects currently planned, including three projects that began construction and 21 additional projects planned. An important long-term future planned project is related to the NYSDOT's Interstate 81 (I-81) viaduct project. Specific to the County's CSO Abatement Program, I-81 passes through several combined sewersheds in the City, and runoff from the currently elevated viaduct enters the CSS in several locations. NYSDOT is coordinating with the County on potential stormwater management features of the project that would reduce runoff to the CSS by approximately 85 MG based on current estimates. This massive removal of volume from the CSS will benefit numerous CSOs along the MIS, most significantly CSOs 020, 021, 027, and 080/EBSS. The County is also planning a series of betterments to be completed in conjunction with the I-81 project, including the construction of a new floatables control facility and the replacement of two trunk sewers in the CSS due to conflicts with NYSDOT's proposed infrastructure.

Progress in Achieving CSO Control Program Goals

The ultimate goals of any CSO control program are to continue to reduce the volume of CSO discharges and to improve the water quality of receiving waters. The County uses a stormwater management model (SWMM) and water quality monitoring to assess progress in achieving these goals.

2022 Results of SWMM Analyses

The County's SWMM is a suitable tool used to calculate estimated CSO volume and frequency and to forecast the effectiveness of potential system improvements. The SWMM was used to predict CSO performance based on projects implemented through December 2022 and based on the "typical year" rainfall (1991). The projects implemented during 2022 reduce CSO discharges during the typical year by 3.8 MG, based on a comparison between 2022 and 2021 conditions SWMM. The total CSO reduction since 2009 is calculated as 661 MG. The estimated capture based on the 2022 conditions SWMM is 98.2 percent. A comparison between SWMM estimates for CSO discharge using the 2022 rainfall to the 2022 metered data indicates that the County's SWMM is performing well in estimating conditions at the metered outfalls.

2022 Tributary Water Quality Monitoring Program

In 2022, the County's tributary water quality monitoring program included a continued assessment of the three CSO receiving streams: Onondaga Creek, Harbor Brook, and Ley Creek. The sampling program was conducted to support a compliance evaluation and track fecal coliform concentration trends. Fecal coliform is a CSO-related water quality parameter of primary concern.

Non-compliance results for fecal coliform at all tributary sampling sites (upstream and downstream of CSOs) continued to indicate that the long-term goal of meeting ambient water quality standards for fecal coliform in the CSO tributaries from CSO control alone remains unlikely.

The results of the 2022 tributary monitoring are in line with previously noted long-term trends for fecal coliform levels:

- **Onondaga Creek**: A modest increasing trend has occurred since 2000 at Onondaga Creek upstream of CSOs, and a much stronger decreasing trend at Onondaga Creek downstream of CSOs.

- **Harbor Brook**: Decreases in fecal coliform concentrations were achieved during the late 1980s at Harbor Brook both upstream and downstream of CSOs. Significant changes in recent years have not been observed.

- **Ley Creek**: No consistent patterns have been observed in fecal coliform at Ley Creek downstream of CSOs in recent years. Long-term data upstream of the CSOs is not available for comparison.

The County and NYSDEC finalized a memorandum of understanding in 2020 for the County to complete limited use attainability analyses (UAAs) for CSO affected segments of Onondaga Creek, Harbor Brook, and Ley Creek. The UAAs will be necessary to support NYSDEC's review and, if appropriate, revision of water quality standards and approval of the County's long-term control plan. During 2022 the County and NYSDEC advanced the process of organizing and reviewing existing water quality data to support preparation of the UAAs and in accordance with the Order. As of the end of 2022, the NYSDEC's water quality data review was ongoing.

Public Outreach

The County's Save The Rain Program has always focused on sincere and effective community outreach to achieve its goals. In 2022, the County relied heavily on its digital presence and that of its partners to maintain its public profile. The program continued outreach through the Save the Rain website and social media, as well as through partnerships with Baltimore Woods Nature Center, the Milton J. Rubenstein Museum of Science and Technology (The MOST), Onondaga Earth Corps, Cornell Cooperative Extension, and Atlantic States Legal Foundation (ASLF). Additionally, public outreach meetings were held for the CSO 029 Sewer Reconfiguration project and the West Genesee Street Green Street in 2022.

1. Introduction

This Annual Plan Report is being submitted by Onondaga County (the County) in accordance with the State Consent Order (Order) between the County and New York State Department of Environmental Conservation (NYSDEC) that was executed on March 16, 2021 and effective on October 8, 2021. The Order imposes requirements related to further abatement of the County's remaining combined sewer overflows (CSOs). In addition to satisfying the reporting requirements of the Order, the Annual Plan Report provides information required by the County's State Pollutant Discharge Elimination System (SPDES) permit related to CSO control. Section 1 of the report describes the annual reporting requirements of the Order and the SPDES permit, provides an overview of the County's combined sewer system, and describes how the Annual Plan Report is organized.

1.1 State Consent Order Requirements

Despite considerable public investment and fulfillment of all construction related milestones and attainment of all CSO capture goals set forth in the Amended Consent Judgment (ACJ), CSOs continue to cause and/or contribute to the non-attainment of Water Quality Standards (WQS) for fecal coliform in the CSO tributaries. On October 8, 2021, the 1998 Amended Consent Judgment (ACJ) between the County, the State of New York, and Atlantic States Legal Foundation (ASLF) was deemed satisfied by the Honorable Frederick J. Scullin Jr., Senior United States District Judge. Upon the termination of the ACJ, the Order between the County and NYSDEC that was executed on March 16, 2021 became effective. The Order requires the County to submit an approvable Interim CSO Corrective Measures Plan (ICMP). The County's ICMP dated September 16, 2022, as approved by the NYSDEC defines the County's CSO abatement project plans and includes a Focused Post Construction Compliance Monitoring (PCCM) program to support the Use Attainability Analysis (UAA) efforts, track water quality improvements resulting from abatement efforts and continued maintenance of the County's Storm Water Management Model (SWMM).

Prior to and leading up to the Order, the County and NYSDEC finalized a memorandum of understanding (MOU) in 2020 for the County to complete limited use attainability analyses for CSO affected segments of Onondaga Creek, Harbor Brook, and Ley Creek. The UAAs will be necessary to support NYSDEC's review and, if appropriate, revision of Water Quality Standards and approval of the County's Long-Term Control Plan (LTCP). The goal of the UAAs is to identify what aquatic life, recreational, and aesthetic uses can be attained through implementation of the County's LTCP, as revised. The County will include the UAAs for each waterbody in its future LTCP. Compliance with the Order requires the County to submit an approvable revised LTCP, together with UAA reports for the CSO tributaries, within four (4) years and six (6) months from the effective date of the Order (October 8, 2021).

The Order requires that the County submit an Annual Plan Report, due on or before April 1st of each year while the County is under the Order with the NYSDEC. The requirements for the Annual Plan Report are listed below and form the basis for the content of this Report.

1) Status of any County owned/managed/funded CSO abatement projects that have been implemented or are in planning stages over the past year.

2) Status of any non-County owned/managed/funded "opportunistic" projects that have been implemented or are in planning stages over the past year, including the upcoming New York State I-81 improvement project.

3) Summary of the metering data and review of any discrepancies between the County's stormwater management model (SWMM) and the metered data obtained over the past year, and an update and recalibration of the County's system in accordance with the recalibration plan.

4) Summary of any post-construction compliance monitoring (PCCM) data and determination of water quality improvements resulting from implementation of CSO abatement projects.

Construction of the East Water Street Road Reconstruction Green Infrastructure Project

1.2 SPDES Permit Requirements

The SPDES permit (No. NY 002 7081) issued by NYSDEC also imposes limits and controls on the Metropolitan Syracuse Wastewater Treatment Plant (Metro) and related conveyances to reduce or eliminate pollutant loads to Onondaga Lake and its tributaries in order to avoid contravention of water quality standards. The current version of the Metro SPDES permit was received on June 16, 2017, effective July 1, 2017, and expired on June 30, 2022. In 2022, the permit was modified on May 24th without an end date extension under the State Administrative Procedures Act (SAPA).

The Metro SPDES permit outlines compliance actions for all CSOs and requires the County to submit to the NYSDEC an annual report addressing compliance with the USEPA National CSO Policy, the SPDES permit, and the ambient water quality standards (AWQS). The permit requires the County to issue an annual report for CSO best management practices (BMPs) (Section VII.15).

The Metro SPDES Permit is available online at:
http://ongov.net/wep/documents/Permit_Mod_NY0027081_FINAL.pdf

Onondaga County has included the annual reporting items required by the Metro SPDES permit in this report, with the intention of consolidating information rather than duplicating it.

1.2.1 Monitoring Program

Section XVI of the current Metro SPDES permit outlines specific monitoring for the CSO facilities.

Section 4 provides details on the County's 2022 monitoring program.

Harbor Brook CSO 018 Constructed Wetlands Storage and Treatment Facility

1.2.2 Combined Sewer Overflows Annual Report

The SPDES permit requires the County to implement BMPs for CSOs which include operation and maintenance (O&M) procedures, maximizing the existing treatment facility and collection system to the extent practicable, maximizing pollutant capture, and minimizing water quality impacts from CSOs. The Combined Sewer Overflows Annual Report required by the SPDES permit summarizes the implementation of the BMPs as per Section VII.15 of the SPDES permit. The Annual Combined Sewer Overflow BMP Report is submitted separately by the County to the NYSDEC and is included in this Annual Plan Report as Appendix A.

1.2.3 Special Conditions CSO Control Policy

Pursuant to Section VII.C. of the SPDES permit, the County is required to submit a PCCM Program Report consistent with the Department-approved PCCM Plan which addresses compliance with the USEPA CSO strategy requirements, the SPDES permit, and water quality standards to the NYSDEC. The County has included this information in this report.

Construction of the West Genesee Street Green Street project in CSO 066 was completed in 2022

1.3 Combined Sewer System Overview

The combined sewer system (CSS) directing flow to Metro encompasses 7,337 acres, or approximately 11 square miles. The two major combined sewer areas are the Harbor Brook basin via the Harbor Brook Interceptor Sewer (HBIS) and the Onondaga Creek basin via the Main Interceptor Sewer (MIS). In addition, the upper Butternut/Grant Trunk Sewer and the Hiawatha Trunk Sewer overflow to Ley Creek when pipe capacities are exceeded during wet weather; dry weather flows are conveyed to Metro via the MIS.

Onondaga County manages the CSS to maximize the capture and treatment of combined sewage. Even so, the capacity of the CSS can be overwhelmed during periods of intense or prolonged rainfall and/or snowmelt, which can result in CSO discharges. Beginning in 1998, a phased program of improvements, including sewer separations and other infrastructure projects, has led to closure or abatement of 61 CSO outfalls. Abated CSOs are still open outfalls able to discharge during larger storm events; however, they do not discharge up to the 1-year, 2-hour design storm. Refer to Section 3 for further information on the abated and operational CSO outfalls. No new outfalls were abated in 2022.

Table 1-1 details the pre-abatement and current number of active CSO locations, as well as the acreage of drainage areas tributary to Metro.

Table 1-1. Pre-ACJ and Current CSOs and Drainage Basins Tributary to Metro (as of December 31, 2022)

Drainage Basin	Pre-ACJ Number of Operational CSO Locations (1998)[1]	Current Number of Operational CSO Locations	Current Number of Abated CSO Locations[2]	Combined Sewer Area (acres)	Percentage of Total Combined Sewer Area
Harbor Brook	20	5	11	1,707	23.3%
Onondaga Creek	50	5	22	5,386	73.4%
Ley Creek	2	1	1	244	3.3%
Total	**72**	**11**	**34**	**7,337**	**100.0%**

[1] The number of pre-ACJ operational CSO locations is based on the CSO outfalls listed in Table 1-2.
[2] Abated CSOs are open outfalls that do not discharge up to the 1-year, 2-hour design storm.

Table 1-2 includes an updated list of the status of the CSOs along with the information regarding their location, design storm overflow volume, rainfall trigger intensity, imperviousness, land use, CSO abatement strategy, status or scheduled completion date, and current flow monitoring.

Figure 1-1 shows the CSO outfalls listed in Table 1-2 and graphically delineates the CSO basins by receiving waterbody.

Construction of the Missio Church GIF project in CSO 066 was completed in 2022 and featured a porous asphalt parking lot and added green space

Table 1-2: CSO Outfall Information

CSO Outfall	CSO Status	CSO Location	Latitude	Longitude	Basin Characteristics						CSO Abatement Strategy (completed items in bold)	Status or Scheduled Completion Date (completed items in bold)	Flow Monitoring
					Area (acres)	Design Storm CSO Overflow Volume (MG) [7]	Rainfall Trigger Intensity (in/hr)	Imperviousness (%)	Slope (%)	Land Use			
Harbor Brook Drainage Basin													
003	Abated	Hiawatha Blvd. (West side of HB)	43° 03' 20" N	76° 11' 07" W	95.4	0.0	>0.9	51	0.9	mostly residential; some commercial	**Harbor Brook Storage Facility**	**In service 12/31/2013**	N/A[5]
										and community facilities	**Green Infrastructure**	**12/31/2013**	
004	Abated	State Fair Blvd.	43° 03' 13" N	76° 10' 54" W	372.6	0.0	>0.9	43	0.9	mostly residential; some commercial	**Harbor Brook Storage Facility**	**In service 12/31/2013**	N/A[5]
											Green Infrastructure	**12/31/2013**	
04A (LHBS)	Abated	Lower Harbor Brook Storage Facility Main Outfall	43° 03' 15" N	76° 10' 58" W	-	0.0	>0.9	-	-	-	**Harbor Brook Storage Facility**	**In service 12/31/2013**	Ultrasonic Level Sensor [4]
005	Abated	W. Genesee and Sackett Street	43° 03' 11" N	76° 10' 38" W	11.2	0.0	0.4	81	0.4	mostly commercial; some residential	Floatables Plan	Plan Re-submittal 3/12/13	Water Level Sensor [3]
											Sewer Reconfiguration	**12/31/2019**	
006	Abated	Park Ave. and Sackett Street (West side of HB)	43° 03' 07" N	76° 10' 35" W	15.1	0.0	>0.9	61	0.5	mostly commercial and residential;	Floatables Plan	Plan Re-submittal 3/12/13	Water Level Sensor [3]
										some community facilities and open space	Green Infrastructure	**12/31/2019**	
06A	Abated	Park Ave. and Sackett Street (East side of HB)	43° 03' 07" N	76° 10' 35" W	13.8	0.0	0.4	62	0.4	mostly commercial and residential;	Floatables Plan	Plan Re-submittal 3/12/13	Water Level Sensor [3]
										some community facilities and open space			
007	Operational	Richmond Avenue and Liberty Street	43° 03' 00" N	76° 10' 26" W	31.3	0.2	0.3	62	0.5	mostly commercial and residential;	Floatables Plan	Plan Re-submittal 3/12/13	Water Level Sensor [3]
										some community facilities and vacant land	Green or Gray Infrastructure	ICMP[10]	
008	Closed	Lakeview Avenue and Liberty Street	43° 02' 57" N	76° 10' 59" W	5.1			51	0.9	mostly residential; some commercial			
009	Operational	W. Fayette Street (West side of HB)	43° 02' 47" N	76° 10' 33" W	28.6	0.4	0.6	37	1.4	mostly residential and open space; some	Floatables Plan	Plan Re-submittal 3/12/13	Water Level Sensor [3]
										commercial	Green or Gray Infrastructure	ICMP[10]	
010	Abated	W. Fayette Street (East side of HB)	43° 02' 45" N	76° 10' 21" W	16.9	0.1	>0.9	44	0.6	mostly commercial and public; some	Floatables Plan	Plan Re-submittal 3/12/13	Water Level Sensor [3]
										residential	Green Infrastructure	**Completed 12/31/2020**	
011	Operational	Gifford Street at Fowler HS (East side of HB)	43° 02' 34" N	76° 10' 23" W	55.7	0.1	0.4	41	0.5	mostly commercial, community facilities, and	Floatables Plan	Plan Re-submittal 3/12/13	Water Level Sensor [3]
										residential; some industrial and vacant land	Green or Gray Infrastructure	ICMP[10]	
012	Closed	Gifford Street at Fowler HS (West side of HB)	-	-	-			-	-	-	**Closure**	**Completed [1]**	N/A
013	Closed	Seymour Street	-	-	-			-	-	-	**Separation**	**Completed 12/31/2011**	N/A
014	Operational	Delaware Street	43° 02' 24" N	76° 10' 29" W	206.9	0.3	0.4	43	0.7	mostly residential; some vacant land	Floatables Plan	Plan Re-submittal 3/12/13	Temp. Flow Meter
											Green or Gray Infrastructure	ICMP[10]	
015	Operational	Herriman Street and Grand Avenue	43° 02' 20" N	76° 10' 38" W	49.9	0.3	0.9	44	0.8	mostly residential; some vacant land	Floatables Plan	Plan Re-submittal 3/12/13	Water Level Sensor [3]
											Green or Gray Infrastructure	ICMP[10]	
016	Closed	Lydell Street	-	-	-	-	-	-	-	-	**Separation**	**Completed 12/31/2011**	N/A
017	Abated	Hoeffler Street	43° 02' 12" N	76° 10' 47" W	72.1	0.0	>0.9	28	1.1	mostly residential and vacant; some commercial and public facilities	Floatables Plan	Plan Re-submittal 3/12/13	Water Level Sensor [3]
018	Abated	Constructed Wetland Outfall/ Emergency Bypass	43° 02' 10" N	76° 10' 57" W	152.8	0.0	>0.9	36	1.3	mostly residential; some recreational	**Green Infrastructure - Wetland Treatment with Floatables Control**	**Completed 12/31/2021**	Flow Meter
63A	Abated	Harbor Brook	43° 03' 28" N	76° 11' 16" W	366.6	0.0	>0.9	42	1.2	mostly residential; some commercial	**Harbor Brook Storage Facility**	**In service 9/11/2015**	N/A[5]
		(1000 LF NW of Hiawatha Blvd W.)											
078	Abated	Bellevue and Velasko	43° 02' 08" N	76° 11' 19" W	212.5	0.0	>0.9	27	1.3	mostly residential; some recreational	Floatables Plan	Plan Re-submittal 3/12/13	Temp. Flow Meter
											Green Infrastructure	**12/31/2019**	
Onondaga Creek Drainage Basin													
020	Operational	Butternut Street and I-690	43° 03' 17" N	76° 09' 26" W	643.8	2.7	0.3	52	1.4	mostly residential; some commercial	**Butternut Street FCF**	**Completed 2000**	Existing Flow Meter [6]
											Green or Gray Infrastructure	ICMP, Coordinate with I-81 project	
021	Operational	Burnet Avenue and I-690	43° 03' 16" N	76° 09' 25" W	97.2	2.9	0.2	70	0.6	mostly commercial; some residential	**Burnet Street FCF**	**Completed 2000**	Existing Flow Meter [6]
											Green or Gray Infrastructure	ICMP, Coordinate with I-81 project	
022	Closed	West Genesee Street (East side of OC)	-	-	-	-	-	-	-	-	**Separation, Green Infrastructure**	**In service 4/30/2013**	N/A
024	Closed	Water Street	-	-	-	-	-	-	-	-	**Separation**	**Completed 2001**	N/A
025	Closed		-	-	-	-	-	-	-	-	**Separation**	**Completed [1]**	N/A

Notes:

(1) Actual completion date unknown at this time
(2) Upstream subcatchment areas tributary to EBSS
(3) Event Indicator: record date and duration of overflow
(4) Water levels to be used to approximate flow rate
(5) Flow Meter was removed on 9/27/19, DEC approved
(6) Existing facility with flow metering
(7) SWMM results based on the 1-year, 2-hour design storm
(8) Not used
(9) Not used
(10) Strategy to be updated in ICMP
(11) Formally 060/077 - The outfall name was changed to 60M to meet formatting requirements from EPA and DEC and is planned to be updated in a future modification.

Abbreviations:

Temp. = Temporary
N/A = Not Applicable
TBD = To be determined
ICMP = Interim CSO Corrective Measure Plan

Definitions:

Abated = CSO is zero or minimal for the 1-year, 2-hour design storm
Operational = CSO still discharges
Closed = CSO no longer capable of discharging

Table 1-2: CSO Outfall Information

CSO Outfall	CSO Status	CSO Location	Latitude	Longitude	Basin Characteristics						CSO Abatement Strategy (completed items in bold)	Status or Scheduled Completion Date (completed items in bold)	Flow Monitoring
					Area (acres)	Design Storm CSO Overflow Volume (MG) [7]	Rainfall Trigger Intensity (in/hr)	Imperviousness (%)	Slope (%)	Land Use			
Onondaga Creek Drainage Basin (continued)													
026	Closed		-	-	-	-	-	-	-	-	**Separation**	**Completed** [1]	N/A
027	Operational	West Fayette Street (East side of OC)	43° 02' 55" N	76° 09' 28" W	162.8	1.3	0.3	68	0.6	mostly commercial	Floatables Plan	ICMP, Coordinate with I-81 project	Temp. Flow Meter
											Green or Gray Infrastructure		
028	Abated	Walton Street (West side of OC)	43° 02' 53" N	76° 09' 27" W	23.7	0.0	0.4	68	0.7	mostly commercial and residential; some	**Clinton Storage Facility**	**In service 12/31/2013**	Water Level Sensor [3]
										vacant	**Green or Gray Infrastructure**	**12/31/2019**	
029	Operational	Walton Street (East side of OC)	43° 02' 53" N	76° 09' 27" W	9.9	0.2	0.9	93	0.8	mostly commercial	**Sewer Reconfiguration**	ICMP, Coordinate with I-81 project	N/A
030	Abated	West Jefferson Street (East side of OC)	43° 02' 50" N	76° 09' 27" W	302.3	0.0	>0.9	45	4.0	mostly commercial, open space, residential,	**Clinton Storage Facility**	**In service 12/31/2013**	Ultrasonic Level Sensor [4]
										and community facilities	**Green Infrastructure**	**12/31/2013**	
031	Abated	West Jefferson Street (West side of OC)	43° 02' 49" N	76° 09' 28" W	23.9	0.0	>0.9	40	0.7	mostly commercial and residential; some	**Clinton Storage Facility**	**In service 12/31/2013**	Water Level Sensor (3)
										vacant land and open space	**Green Infrastructure**	**12/31/2016**	
032	Abated	Tully Street	43° 02' 45" N	76° 09' 28" W	23.2	0.0	>0.9	47	0.6	mostly commercial; some residential and	**Clinton Storage Facility**	**In service 12/31/2013**	Water Level Sensor (3)
										community facilities	**Green Infrastructure**	**12/31/2013**	
033	Abated	Dickerson Street	43° 02' 40" N	76° 09' 19" W	15.4	0.0	>0.9	47	0.3	mostly commercial; some residential and community facilities	**Clinton Storage Facility**	**In service 12/31/2013**	Water Level Sensor [3]
33A	Abated	Clinton Storage Facility Main Outfall	43° 02' 47" N	76° 09' 25" W	-	0.0	0.4	-	-	-	**Clinton Storage Facility**	**In service 12/31/2013**	Flow Meter
034	Abated	Clinton and West Onondaga Street	43° 02' 37" N	76° 09' 17" W	172.9	0.0	>0.9	70	1.6	mostly commercial and community facilities	**Clinton Storage Facility**	**In service 12/31/2013**	N/A[5]
											Green Infrastructure	**12/31/2013**	
035	Abated	Gifford Street (West side of OC)	43° 02' 37" N	76° 09' 17" W	22.8	0.0	>0.9	48	0.9	mostly vacant land, commercial, and	**Clinton Storage Facility**	**In service 12/31/2013**	Water Level Sensor [3]
										community facilities	**Green Infrastructure**	**12/31/2013**	
036	Abated	West Onondaga Street	43° 02' 33" N	76° 09' 18" W	162.4	0.0	>0.9	41	2.7	mostly residential, some commercial and	**Clinton Storage Facility**	**In service 12/31/2013**	N/A
										vacant land	**Green Infrastructure**	**12/31/2013**	
037	Abated	East Adams Street	43° 02' 32" N	76° 09' 18" W	39.0	0.0	>0.9	54	1.6	mostly commercial and community facilities	**Clinton Storage Facility**	**In service 12/31/2013**	Water Level Sensor [3]
											Green Infrastructure	**12/31/2013**	
038	Closed	Taylor Street	-	-	-			-	-	-	**Separation**	**Completed 2005**	N/A
039	Abated	Tallman Street (East side of OC)	43° 02' 12" N	76° 09' 19" W	479.7	0.0	>0.9	43	0.6	mostly community facilities; some	**Midland Avenue RTF**	**Completed 2008**	Ultrasonic Level Sensor [4]
										commercial	**Green Infrastructure**	**12/31/2016**	
040	Closed	Tallman Street (West side of OC)	-	-	-	-	-	-	-	-	**Separation**	**Completed 2005**	N/A
M01	Abated	Midland RTF Main Outfall (previously CSO 041)	43° 02' 00" N	76° 09' 30" W	-			-	-	-	**Midland Avenue RTF**	**Completed 2008**	Ultrasonic Level Sensor [4]
042	Abated	Midland Avenue (West side of OC)	43° 01' 59" N	76° 09' 29" W	289.8	0.0	>0.9	41	1.3	mostly residential; some open space and	**Midland Avenue RTF**	**Completed 2008**	Ultrasonic Level Sensor [4]
M02	Abated	Midland RTF Emergency Outfall (previously CSO 043)	43° 02' 01" N	76° 09' 30" W	-	-	-	-	-	-	**Midland Avenue RTF**	**Completed 2008**	Ultrasonic Level Sensor [4]
044	Abated	West Castle Street and South Avenue	43° 01' 50" N	76° 09' 34" W	122.6	0.0	>0.9	39	2.0	mostly residential; some vacant land	**Midland Avenue RTF**	**Completed 12/31/2011**	Ultrasonic Level Sensor [4]
											Green Infrastructure	**12/31/2013**	
045	Closed	Hudson and West Castle Street	-	-	-	-	-	-	-	-	**Separation**	**4/30/2013**	N/A
46A/B	Closed	Onondaga Avenue	-	-	-	-	-	-	-	-	**Separation**	**Completed 2005**	N/A
047	Closed	South Avenue near Centennial Drive	-	-	-	-	-	-	-	-	**Separation**	**Completed 2006**	N/A
048	Closed	South Avenue near Kirk Avenue	-	-	-	-	-	-	-	-	**Separation**	**Completed 2006**	N/A
049	Closed	Kirk Avenue	-	-	-	-	-	-	-	-	**Separation**	**Completed** [1]	N/A
050	Closed	Rockland and Hunt Avenue	-	-	-	-	-	-	-	-	**Separation**	**Completed 2008**	N/A
051	Closed	West Colvin Street and Hunt Avenue	-	-	-	-	-	-	-	-	**Separation**	**Completed 2009**	N/A

Notes:

(1) Actual completion date unknown at this time
(2) Upstream subcatchment areas tributary to EBSS
(3) Event Indicator: record date and duration of overflow
(4) Water levels to be used to approximate flow rate
(5) Flow Meter was removed on 9/27/19, DEC approved
(6) Existing facility with flow metering
(7) SWMM results based on the 1-year, 2-hour design storm
(8) Not used
(9) Not used
(10) Strategy to be updated in ICMP
(11) Formally 060/077 - The outfall name was changed to 60M to meet formatting requirements from EPA and DEC and is planned to be updated in a future modification.

Abbreviations:

Temp. = Temporary
N/A = Not Applicable
TBD = To be determined
ICMP = Interim CSO Corrective Measure Plan

Definitions:

Abated = CSO is zero or minimal up to the 1-year, 2-hour design storm
Operational = CSO still discharges
Closed = CSO no longer discharges

Table 1-2: CSO Outfall Information

CSO Outfall	CSO Status	CSO Location	Latitude	Longitude	Basin Characteristics						CSO Abatement Strategy (completed items in bold)	Status or Scheduled Completion Date (completed items in bold)	Flow Monitoring
					Area (acres)	Design Storm CSO Overflow Volume (MG) [7]	Rainfall Trigger Intensity (in/hr)	Imperviousness (%)	Slope (%)	Land Use			
Onondaga Creek Drainage Basin (continued)													
052	Abated	Elmhurst and Hunt Avenue	43° 01' 15" N	76° 09' 21" W	295.3	0.0	0.4	33	4.8	mostly residential	**Green Infrastructure**	**12/31/2019**	Temp. Flow Meter
053	Closed	Marguerite and Hunt Avenue	-	-	-	-	-	-	-	-	**Separation**	**Completed 2003**	N/A
054	Closed	West Brighton and Hunt Avenue	-	-	-	-	-	-	-	-	**Separation**	**Completed 2003**	N/A
055	Closed		-	-	-	-	-	-	-	-	**Separation**	**Completed** [1]	N/A
056	Closed		-	-	-	-	-	-	-	-	**Separation**	**Completed** [1]	N/A
057	Closed	West Genesee Street (West side of OC)	-	-	-	-	-	-	-	-	**Separation**	**Completed 1999**	N/A
058	Closed	Tracy Street	-	-	-	-	-	-	-	-	**Separation**	**Completed 1999**	N/A
059	Closed	Park Avenue	-	-	-	-	-	-	-	-	**Separation**	**Completed 1999**	N/A
60M [11]	Abated	West Colvin Street (East side of OC)	43° 01' 25" N	76° 09' 17" W	491.3	0.0	>0.9	39	2.6	mostly residential; some vacant land	**Sewer Reconfiguration**	**12/31/2019**	Temp. Flow Meter
											Green Infrastructure	**12/31/2019**	
061	Closed	Crehange St.	43° 01' 19" N	76° 09' 18" W	1.8	-	-	-	-	-	**Separation**	**12/31/2016**	N/A
062	Closed	W. Brighton East	-	-	-			-	-	-	**Eliminate**	**Completed** [1]	N/A
065	Closed	Maltbie St.	-	-	-	-	-	-	-	-	**Maltbie Street FCF**	**Completed 1999**	N/A
066	Operational	Maltbie St.	43° 03' 20" N	76° 09' 41" W	119.8	0.4	0.4	71	0.7	mostly commercial; some residential	**Maltbie Street FCF**	**Completed 1999**	Existing Flow Meter [6]
											Green or Gray Infrastructure	ICMP [10]	
067	Abated	W. Newell St.	43° 00' 58" N	76° 09' 28" W	41.9	0.0	>0.9	40	0.5	mostly residential; some open space	**Green Infrastructure**	**12/31/2019**	Existing Flow Meter [6]
071	Abated	Spencer St. Bypass	43° 03' 26" N	76° 09' 41" W	-	0.0	>0.9	-	-	-	**Captured up to 2-year storm**	**Completed** [1]	
075	Abated	Hiawatha Blvd.	43° 03' 54" N	76° 10' 25" W	111.5	0.0	>0.9	57	1.2	mostly commercial and residential; some	**Regulator Modification**	**Completed** [1]	N/A
										vacant land and community facilities	**Green and Gray Infrastructure**	**Completed 12/31/21**	
076	Abated	Brighton and Midland	43° 01' 09" N	76° 09' 18" W	76.9	0.0	>0.9	38	1.0	mostly commercial; some residential	**Floatables Plan**	**Plan Re-submittal 3/12/13**	Water Level Sensor [3]
080	Abated	Erie Blvd. (East side of OC)	43° 03' 08" N	76° 10' 36" W	656.1	0.0	0.4	44	1.8	mostly residential; some commercial	**Erie Blvd. Storage System (EBSS)**	**Completed 2002**	Flow Meter. Event indicators at sub-basin CSOs A-I
		A - James Street Relief Sewer			367.5						**EBSS Gate Modifications**	**Completed 2011**	
		B - Fayette Street and Irving Avenue			137.0								
		C- South Crouse Avenue and Washington Street			44.5								
		D - Burnet Avenue and Elm Street			49.2								
		E - East Washington Street and Pine Street			38.4								
		F - South Beech and Canal Street			70.7								
		G - Burnet and Sherwood Avenue			62.7								
		H - Burnet and Teall Avenue			216.7								
		I - East Genesee and Westcott Street			13.2								
Ley Creek Drainage Basin													
073	Operational	Teall Ave.	43° 04' 42" N	76° 07' 25" W	238.4	1.2	0.5	47	1.4	mostly residential	**Teall Brook FCF**	**Complete 2001**	Existing Flow Meter [6]
											Green or Gray Infrastructure	ICMP [10]	
074	Abated	Hiawatha Blvd.	43° 04' 36" N	76° 10' 19" W	6.0	0.0	>0.9	62	1.9	mostly residential; some commercial	**Hiawatha Blvd. RTF**	**Completed 2001**	Existing Flow Meter [6]

Notes:

(1) Actual completion date unknown at this time
(2) Upstream subcatchment areas tributary to EBSS
(3) Event Indicator: record date and duration of overflow
(4) Water levels to be used to approximate flow rate
(5) Flow Meter was removed on 9/27/19, DEC approved
(6) Existing facility with flow metering
(7) SWMM results based on the 1-year, 2-hour design storm
(8) Not used
(9) Not used
(10) Strategy to be updated in ICMP
(11) Formally 060/077 - The outfall name was changed to 60M to meet formatting requirements from EPA and DEC and is planned to be updated in a future modification.

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Onondaga County Department of WATER ENVIRONMENT PROTECTION

Figure 1-1
Metro Service Area CSO Basin Map

Legend

CSO Outfall Status
- Abated
- Closed
- Operational

CSO Basin by Receiving Water Body
- Harbor Brook
- Ley Creek
- Onondaga Creek

- CSO Boundary
- Stream
- Water Body
- Interceptor
- Trunk Sewer

N

0 1,500 3,000

Feet

Jacobs

Map Prepared: 03/23/2023

Inset Map 1

Inset Map 2

Esri Community Maps Contributors, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA

1.4 Annual Plan Report Organization

The 2022 Annual Plan Report is organized in the following manner:

- **Section 1 – Introduction** provides the following:
  - Summary of the legal documents requiring and governing the Annual Plan Report, namely the Order and the SPDES Permit
  - Overview of the combined sewer system and CSOs
  - Listing of contents of the Annual Plan Report
- **Section 2 – CSO Control Project Status Update** summarizes updates to the following:
  - Description of the significant gray and green projects included in the County's CSO control program that were active in 2022
  - Future planned CSO control projects, O&M requirements for the gray and green projects, and summary of 2022 maintenance activities
- **Section 3 – SWMM Update** presents the following:
  - Annual update of the status and results of the stormwater management model
  - Comparison between the County's SWMM estimates for CSO discharge using the rainfall that occurred in 2022 and the metered data obtained over the past year
- **Section 4 – CSO Monitoring Program** provides the following:
  - 2022 CSO monitoring activities and results
  - Floatables Control Program update
  - CSO Best Management Practices Report
- **Section 5 – Public Outreach and Participation** summarizes the following:
  - Overview of outreach activities
  - Exploration of partnerships
  - Project-specific outreach efforts
- **Section 6 – Conclusions** summarizes 2022 CSO control program accomplishments.

2. Combined Sewer Overflow Project Status

The CSO control projects discussed in this section represent the current scope of the County's CSO abatement program. This section provides project descriptions, locations, scope of work, and status for projects that have been implemented or are in the planning stages in 2022. For additional project-specific information, please go to the Save the Rain (STR) website at https://savetherain.us/.

2.1 2022 Completed Projects

Onondaga County has successfully incorporated gray and green infrastructure into its CSO control program. This section describes the CSO control projects advanced in 2022.

2.1.1 Green Infrastructure Projects Completed in 2022

The County continued implementing green infrastructure in 2022 with five projects completed, including three Green Improvement Fund (GIF) projects. Details, including their location, lead agency, CSO basin, dominant green infrastructure technology, impervious drainage area managed, and estimated runoff reduction are provided in Table 2-1. Figure 2-1 shows the locations of the green infrastructure projects completed in 2022.

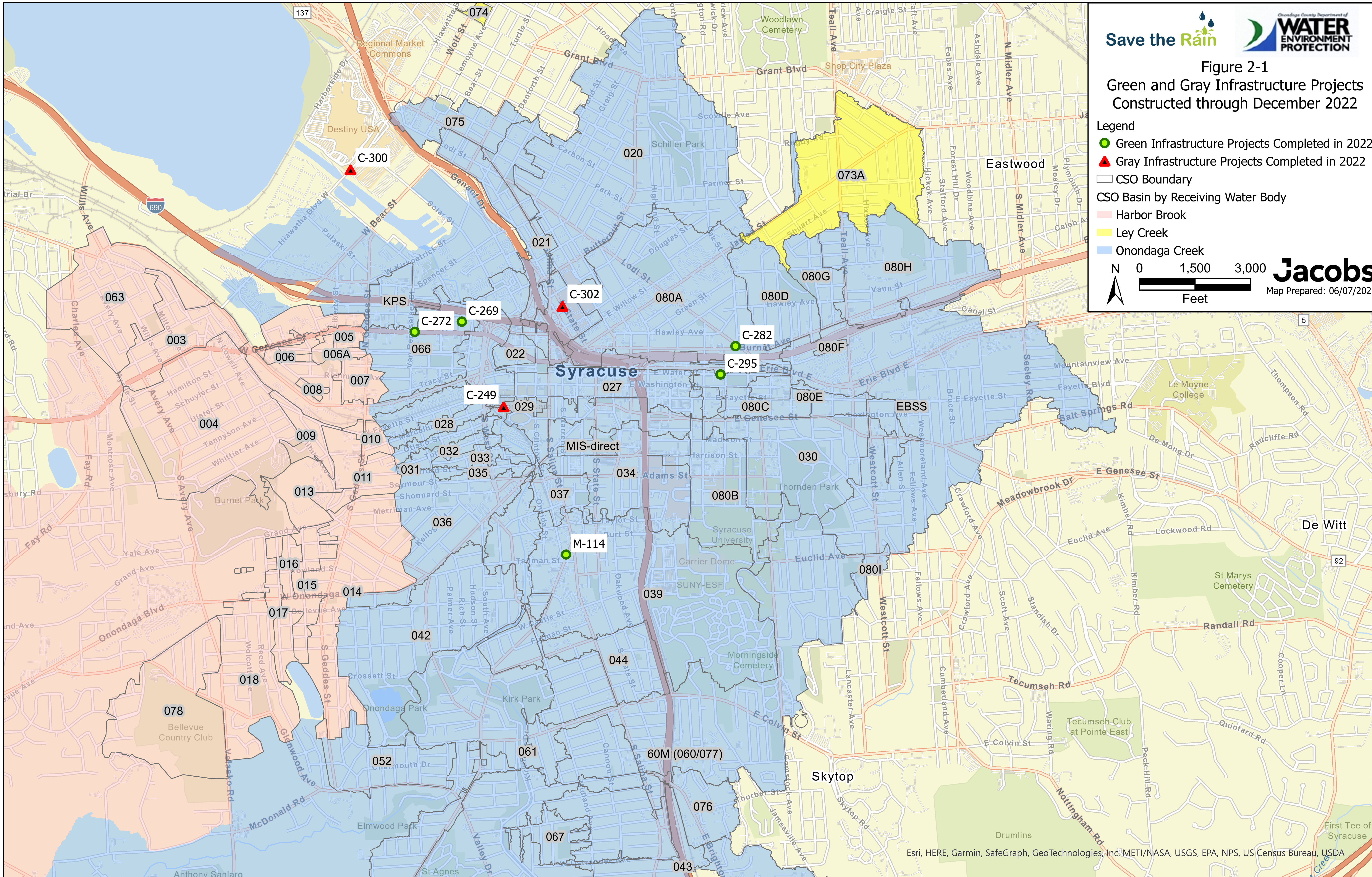
The signature County-led green infrastructure project completed in 2022 was the West Genesee Street Green Street project (C-272). The comprehensive green street project included multiple underground infiltration trenches along a 4-block stretch of West Genesee Street from North Geddes Street to Plum Street in CSO 066. Nearly 6 acres of impervious area was managed by the green infrastructure, equating to an estimated annual runoff reduction of 4.2 MG.

Construction photos of the West Genesee Street Green Street Project. Several underground infiltration trenches were installed along the project length.

Table 2-1. Green Infrastructure Projects Completed in 2022

Project ID[1]	Project Name	Project Address	Lead Agency	CSO Basin	Green Infrastructure Technology	Impervious Drainage Area (ft^2)	Runoff Reduction (gal/yr)
C-269	GIF #172 - Missio Church	620 W. Genesee St.	Private	066	Porous Pavement	60,472	1,046,000
C-272	West Genesee Street Green Street	West Genesee St. between North Geddes St. and Plum St.	County	066	Infiltration Trench	260,679	4,289,000
C-282	GIF #182 - Home Headquarters Inc. DeJulios	664-666 Burnet Ave.	Private	080A	Porous Pavement	22,069	168,000
C-295	East Water Street Road Reconstruction	East Water St. between Forman Ave. and Pine St.	County	027	Infiltration Trench	138,385	1,412,000
M-114	GIF #180 JMA Tech Parking Lots	1022/1054/1080-1082 South Clinton, 222-226 Tallman St.	Private	039	Cistern, Tree Planting	134,138	768,000
TOTAL ESTIMATED RUNOFF REDUCTION FOR 2022 PROJECTS (gal/yr)							7,683,000

[1]Project ID's are assigned based on CSS Service Area: C = Clinton; H = Harbor Brook; M = Midland.
NOTE: The green infrastructure database is constantly being updated as information is received. Post-construction as-built information is incorporated upon receipt. For this reason, there might be slight variations in database information versus SWMM versus www.savetherain.us at any point in time.


Save the Rain
Onondaga County Department of WATER ENVIRONMENT PROTECTION
Figure 2-1
Green and Gray Infrastructure Projects
Constructed through December 2022
Legend
Green Infrastructure Projects Completed in 2022
Gray Infrastructure Projects Completed in 2022
CSO Boundary
CSO Basin by Receiving Water Body
Harbor Brook
Ley Creek
Onondaga Creek
N
0 1,500 3,000
Feet
Jacobs
Map Prepared: 06/07/2023
C-300
C-302
C-269
C-272
C-282
C-295
C-249
M-114
075
020
021
073A
080G
080H
080A
080D
080F
080E
080C
080B
080I
KPS
066
022
027
029
028
032
033
035
031
010
011
009
008
007
006
006A
005
003
063
004
013
016
015
014
017
018
078
036
037
034
030
039
042
044
052
061
067
076
043
060M (060/077)
EBSS
MIS-direct
074
Syracuse
Eastwood
De Witt
Skytop
Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA

Section 2 - Combined Sewer Overflow Project Status

The signature GIF project completed in 2022 was the Missio Church project in CSO 066. This project featured multiple design elements. The first element was a porous asphalt parking lot that replaced 35,895 square feet of impervious area at the project site. Porous pavers were installed to replace existing impervious sidewalk, and added green space was incorporated around the parking lot to further increase runoff reduction. Additionally, roof drains were connected to underground infiltration trenches beneath the porous asphalt to manage runoff from the roof of the church. This project resulted in an estimated annual runoff reduction of 1,046,000 gallons from CSO 066.

Photographs of the Missio Church GIF project porous pavement parking lot (left) and added green space with porous pavers (right) being installed.

Through 2022, the County has completed a total of 248 green infrastructure projects. The completed green infrastructure projects provide a total of 209 MG of runoff reduction on an annual basis throughout the CSS and account for approximately 32 percent of the average annual calculated combined sewage volume captured, treated, or eliminated since 2009 (see Section 3.2). For a summary of projects completed in previous years, please refer to previous ACJ Annual Reports posted on the Save the Rain website at https://savetherain.us/str-reports/.

2.1.2 Gray Infrastructure Projects in 2022

The County continued construction of gray infrastructure projects in 2022 with three completed projects. Details on the completed projects in 2022 are provided in Table 2-2 and locations are shown in Figure 2-1.

The significant gray infrastructure project completed in 2022 was the CSO 029 Abatement project. This project featured the reconfiguration of the CSO 029 regulator to reduce the frequency of CSO discharges and improve system hydraulics. Prior to the project, CSO 029 discharged an estimated 18 times with a total discharge volume of 5.7 MG during the 1991 typical year, based on the 2021 SWMM conditions model (see the 2021 Annual Report for reference). Constructing this project reduced CSO discharges to 0.9 MG for the 1991 typical year per SWMM estimates from the 2022 conditions model, an 85% reduction in CSO volume.

Construction of the CSO 029 Abatement Project (left) and photo of the new CSO 029 Regulator Structure (right)

Table 2-2. Gray Infrastructure Projects Completed in 2022

Project ID	Project Name	Project Address	County-Led or Partnership Project	Basin	Gray Technology	Project Basin(s) CSO Reduction[1,2] (gal/yr)	Overall System CSO Reduction[1,2] (gal/yr)
C-249	CSO 029 Sewer Reconfiguration	200-300 Walton St.	County-Led	029	Sewer Reconfiguration	4,900,000	3,000,000
C-300	Hiawatha Boulevard Sewer Lining[3]	Hiawatha Boulevard from Solar St. to Van Rensselaer St.	County-Led	N/A	Sewer Lining	N/A	N/A
C-302	North State Street Sewer Lining[3]	North State Street from Kirkpatrick St. to Catawba St.	County-Led	N/A	Sewer Lining	N/A	N/A

NOTE: The gray infrastructure database is constantly being updated as information is received. Post-construction as-built information is incorporated upon receipt. For this reason, there might be slight variations in database information versus SWMM versus www.savetherain.us at any point in time.

[1] CSO reduction estimates were calculated using the 2022 conditions SWMM (see Section 3). The current CSO reduction estimates may vary from previously published estimates because improvements to the overall system over time have increased capacity in the system. The amount of estimated CSO reduction achieved by a gray project may decrease, therefore, because there is less potential CSO discharge.

[2] The CSO reduction values are shown for each project basin(s) and for the overall system. Because hydraulic changes in one part of the system can affect what happens in other parts of the system, a project may cause an increase or decrease in CSO in other basins, which causes the overall system CSO reduction to be less than or greater than the CSO reduction in the project basin(s).

[3] The Hiawatha Boulevard Sewer Lining and North State Street Sewer Lining projects did not provide a direct benefit to CSO reduction within the CSS as the sewer linings were completed on City sewers downstream of the combined sewer collection areas. However, the lining provided an overall, non-quantifiable benefit from the reduction of inflow and infiltration into the system.

The two remaining gray infrastructure projects completed in 2022 were sewer lining projects on Hiawatha Boulevard and North State Street (both City-owned sewers). Approximately 1,125 linear feet of combined sewer ranging from 24" to 42" was lined on North State Street and approximately 940 linear feet of the combined sewer (30" diameter) was lined on Hiawatha Boulevard.

Both of the sewer lining projects completed in 2022 were funded in part via a NYS Empire State Development (ESD) Regional Council Economic Grant the County obtained.

Through 2022, the County has completed a total of 23 gray infrastructure projects since 2009. The completed gray infrastructure projects account for approximately 68 percent of the average annual calculated combined sewage volume captured, treated, or eliminated since 2009 (see Section 3.2). For a summary of projects completed in previous years, please refer to previous ACJ Annual Reports posted on the Save the Rain website at https://savetherain.us/str-reports/.

2.2 Future Planned Projects

The County continues to use SWMM to identify specific sewersheds where green and gray infrastructure implementation will provide the most efficient CSO reductions and lead to further water quality improvements. The County has several CSO control projects currently planned, including three projects that were awarded or began construction in 2022 with completion anticipated in 2023. A list of the future planned projects, their location, the lead agency, CSO basin, BMP type, status, and anticipated schedule, if known, is provided in Table 2-3. It is important to note that the schedule for implementation of these projects is fluid and not solely controlled by the County.

Construction of the Marshall Hall (GIF #186) green infrastructure project began in 2022. The project is in CSO 039 and consists of underground infiltration, rain gardens, and porous pavers that are estimated to capture 1.1 MG of runoff on an annual basis once complete.

Table 2-3. Future Planned Projects (Sorted by Anticipated Schedule Date)

Project ID	Project Name	Location	Lead Agency	CSO Basin	BMP Type	Status	Estimated Annual Runoff Reduction (gallons)[a]	Estimated Annual CSO Reduction (gallons)[b]	Current Estimated County Construction Cost[c]	Anticipated Schedule, If Known[d]
C-273	Butternut Street Green Corridor Phase 1	Butternut St. between North Salina St. and Lodi St.	Onondaga County	020	Infiltration Trench, Street Trees, Bioretention	Under Construction	4,200,000	2,016,000	$2,781,777	Anticipated completion by end of 2023
C-303a	Lodi Street Road Reconstruction (North)	Lodi Street Between Isabella St. and N Townsend St.	Onondaga County	020	Infiltration Trench	In Design	299,000	143,520	$202,398	Anticipated completion by end of 2023
C-303b	Lodi Street Road Reconstruction (South)	Lodi Street Between Catawba St. and McBride St.	Onondaga County	020	Infiltration Trench	In Design	175,000	84,000	$98,584	Anticipated completion by end of 2023
M-116	CSO 052 Regulator Modifications	Elmhurst Ave. from Hunt to Onondaga Creek Pkwy.	Onondaga County	052	Sewer/Structure Reconfiguration, System Optimization	Under Construction	N/A	500,000	$431,572	Anticipated completion by end of 2023
M-118	GIF #186 Marshall Hall	1 Forestry Drive	Private	039	Rain Garden, Bioretention, Tree Planting, Cistern	Under Construction	1,071,600	514,368	$114,400	Anticipated completion by end of 2023
C-277	CSO 066 Regulator Modification	Maltbie St. and Evans St.	Onondaga County	066	Sewer/Structure Reconfiguration	In Design	N/A	3,100,000	$1,109,167	Anticipated completion by end of 2024
C-304	Water Street Sewer Separation (Road Reconstruction)	Water Street Between State St. and McBride St.	Onondaga County	027	Sewer Separation	In Design	1,726,000	300,000	$400,000	Anticipated completion by end of 2024
C-305a	Fayette Street Sewer Separation (Road Reconstruction)	Fayette Street Between Irving Ave. and Almond St.	Onondaga County	027	Sewer Separation	In Design	2,056,000	987,000	$500,000	Anticipated completion by end of 2024
C-305b	Forman Ave. Sewer Separation	Forman Avenue Between E Washington St. and Wellington Pl.	Onondaga County	027	Sewer Separation	In Design	763,000	366,000	$500,000	Anticipated completion by end of 2024
C-275	GIF #176 Middle Ages Brewing	120 Wilkinson St.	Private	066	Porous Pavement	In Design	878,100	421,488	$343,500	Anticipated completion by end of 2024

Table 2-3. Future Planned Projects (Sorted by Anticipated Schedule Date)

Project ID	Project Name	Location	Lead Agency	CSO Basin	BMP Type	Status	Estimated Annual Runoff Reduction (gallons)[a]	Estimated Annual CSO Reduction (gallons)[b]	Current Estimated County Construction Cost[c]	Anticipated Schedule, If Known[d]
C-276	GIF #177 Goodman Service	901 W Genesee St.	Private	066	Porous Pavement	In Design	1,363,800	654,624	$468,200	Anticipated completion by end of 2024
C-284	GIF #184 Home Headquarters - Oak St.	101 Oak St.	Private	080A	Porous Pavement	In Design	247,300	118,704	$78,700	Anticipated completion by end of 2024
C-287	GIF #189 InterFaith Works	1010 James St.	Private	080A	Bioretention, Porous Pavement	In Design	648,300	311,184	$147,600	Anticipated completion by end of 2024
C-299	GIF #196 - Barnes Foundation	930 James St.	Private	080A	Porous Pavement	In Design	1,234,000	592,320	$200,000	Anticipated completion by end of 2024
M-78	GIF #142 Deb's Convenient Mart	2419 South Salina St.	Private	60M (060/077)	Porous Pavement	In Design	378,500	181,680	$140,200	Anticipated completion by end of 2024
M-108	CSO 067 Vortex Decommissioning and Hydraulic Improvements	West Newell St. at Onondaga Creek	Onondaga County	067, 061, 60M (060/077)	Sewer/Structure Reconfiguration, System Optimization	In Design	N/A	N/A	$1,740,000	Anticipated completion by end of 2024
M-119	GIF #197 - Peace Inc. Martin Luther King Blvd.	138 Martin Luther King Blvd.	Private	039	Porous Pavement	In Design	163,500	78,480	$50,800	Anticipated completion by end of 2024
C-293	Prospect Hill Green Streets	Willow St between State St. and McBride St, Townsend St between Hickory St and James St	Onondaga County	021/080A	Street Trees, Infiltration Trench, Porous Pavement	Planning	2,600,000	1,248,000	$2,370,727	Anticipated completion in 2025
C-294a	Rose Hill Cemetery Greening	Lodi St. Between Douglas, Highland, and East Willow St.	Onondaga County	020	Bioretention	Planning	2,257,000	1,083,360	$1,259,437	Anticipated completion by end of 2025
C-294b	Highland Park Greening	Highland St. and Beecher St.	Onondaga County	020	Bioretention	Planning	257,000	123,360	$345,002	Anticipated completion by end of 2025

Table 2-3. Future Planned Projects (Sorted by Anticipated Schedule Date)

Project ID	Project Name	Location	Lead Agency	CSO Basin	BMP Type	Status	Estimated Annual Runoff Reduction (gallons)[a]	Estimated Annual CSO Reduction (gallons)[b]	Current Estimated County Construction Cost[c]	Anticipated Schedule, If Known[d]
C-306	GIF #198 716-28 James St.	716-28 James St.	Private	080A	Porous Pavement	In Design	785,000	376,800	$190,500	Anticipated completion by end of 2025
M-117	GIF #185 Musso Properties	235 Cortland Ave.	Private	039	Porous Pavement	In Design	1,683,200	807,930	$200,000	Anticipated completion by end of 2025
M-120	East Side Interceptor Sewer Replacement	West Colvin St. and Kirk Park Drive (60M (060/077) Regulator Structure) to MIS Junction	Onondaga County	60M (060/077)	Sewer Replacement and Upsizing, Structure Reconfiguration, Sewer Reconfiguration	Planning	N/A	2,100,000	$1,960,000	Anticipated completion by End of 2025
C-267	I-81 Renovation	Interstate 81 between Exit 16A (I-481 North) to just north of Destiny USA	NYSDOT	60M (060/077), 039, 034, MIS, 030, 027, 80A, 066, 020, 021, 022, 075	Pavement Removal, Stormwater Detention, Sewer Modification	Planning	TBD	TBD	TBD	TBD
Total	-	-	-	-	-	-	22,786,300	16,108,818	$25,369,564	-

[a] Estimated Annual Runoff Reduction is calculated based on the average annual rainfall for the CSS (39.34"). Upon completion of the projects, the projects will be entered into the SWMM model and SWMM model estimated calculations of runoff reductions will be provided in the Annual Plan Reports. Note that gray infrastructure projects do not provide runoff reduction.

[b] For green infrastructure projects, estimated annual CSO reductions are calculated based on the system-wide average of CSO reduction volume equating to 48% of the annual runoff reduction volume. For gray infrastructure projects, estimated annual CSO reductions are provided from SWMM calculation estimates. Upon completion of the projects, the projects will be entered into the SWMM model and SWMM model estimated calculations of CSO reductions will be provided in the Annual Plan Reports.

[c] Estimated cost and anticipated schedule for each project are subject to change. The County currently has funds budgeted for each of the projects listed in Table 2-3. Any changes to the anticipated construction completion schedule will be submitted for review and approval by DEC as part of future Annual Report submissions.

[d] Anticipated schedule for each project is subject to change. Any changes to the anticipated construction completion schedule will be submitted for review and approval by DEC as part of this and subsequent Annual Reports.

2.2.1 Interstate 81 Renovation

The Interstate 81 (I-81) viaduct project is a massive infrastructure improvement project planned by NYSDOT in the City of Syracuse. Specific to the County's CSO Abatement Program, I-81 passes through several combined sewersheds in the City and runoff from the currently elevated viaduct enters the combined sewer system in several locations. In 2022, the NYSDOT finalized the Environmental Impact Statement (EIS) for the project and continued coordinating with the County, meeting roughly on a quarterly basis. In the EIS, NYSDOT has identified a stormwater management area of 230 acres that is currently tributary to the combined sewer system that will be separated to Onondaga Creek as part of the project (Figure 2-2). NYSDOT has committed to sizing the separate storm sewer receiving this runoff for the 50-year storm and providing "stubs" off the storm sewer for potential future sewer separation by the County to further reduce CSOs. The added capacity and "stubs" will provide the County with significant opportunity for further stormwater and CSO management after construction of the I-81 project.

Three specific projects included in Table 2-3 are being progressed by the County to align with the future stormwater separation of this area. The Water Street, Fayette Street, and Forman Avenue Sewer Separation projects (C-304, C-305a and C-305b) are planned to be constructed in advance of the I-81 project. Each project will feature a future connection point to the I-81 storm sewer to be constructed by NYSDOT. NYSDOT has committed to making the future connections when the storm sewer is built. The sewer separation projects will temporarily tie-back into the combined system until the I-81 storm sewer is constructed. These three sewer separation projects are estimated to remove 3,763,000 gallons of stormwater runoff from the combined system on an annual basis.

With the planned stormwater management areas currently in the EIS (excluding the sewer separation projects being progressed by the County), approximately 85 MG of runoff reduction from the CSS is estimated. This massive removal of volume from the CSS will benefit numerous CSOs along the MIS, most significantly CSOs 020, 021, 027, and 080/EBSS.

The County and NYSDOT also continued coordination on several other items related to the I-81 project, including the items listed below. These items are being discussed on a preliminary basis with NYSDOT. They have not been finalized and should not be construed as firm commitments by NYSDOT or the County at this time. These items are provided as information to the NYSDEC to show the County's continued progress on coordinating with NYSDOT on the I-81 project. It is anticipated that final agreements between NYSDOT and the County will be reached in the future. At that time, the County will be submitting a basis of design with more specifics on each item for NYSDEC approval.

- **Potential conflicts with the proposed storm sewer work and existing County-owned combined trunk sewers**

  The County and NYSDOT are finalizing protection and/or relocation details to resolve elevation conflicts with the new I-81 storm sewer for the County-owned trunk sewers along Colvin Street, Erie Boulevard, Fayette Street, Jefferson Street, Harrison Street, and Tallman Avenue. The final actions will be funded by NYSDOT.

- **Potential modifications to the connections of the Butternut and Burnet trunk sewers and their connections to the MIS (CSOs 020/021)**

  The County and NYSDOT are finalizing a plan to relocate and replace portions of both the Butternut and Burnet trunk sewers. It is currently planned to relocate and combine both sewers into one larger sewer with a new connection to the MIS, new floatables facility on the overflow, and a single new overflow point to Onondaga Creek. Refer to Figure 2-3 for a visual representation of this work. Preliminarily, SWMM estimates

that these potential changes will reduce CSOs by 25 MG on an annual basis. The County will be funding the cost of the new floatables facility and NYSDOT will be funding the cost of the remainder of this work.

- **Potential modification of the Burnet trunk sewer and CSO 080A regulator at James Street to improve combined sewer system performance and reduce CSOs**

  Currently a serpentine "S" exists in the Burnet trunk sewer that is a maintenance challenge for the County (Figure 2-4). Furthermore, the CSO 080A regulator could be modified to optimize CSO performance. The James Street Relief Sewer will also be rerouted to avoid conflict with the I-81 storm sewer. The County and NYSDOT are planning to include this work in the project, funded by the County.

- **Potential replacement of the Hiawatha trunk sewer crossing I-81**

  Presently, the Hiawatha trunk sewer crossing I-81 is mostly 33" diameter, except for approximately 100 linear feet of pipe that is 18" diameter (Figure 2-5). SWMM modeling has indicated that this 18" pipe constriction has the potential to cause manhole flooding during large storms. Therefore, the County desires replacing the entirety of the Hiawatha trunk sewer across I-81 and upsizing the portion of pipe that is currently 18" diameter to 33" diameter. The County and NYSDOT are planning to include this work in this project, funded by the County.

The County plans on replacing both the Butternut (shown) and Burnet FCFs with one larger joint facility, and adding a new connection to the MIS in conjunction with the NYSDOT project.

Each of these items offer significant potential for the County to further reduce CSOs and improve operability and maintainability of the CSS within and near the I-81 project limits. The County and NYSDOT will continue to coordinate with NYSDEC as this extremely important and impactful project evolves.

Save the Rain

Onondaga County Department of WATER ENVIRONMENT PROTECTION

Figure 2-2
I-81 Viaduct Project
Proposed Stormwater Management Areas

Legend

- CSO Boundary
- DOT Proposed Storm Sewer Trunk Line
- DOT Proposed Stormwater Management Area

N

0 1,300 2,600

Feet

Jacobs

Map Prepared on 02/09/2022

Total Area to be Managed by the I-81 Viaduct Project	
CSO Basin	**Area Managed (ft²)**
020	761,800
021	598,100
022	5,400
027	591,300
030	176,100
034	494,900
039	854,500
043	367,400
044	4,700
066	189,200
075	298,800
080A	963,300
080B	7,200
080C	52,800
MIS-direct	327,600
EBSS	1,284,200
KPS	36,700

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Figure 2-3
I-81 Project: Evans Street Floatables Control Facility and Butternut/Burnet Trunk Sewer Replacement Conceptual Plan

Legend

- Onondaga Creek
- Existing Combined Sewer
- Existing Trunk Sewer
- MIS
- New Underflow to MIS
- New Overflow Piping
- Proposed Trunk Sewer
- Proposed Trunk Sewer Alternative 1
- Proposed Trunk Sewer Alternative 2
- Proposed Combined Sewer
- Proposed Structures

N

0 150 300

Feet

Jacobs

Map Prepared: 02/09/2023

Butternut Trunk Sewer Routing

Connect Existing Combined Sewer to New Trunk Sewer

Butternut Trunk Sewer Routing Alternative 1

Butternut Trunk Sewer Routing Alternative 2

Existing Butternut Trunk Sewer Routing

Junction Box Alternative 1

Junction Box Alternative 2

Burnet Trunk Sewer Routing Alternative 1

Burnet Trunk Sewer Routing Alternative 2

Main Interceptor Sewer (MIS)

New CSO 020/021 Regulator Structure

New Evans Street Floatables Control Facility

Connect Existing Combined Sewer to New Trunk Sewer

Burnet Trunk Sewer Routing

New MIS Connection

Existing Butternut Floatables Control Facility

Existing Burnet Floatables Control Facility

New Combined CSO 020/021 Outfall to Onondaga Creek

Existing Burnet Trunk Sewer Routing

Extend Existing Combined Sewer to Connect to New Trunk Sewer (TYP x 3)

Existing CSO 020 and 021 Outfalls to Onondaga Creek to be Closed

Onondaga Creek

8-in Combined

42-in Combined

36"32-in Trunk

60" diameter

Salt St

N State St

0-in Combined

12-in Sanitary

Schlosser Park

12-in Combined

8-in Sanitary

18-in Combined

60-in Trunk

7'X10'

72" diameter

Pearl St

Ashland Park

E Belden Ave

90-in TrunkMIS

Evans St

87-in TrunkMIS

24-in Trunk

0-in Trunk

72-in Trunk

Websters Crnr

15-in Combined

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Save the Rain

Onondaga County Department of WATER ENVIRONMENT PROTECTION

Figure 2-4
I-81 Project: Proposed Burnet Trunk Sewer and James Street Relief Sewer Modification

Legend

- Existing Combined Sewer
- Existing Trunk Sewer
- Existing Storm Sewer
- Existing Burnet Trunk Sewer
- Proposed Burnet Trunk Sewer
- Existing Jame Street Relief Sewer
- Proposed James Street Relief Sewer

N

0 110 220
Feet

Jacobs

Map Prepared: 02/14/2023

Burnet Trunk Sewer Flows to the MIS

Burnet Trunk Sewer Routing

Existing Burnet Trunk Sewer Routing

James Street Relief Sewer Routing

CSO 080A Regulator Manhole with Adjustable Weir

Existing James Street Relief Sewer Routing

Existing Connection to EBSS

Erie Boulevard Storm Sewer (EBSS)

Connection to EBSS

72" diameter

54" diameter

48" diameter

60" diameter

7.5'X10.5'

E Willow St

James St

Burnet Ave

N Salina St

N Warren St

Oswego Blvd

Erie Blvd E

Clinton Square

Pitts Park

QUALITY INN & Suites-Syracuse

81

690

290

11

5

Figure 2-5
I-81 Project: Proposed Hiawatha Trunk Sewer Replacement

Legend

- Combined Sewer
- Trunk Sewer
- Storm Sewer
- Proposed 33" Sewer Replacement
- Sanitary Sewer

N

0 65 130

Feet

Jacobs

Map Prepared: 02/20/2023

Existing section of 18" sewer to be replaced with 33" sewer

Existing 33" sewer to be replaced

8-in Sanitary

0-in Sanitary

20-in Combined

24-in Sanitary

33-in Trunk

36-in Trunk

21-in Sanitary

24-in Sanitary

18-in Trunk

33-in New Trunk

15-in Combined

14-in Combined

24-in Combined

12-in Combined

0-in Storm

33-in Trunk

Hiawatha Blvd W

Lodi St

Destiny USA Dr

81

24A-B-23

2.3 Maintenance Update

2.3.1 Green Infrastructure

Landscape Maintenance at Leavenworth Park

In 2022, O&M continued to be performed on green infrastructure projects that were implemented to reduce CSO discharges in Onondaga County. Green infrastructure technologies typically do not have any specific operating requirements; however, regular maintenance activity is required for most green infrastructure technologies to keep them functioning in an effective manner. The County uses the Save the Rain Program Green Infrastructure Maintenance Manual, dated April 2013, to guide the green infrastructure maintenance program. The County continues to track its maintenance responsibilities using Maximo, its asset management software program. Maintenance of green infrastructure practices is performed at each installation. For each green infrastructure project installed, a responsible party has been assigned to maintain the asset. In some locations, multiple parties work together to ensure the facility is not only functioning as intended but is also aesthetically pleasing. The approach for maintenance of green infrastructure is a tiered approach:

- The first minimum tier is safety; is it safe or a potential hazard for the public and/or maintenance personnel?
- The second tier is functionality; is the stormwater facility providing the intended function storing, releasing, and treating stormwater?
- The third tier is aesthetics, which is subjective. Much of the green infrastructure that has been installed is meant to mimic nature and as such functions as nature. Nature, and some green infrastructure, is generally not neat and sometimes does not appear to be maintained. This is by design, as some of the green infrastructure projects are not highly manicured, to mimic nature, and this does not diminish the stormwater capture effectiveness or aesthetic value.

This tiered approach allows the County and its partners to prioritize maintenance across the completed green infrastructure projects to date and also allows for a greater focus on the sites that require additional attention throughout the year.

The County provides maintenance using a variety of traditional and creative workforces:

- Filter Inserts – An outside contractor that is procured through the County's Purchasing Department utilizes a vacuum truck that allows for cleaning without the actual removal of the insert from the catch basin. Replacement and standardization of filter insert units to a single model continues.

- Landscaping– A combination of County staff, property landowners (i.e., City of Syracuse, Onondaga County Libraries, etc.), volunteers, and Onondaga Earth Corps (through a County contract) complete mulching, pruning, weeding, and other plant maintenance.

- Porous Pavement Maintenance – An outside contractor that is procured through the County's Purchasing Department is utilized to conduct this maintenance activity.

- Green Roof Maintenance – An outside contractor that is procured through the County's Purchasing Department is utilized to conduct green roof maintenance.

- Drainage System Maintenance – County staff vacuum and jet clean underground piping systems connected to green infrastructure projects to ensure their functionality utilizing their fleet of standard sewer maintenance vehicles.

For green infrastructure projects on public property, maintenance is performed by the County, City, their contractors, and/or volunteers. The County completes monthly maintenance inspections of each site during the growing season to determine maintenance needs. Table 2-4 summarizes the required maintenance tasks and responsibilities for the green infrastructure projects completed in 2022 that were municipally procured.

Table 2-4: Maintenance Responsibilities for Municipally Procured Green Infrastructure Projects Completed in 2022

Project ID	Project Name	Maintenance Requirements	Contractor Maintenance End Date
C-272	West Genesee Street Green Street	Drainage – County	N/A
C-295	East Water Street Road Reconstruction	Drainage – County	N/A

Maintenance for green infrastructure projects on private property under the GIF program is provided by the Owner, with the County providing general oversight for compliance. The County inspects these projects every 3 to 5 years. If, in the County's opinion, a GIF project owner is neglecting maintenance to the point that the project is no longer functioning as designed, the County reserves the contractual right to complete the required maintenance and back-charge the property owner for the costs. The maintenance program is a key element in the long-term success of the GIF program.

The County's goal is that the green infrastructure systems prevent stormwater from entering into the combined sewer system as designed. "Volunteer" vegetation (i.e., vegetation that was not originally intended to grow in this location) in green infrastructure practices is the responsibility of the property owner to address to their level of maintenance service satisfaction. Volunteer species, while possibly being unsightly, are commonly deliberately allowed to grow and will provide similar stormwater treatment capacity as planted species. These volunteer species will not affect the longevity and continued effectiveness of the green infrastructure practices.

2.3.2 Gray Infrastructure Maintenance

This section provides a summary of the Operation and Maintenance (O&M) requirements for gray infrastructure implemented to abate CSO discharges in Onondaga County. The County tracks and schedules O&M tasks using its Maximo software system. Below is a summary of O&M requirements by project type consistent with the USEPA's suggested proper O&M of combined sewer systems (CSSs) and associated facilities. Appendix A, Combined Sewer Overflows Annual Report, includes additional information on the County's CSO maintenance and inspection procedures.

- Sewer Separation - Typical O&M for sanitary and storm sewers includes routine inspections and cleaning of the sewers. When combined sewers are separated within the City of Syracuse, the City owns the resulting separate sanitary sewers and separate storm sewers. As a result, through an Inter-Municipal Agreement (IMA) between the City and the County, the City is responsible for the O&M of the separated basins.

The County continues to maintain their installed CSO abatement infrastructure within the confines of their maintenance program

- Interceptor/CSO Conveyance Piping - The County applies a tiered approach to its interceptor pipelines and CSO conveyance sewers. Newly-installed large diameter pipelines have their flushing chambers exercised and maintained after storm events. The County inspects and maintains siphons, CSO regulators, and regulator sewers connected to existing or new smaller diameter pipelines monthly. In addition, the County visually inspects CSO conveyance and interceptor manholes for grit deposition, blockages, and deterioration. If excessive grit or debris is present, a crew removes the deposits, followed by cleaning and flushing of the sewer. If the problem persists, the County televises the section of sewer and repairs it if necessary. The grit chambers located along the interceptor sewer alignments are on a yearly cleaning and maintenance schedule.

- Maintenance of CSO storage and/or treatment facilities during dry weather conditions includes:

  - Pull and service pumps
  - Inspect, lubricate, and exercise mechanical equipment
  - Calibrate flow metering/measuring devices
  - Adjust limits on valves/actuators
  - Service air handling units
  - Calibrate gas detectors
  - Perform house and groundskeeping
  - Prepare and review staffing plans

- Operation of CSO storage and/or treatment facilities, pre-wet weather event includes:

  - Plan staffing
  - Check condition/charge chemical feed system (where applicable)
  - Record baseline levels and readings
  - Check SCADA system for proper operation
  - Check equipment fluid levels

- Operation of CSO storage and/or treatment facilities during wet weather events includes:

  - Monitor flow levels
  - Record start and end times and other data on operational logs
  - Monitor and operate equipment
  - Dewater

- Operation of CSO storage and/or treatment facilities, post-wet weather event includes:

  - Flush and clean basins and wet wells
  - Flush and clean equipment
  - Remove grit and floatable material
  - Compile/report data
  - Debrief staff
  - Lubricate equipment
  - Check fluid levels

- O&M of floatable control facilities includes:

  - Routine visual inspection and cleaning of the facility, specifically the floatables removal equipment
  - Routine cleaning of associated regulators and chambers
  - Removal and replacement of net bags following storm events (where applicable)
  - Removal, cleaning and reinsertion of trash racks following storm events (where applicable)

The Onondaga Earth Corps and other volunteer staff remain a key partner for delivering landscape maintenance for the County.

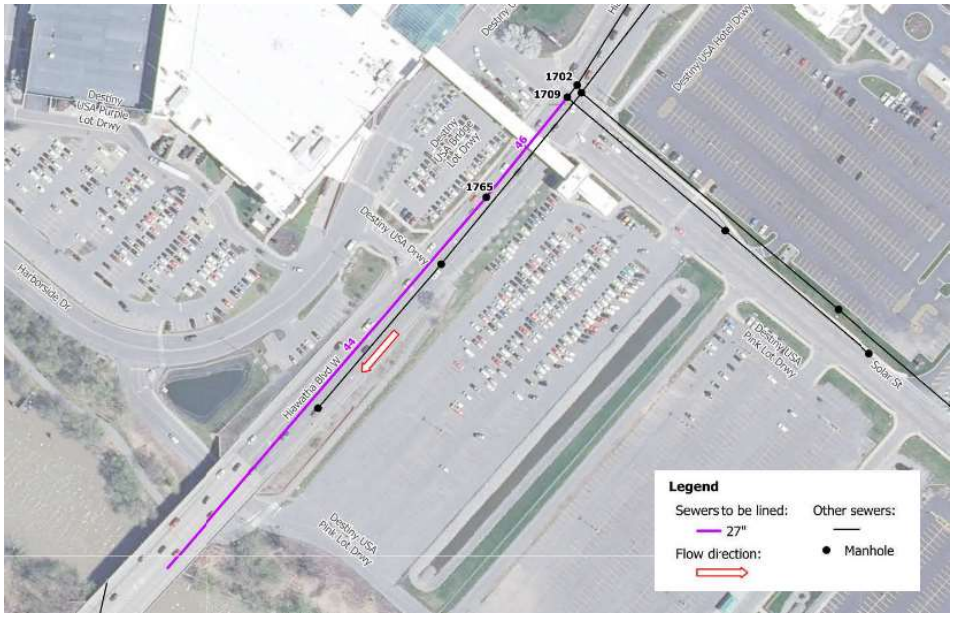
3. SWMM Update

The County has maintained a stormwater management model (SWMM) of the CSS using EPA Stormwater Management Model, a USEPA software package, since 2012. The SWMM is one of the primary tools for estimating CSO volume and frequency as well as forecasting the effectiveness of potential system improvements. The County completed an update to the model in 2022 using USEPA Stormwater Management Model software version 5.1.010. This update of the model is now referred to as the "2022 conditions model."

3.1 2022 Conditions Model Update

The 2022 conditions model was developed by updating the 2021 conditions model to reflect changes to the system during 2022. The 2022 conditions model updates were based on design and as-built drawings for recently completed projects and other information described in the following summary:

- Five green infrastructure projects completed in 2022 (Table 2-1)
- Three gray infrastructure projects completed in 2022 (Table 2-2)
- Update to the CSO 067/Newell Street Vortex Regulator pipe network based on a survey completed in 2022



Hiawatha Boulevard Combined Sewer Lining Limits

3.1.1 2022 Conditions Model Results

The estimated CSO performance for the typical year (1991) rainfall was calculated using the 2022 conditions model. The typical year model results are based on the simulation of multiple rainfall events and dry periods spanning an entire year. The typical year was selected by the County with approval by NYSDEC as a method to characterize the average long-term performance of the system, assess improvements that will be made with its facility plans, and as the basis for determining CSO capture and elimination. The typical year results are not applicable for, nor were they intended to be compared to, any specific year.

Additionally, the CSO performance was calculated for the 1-year, 2-hour design storm (a single storm event with 1.0 inches of total rainfall occuring over the span of 2 hours). The design storm is used by the County to size individual CSO control projects. The design storm is also used to determine the status of each CSO outfall. Closed is defined as a CSO outfall that no longer activates under any storm event, including extreme events. Operational CSOs are open outfalls that discharge during the 1-year, 2-hour design storm. Abated CSOs do not discharge for storms up to the 1-year, 2-hour design storm, however they are still open outfalls and may discharge during larger storm events. CSO discharges equal to or less than 0.1 MG are considered the limit of model accuracy or model "noise" in the industry and are not considered to be actual CSO discharges. Abated CSO outfalls remain open for the safety and protection of the public and municipality's infastructure during extreme storm events, including systemwide surface flooding conditions where sewer overflows are unavoidable.

The CSO performance results for the typical year and the design storm are shown in Table 3-1. The 2022 conditions model predicts a total CSO discharge volume of 107.8 MG for the typical year. There was no change in CSO outfall status for any CSOs in 2022.

Table 3-1. 2022 Conditions Model CSO Volume Results for the Typical Year and the 1-year, 2-hour Design Storm

Receiving Waterbody	CSO Outfall Number	Typical Year CSO Annual Volume (MG)	Typical Year Activation Frequency (number/yr)	1-Year, 2-Hour Design Storm CSO Volume (MG)	CSO Status
Harbor Brook	003	0	0	0	Abated
	004	0	0	0	Abated
	04A (LHBS)	0	0	0	Abated
	005	0.5	3	0	Abated
	006	0	0	0	Abated
	06A	0.1	1	0	Abated
	007	2.7	8	0.2	Operational
	009	1.8	6	0.4	Operational
	010	0	0	0.1	Abated[1]
	011	0.6	5	0.1	Operational
	014	0.6	3	0.3	Operational
	015	0.3	2	0.3	Operational
	017	0	0	0	Abated
	018	0	0	0	Abated
	63A	0	0	0	Abated
	078	0	0	0	Abated
Onondaga Creek	020	21.1	16	2.7	Operational
	021	41.5	27	2.9	Operational
	027	17.5	18	1.3	Operational
	028	0.4	3	0	Abated
	029	0.8	5	0.2	Operational

Table 3-1. 2022 Conditions Model CSO Volume Results for the Typical Year and the 1-year, 2-hour Design Storm

Receiving Waterbody	CSO Outfall Number	Typical Year CSO Annual Volume (MG)	Typical Year Activation Frequency (number/yr)	1-Year, 2-Hour Design Storm CSO Volume (MG)	CSO Status
Onondaga Creek (Cont'd)	030	0	0	0	Abated
	031	0	0	0	Abated
	032	0	0	0	Abated
	033	0	0	0	Abated
	33A (CSF)	9.6	3	0	Abated
	034	0	0	0	Abated
	035	0	0	0	Abated
	036	0	0	0	Abated
	037	0	0	0	Abated
	039	0	0	0	Abated
	042	0	0	0	Abated
	044	0	0	0	Abated
	052	0.3	3	0	Abated
	60M (060/077)	0	0	0	Abated
	066	4.6	14	0.4	Operational
	067	0	0	0	Abated
	071	0	0	0	Abated
	075	0	0	0	Abated
	076	0	0	0	Abated
	080	0.9	2	0	Abated
Ley Creek	073	4.4	9	1.2	Operational
Onondaga Lake	01B (Metro)	0	0	0	Abated
Total Volume / Max Activations		**107.8**	**27**	**10.1**	-

[1] CSO 010 is labeled as abated because it has 0 discharges and 0 volume for the Typical Year and the discharge volume for the design storm (0.1 MG) is minimal.

3.2 Comparison of 2022 CSO Meter Data to SWMM Estimates

The CSO volumes and frequencies estimated by the County's 2022 conditions SWMM model for the 2022 rainfall were compared to 2022 CSO meter data, as required by the Order. The comparison was performed at eleven CSO outfalls. Results of the comparison are presented in Table 3-2 and discussed below. Details on the exclusion of select meter data for the comparison are provided in Section 3.2.1.

Table 3-2. Comparison of 2022 Annual SWMM Results to Meter Data
CSOs with notable discrepancies are shown in bold font

CSO	SWMM Estimated 2022 Discharge Volume[1] (MG)	2022 Metered Discharge Volume[2] (MG)	Difference in 2022 Volume (SWMM-Actual)	Number of 2022 SWMM Estimated Discharge Events[1]	Number of 2022 Actual Metered Discharge Events[2]	Difference in 2022 Frequency (SWMM-Actual)
04A	0.00	0.36	-0.36	1	1	0
014	**1.44**	**0.38**	**1.06**	**6**	**3**	**3**
018	0.00	0.69	-0.69	0	3	-3
027	**12.99**	**10.94**	**2.06**	**22**	**22**	**0**
33A	**9.24**	**2.41**	**6.83**	4	1	3
60M (060/077)	0.07	0.72	-0.64	1	2	-1
066	**4.80**	**9.77**	**-4.97**	**19**	**20**	**-1**
067	0.00	0.00	0.00	0	0	0
073	5.78	5.28	0.50	9	12	-3
078	0.23	0.77	-0.54	3	3	0
080	0.51	1.24	-0.73	1	2	-1

[1] SWMM results based on the 2022 precipitation record from Metro WWTP
[2] Refer to Section 3.2.1 for discussion on exclusion of select meter data. Note that the data used in the comparison does not include all the flow meter data reported in Table 4-2.

For seven of the eleven outfalls, the difference between the SWMM model and actual metered data was less than 1 MG for overflow volumes and less than or equal to 3 for activation frequency. Each of these seven outfalls were previously calibrated in SWMM. These results indicate that the County's SWMM is performing well in estimating conditions at these metered outfalls.

Differences in SWMM estimates and actual metered data for the remaining four outfalls assessed in the comparison are explained as follows:

- The SWMM slightly over-estimated the discharge volume and activation frequency from CSO 014. This CSO is planned to be recalibrated in the future per the Harbor Brook CSO SWMM Recalibration outlined in the approved Interim Corrective Measures Plan (ICMP).

- The SWMM over-estimated the discharge volume from CSO 027. Historically, flow metering at CSO 027 has been a challenge due to both configuration of the sewers and backflow from Onondaga Creek into the sewer during periods of heavier rain and/or snowmelt. Therefore, when the last calibration of CSO 027 was completed, additional conservatism was purposely built into the SWMM due to the challenges with obtaining accurate flow meter data. This CSO is planned to be re-calibrated when the Onondaga Creek CSO SWMM Recalibration occurs after completion of the I-81 project.
- The SWMM over-estimated the discharge volume and activation frequency from CSO 33A. This outfall is the overflow from the CSF. Flow that enters the CSF is stored in the facility until there is sufficient capacity in the MIS and at Metro to release it. During 2022, there were four events where the SWMM estimated stored volume was more than the actual volume stored volume during larger rain events, which in turn led to an over-estimate of overflow volume from the facility compared to actual meter data.

- The SWMM underestimated the discharge volume from CSO 066. This overflow has not been previously calibrated in the County's SWMM due to poor quality meter data caused by backflow conditions from Onondaga Creek and surcharge conditions within the CSO 066 sewer during overflow events. Further, the backflow conditions have the potential to increase the metered overflow volume from CSO 066. However, it is not possible to determine CSO overflow versus backflow volume from the metered data. Note that the County is progressing a CSO regulator modification project as noted in Section 2 (Table 2-3, project C-277) for future implementation to improve the connection of the CSO 066 sewer to the MIS and allow for accurate metering for a future calibration of CSO 066.

3.2.1 Data Selection for SWMM to Meter Data Comparison

Details related to the selection of meter data used for the 2022 SWMM to meter data comparison are as follows:

- CSOs that are treated and disinfected (074 and M01) were not included in this comparison.
- CSOs 020 and 021 are metered; however, the meter is located upstream of the floatables facilities serving both outfalls. When the floatables facilities are in use, sewer flows surcharge upstream of the floatables facilities creating erroneously high and inaccurate overflow volumes from the two outfalls. Metering at the actual 020 and 021 outfalls is not feasible due to access constraints and high Creek levels at the outfalls. Therefore, CSOs 020 and 021 were not included in the SWMM comparison analysis. The County is progressing a significant modification project to these two outfalls and floatables facilities that will be included in the I-81 renovation project as discussed in Section 2.
- CSO 044 was not included as there was single discharge through the outfall on June 16, 2022 due to an influent pump failure at the Midland Avenue Regional Treatment Facility (RTF). No other discharges occurred, and the SWMM did not calculate any discharges through the CSO 044 outfall. CSO 044 only activates in the event that the Midland Avenue RTF cannot take influent flow.
- CSO 052 was not included in this analysis due to an ongoing water main leak, resulting in unreliable meter data. The leak caused increased sewer flows, which at times cause overflows to occur at CSO 052 during lighter rain events or even during dry weather periods. Increased flows from the water main leak are not reflected in the SWMM simulations. For this reason, a direct comparison of SWMM estimates to metered data is not feasible. Note that the City of Syracuse repaired the leaking water main in January of 2023.
- The Harbor Brook CSO 018 Constructed Wetlands Storage and Treatment Facility is metered, however certain dates were excluded from the data comparison for this CSO due to equipment malfunctions or contributions of groundwater from the wetland that caused discharges that are not modeled in SWMM. Refer to Section 4 and the 2022 Quarterly Performance Reports for detailed information on these events.

- Data recorded on February 18, 2022 was excluded from the comparisons because multiple flow meters were impacted by freezing temperatures. The meter data collected on this date was not accurate and therefore would not contribute to a meaningful comparison to SWMM estimates.
- Data recorded between November 11, 2022 and November 12, 2022 was excluded from the comparisons. A very large storm occurred on these dates that resulted in a larger amount of total rainfall than the SWMM model was calibrated to during the most recent calibrations. The SWMM data for CSO volumes on these dates does not provide an accurate representation of metered data and was excluded from this comparison.

Construction of the underground detention basins at the JMA Parking Lot (GIF #180)

- Discharge from CSO 080 is affected by high water levels in Onondaga Creek during larger storms that result in backflow or restriction of discharge from the outfalls. The level sensor downstream of the CSO 080 outfall was used to assess high creek levels. When the level sensor recorded 6 feet or greater of water elevation, the creek level is known to be at an elevation that is causing backflow and/or restricting CSO discharge. This occurred three times in 2022: on February 18, September 19, and November 12. For this reason, an accurate comparison of SWMM estimates to actual metered data is not feasible at CSO 080 on these dates, and these data points have been excluded from the data presented in Table 3-2.

3.3 Annual Capture Results

The annual capture is defined as the percentage of the total volume of combined sewage collected by the system during precipitation on a system-wide annual average basis. This metric was used by the County to assess the progress of CSO reduction since the start of the now closed ACJ. Although not a metric required to be reported while under the State Consent Order that the County entered into with the NYSDEC in 2021, the County will continue to report the annual capture percentage to summarize overall progress in abating CSOs. In 2022, the total volume discharged across all CSOs for the 1991 typical year storms was 107.8 MG, a decrease of 3.8 MG from 2021. The estimated percent capture remained equal to the estimated percent capture in 2021 at 98.2 percent.

The capture results based on the 2022 conditions model are shown in Table 3-3. Column 4 of Table 3-3 shows the total estimated volume of combined sewage captured for the typical year (1991) compared to conditions in 2009, the year when implementation of green infrastructure started. The annual combined sewage volume capture for the typical year increased to 661 MG in 2022 from 657 MG in 2021, a 4 MG increase. This capture volume represents a combined contribution from various green and gray infrastructure projects and other CSS modifications completed since 2009.

Table 3-3. 2022 Annual Capture Results[1]

Receiving Waterbody	Average Annual Combined Sewage Volume Conveyed to Metro for Treatment (MG)[2]	Additional Average Annual Combined Sewage Volume Captured by Green/Gray Infrastructure or Eliminated (MG)[4]			Total Annual Combined Sewage Volume Captured or Eliminated (MG)[4]	CSO to Creek/Brook (MG)[5]	Total Annual Combined Sewage Volume Generated by the Metro Combined Sewer Service Area (MG)[2]	Percent Capture of CSS Volume
		Green[3]	Gray	Total				
	[1]	[2]	[3] = [4] – [2]	[4] = [7] – [1] – [6]	[5] = [1] + [4]	[6]	[7]	[8] = [5]/[7]
Harbor Brook	994	47	141	188	1,182	7	1,189	99.4%
Onondaga Creek	4,080	161	302	463	4,543	97	4,640	97.9%
Ley Creek	260	0	10	10	270	4	274	98.4%
Total	**5,334**	**208**	**453**	**661**	**5,995**	**108**	**6,103**	**98.2%**

[1] SWMM results based on the typical year (1991) precipitation record.

[2] Data source for [1] and [7]: Typical year results from the pre-green infrastructure conditions (2009) model.

[3] Data source for [2]: Typical year results for green infrastructure performance from the calibrated 2022 conditions model. These are runoff (or inflow) reductions due to implementation of green infrastructure as summarized in Table 2-1 for each individual green infrastructure project.

[4] Eliminated by sewer separation.

[5] Data source for [6]: Typical year results from the calibrated 2022 conditions model. No headworks discharge is predicted from Outfall 01B at Metro during the typical year. Discharges from Outfall 002 are disinfected primary effluent bypassing secondary unit processes and are considered as treated effluent per EPA CSO policy; therefore, they are not included as CSO volume.

4. CSO Monitoring Program

This section includes the following topics relating to the County's 2022 CSO Monitoring Program:

- CSO Flow Metering Program (Section 4.1)
- Focused Post-Construction Compliance Monitoring Program (Section 4.2)
  - CSO Water Quality Monitoring (Section 4.2.1)
  - CSO Tributary Water Quality Monitoring (Section 4.2.2)
  - Water Quality Data Review (Section 4.2.3)
- Floatables Control Plan Update (Section 4.3)
- Best Management Practices (BMPs) for CSO Control (Section 4.4)

4.1. CSO Flow Metering Program

The purpose of the CSO flow metering effort is to maintain the accuracy of the County's SWMM, which is used for the planning and design of CSO control measures and estimation of the County's CSO discharges. The County updates the SWMM annually and uses the flow data to verify, reconcile, and recalibrate (as necessary) SWMM assumptions, model coefficients, and projections.

4.1.1. Annual CSO Flow Meter Summary

In 2022, the County continued to maintain flow meters at eight CSOs where flow monitoring devices had previously been installed. Table 4-1 lists the location, receiving water, type of metering device(s), and 2022 status or changes for each representative CSO flow monitor.

Table 4-1. CSO Flow Monitoring Locations

Outfall	Receiving Water	Metering Device(s)	2022 Status and Changes
014	Harbor Brook	Flo-dar A/V Flow Meter A/V Sensor (on CSO pipe)	Installed, no change
018	Harbor Brook	Ultrasonic Level Sensor	Installed, no change
027	Onondaga Creek	Flo-dar A/V Flow Meter (regulator pipe) A/V Sensor (CSO pipe)	Installed, no change
044	Onondaga Creek	Pressure Transducer	Installed, no change
052	Onondaga Creek	Flo-dar A/V Flow Meter A/V Sensor (CSO pipe) Ultrasonic level sensor (CSO pipe)	Installed, no change
60M (060/077)	Onondaga Creek	Flo-dar A/V Flow Meter A/V Sensor (CSO pipe)	Installed, no change
078	Harbor Brook	Flo-dar A/ V Flow Meter Ultrasonic Level Sensor	Installed, no change
080	Onondaga Creek	Flo-dar A/V Flow Meter A/V Sensor (floor of channel)	Installed, no change

The monitoring data for the CSOs listed in Table 4-1, except 018 and 044, are transmitted wirelessly and include depth in inches, velocity in feet per second (fps), and flow rate in gallons per minute (gpm) at each site, recorded at 5-minute intervals. The meter for CSO 018 is downloaded manually and provides depth in inches, used to calculate the discharge volume using weir flow equations. The CSO 044 flow is monitored through the County SCADA system and provides depth in inches recorded at 1-minute intervals.

Table 4-2 provides a summary of the flow data collected from each meter in 2022. Tables and graphs showing the daily CSO overflow volume and rainfall data for each metered CSO are included in the 2022 Combined Sewer Overflows Annual Report, which is provided as Appendix A.

Table 4-2. 2022 Annual CSO Flow Metering Data

Outfall	January	February	March	April	May	June	July	August	September	October	November	December	Total
Rainfall (in)	1.59	3.05	2.77	3.81	2.20	3.56	2.84	5.32	4.40	1.08	4.20	3.09	38.01
Overflow (Gallons)													
014	0	81,459	1,559	80	1,998	64,715	2,312	206,700	123,442	0	154,655	422	637,342
018 [1]	0	0	0	0	0	0	0	0	0	0	0	0	0
027	0	1,804,609	508,867	1,784,554	772,391	1,907,013	1,259,516	2,613,141	1,746,670	323,904	403,833	16,419	13,140,917
044 [2]	0	0	0	0	0	18,275	0	0	0	0	0	0	18,275
052[3]	11,119,147	47,383,740	18,614,902	298,088	263,965	802,215	377,016	1,077,058	1431182	155,320	1,682,896	225,668	84,082,036
60M (060/077)	0	18,047	17,196	0	0	436,190	39,356	61,086	339,877	0	63,809	0	975,561
078	32	137,802	59,076	42,279	45,586	193,483	95,564	493,735	400,729	0	236,471	13	1,704,770
080 [4]	0	3,433,127	0	0	0	1,126,398	0	111,076	1,799,907	0	4,789,8013	0	11,260,321
Frequency (Number of Overflow Events)													
014	0	1	2	2	3	5	4	5	3	0	2	2	29
018	0	0	0	0	0	0	0	0	0	0	0	0	0
027	0	5	2	2	3	5	3	7	3	1	3	1	35
044	0	0	0	0	0	1	0	0	0	0	0	0	0
052	13	28	10	2	4	5	5	12	8	2	6	11	106
60M (060/077)	0	1	1	0	0	2	1	1	2	0	1	0	9
078	1	2	2	1	2	2	3	7	3	0	2	1	26
080	0	1	0	0	0	2	0	2	1	0	1	0	7
Duration (Hours)													
014	0	2.16	0	0.16	0.5	1.33	1.25	5.75	1.66	0	1.0	1.16	15.17
018	0	0	0	0	0	0	0	0	0	0	0	0	0
027	0	12.25	2.67	12.25	5.08	7.83	4.92	8.92	9.17	2.42	2.42	1.33	70.25
044	0	0	0	0	0	.23	0	0	0	0	0	0	0
052	257.9	580.2	185.6	11.4	2.92	6.17	2.25	9.42	9.0	2.08	18.75	110.3	1196
60M (060/077)	0	.25	.16	0	0	0.92	0.33	0.33	1.16	0	0.58	0	3.75
078	0	1.92	0.58	1.16	0.5	1	0.75	2.67	2.41	0	3.25	0.18	14.42
080	0	1.28	0	0	0	1.08	0	0.2	0.82	0	2.92	0	4.3

[1] CSO 018 discharge represents flows bypassing the Harbor Brook Constructed Wetland Storage and Treatment Facility and is not indicative of effluent flow into Harbor Brook from the facility to be consistent with previous Annual Plan Reports.

[2]CSO 044 discharged on 6/16/22 due to the Midland RTF influent pumps failing to run as designed.

[3]CSO 052 flowmeter data was impacted by water main leak throughout the year and are flagged as suspect. AV sensor was also replaced on 3/9/22.

[4]CSO 080 flowmeter data was impacted by high creek levels on 2/18/22 and 11/12/22; data flagged as suspect.

4.1.2. Metro Headworks Bypass Summary

To prevent damage to the treatment facility during extreme wet weather events, a portion of the Metro influent flow can bypass the headworks and discharge to Onondaga Lake. The Metro Headworks Bypass (01B) is a permitted discharge and is considered a CSO. Based on the long-term simulation results of the calibrated SWMM for the 1991 typical year rainfall conditions, there are no events that cause a wet weather bypass at the Metro headworks during the typical year (1991). This implies that the observed headworks bypasses are limited to storm events exceeding the largest event recorded in 1991. However, other circumstances can lead to headworks bypasses that are not related to the size of wet weather events. Construction and maintenance activities can temporarily reduce the plant capacity. Equipment failures and unplanned emergency maintenance activities can also lead to headworks bypasses.

Two headworks bypass events occurred in 2022. One of these occurred during the disinfection season and one of occurred due to a reduced capacity at the plant due to a temporary power failure. The summary of events can be seen in Table 4-3.

Table 4-3. Summary of Metro Headworks Bypass Events (2022)

Year	Total Rainfall (Inches)[1]	No. of Events[2]	No. During Disinfection Season	No. Due to Reduced Capacity	Event Duration (Hours)			Event Volume (MG)			Total Bypass Volume (MG)
					Ave	Min	Max	Ave	Min	Max	
2022	38.01	2	1	2	0.18	0.02	0.33	0.23	0.00047	0.46	0.46

[1] Rainfall data is from the Metro rain gauge.

[2] The March 21, 2012 permit renewal revised the definition of a bypass event from "A bypass event starts at the moment wastewater overflows the bypass tank and continues until 24 hours from that time" to "the moment wastewater overflows the bypass tank and continues until the overflow from the bypass tank stops".

4.2. Focused Post-Construction Compliance Monitoring Program

In accordance with the 2009 ACJ Fourth Stipulation, the County developed a Post-Construction Compliance Monitoring Program (PCCM), which the County implemented from 2015 through 2018. The goals of the PCCM sampling program were to monitor the water quality of the CSO discharges and the receiving waters during wet weather in order to:

1) Evaluate the effectiveness of the County's green and gray CSO controls

2) Assess whether AWQS are being met

3) Determine whether the remaining CSOs "cause" or "contribute" to violations of the AWQS

From 2015, a total of 12 PCCM events were conducted (seven on Harbor Brook and five on Onondaga Creek). The monitoring targeted storms with rainfall intensities of at least 0.35 inches of rain per hour. Results of the PCCM sampling events indicated that in-stream WQS violations of bacteria (fecal coliform) continued during wet weather events. In order to address the violations of AWQS in the CSO receiving tributaries, in violation of ECL§17-0501, the County entered into an Order on Consent in March 2021. The Order became effective in October 2021, following the termination of the ACJ, and required the County to implement a Focused PCCM.

From 2019 through 2022 (post-AMP), the County continued to implement a water quality monitoring program focused on the three CSO tributaries (Onondaga Creek, Harbor Brook, and Ley Creek) to support the remaining obligations of the ACJ and specific objectives of the Focused PCCM, as required of the Order:

1) Supporting the Use Attainability Analyses (UAAs) for Fecal Coliform

2) Continued tracking of water quality improvements; and

3) Supporting the maintenance of the County's SWMM

Section 4.2.1 (CSO Water Quality Monitoring) and Section 4.2.2 (CSO Tributary Water Quality Monitoring) provide a summary of monitoring conducted in 2022 to continue tracking water quality improvements.

Section 4.2.3 (Water Quality Data Review) provides an update on the status of the Water Quality Data Review related task. This task entails a review of the County's existing data and subsequent determination of any data gaps/needs for completion of the UAA Reports in accordance with Schedule B (Schedule of Deliverables) Order on Consent.

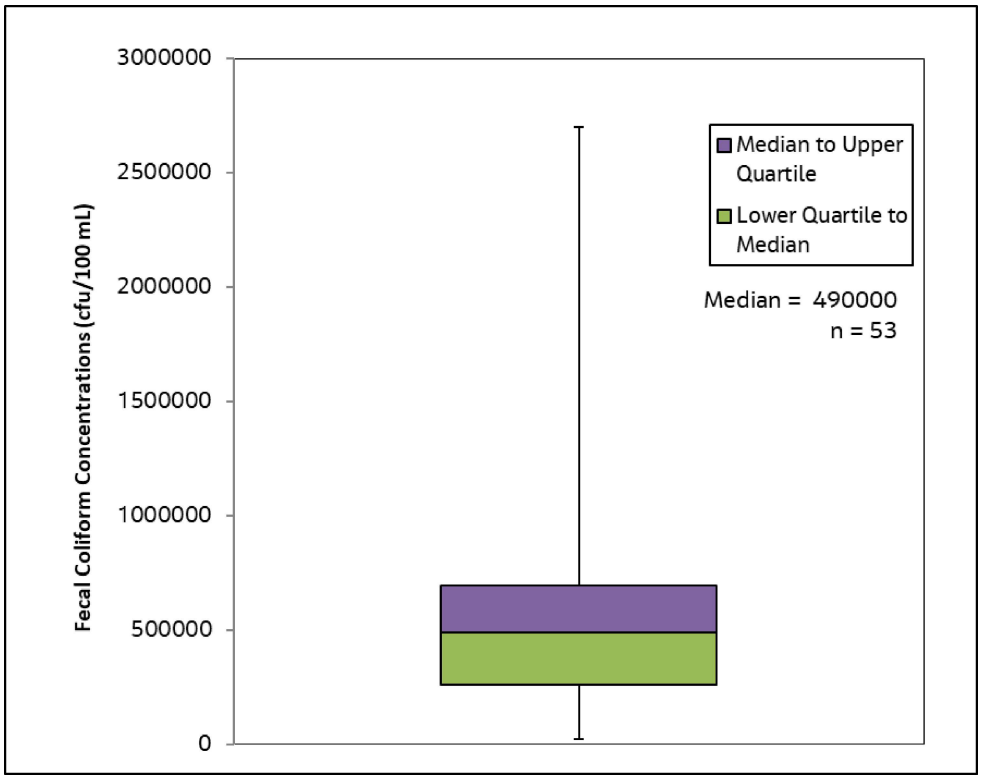
4.2.1. CSO Water Quality Monitoring

To assess contributions of CSOs to in-stream water quality and to determine whether the remaining CSOs are "causing" or "contributing" to violations of the AWQS, water quality of CSOs (specifically fecal coliform) was characterized. The County's approach to characterizing CSO water quality entailed collection of samples from the influent chambers of multiple CSO storage and regional treatment facilities during wet weather. This sampling approach was used due to concerns related to safe access to individual CSO outfalls during discharge for collection of grab fecal coliform samples during wet weather. This approach averages fecal coliform concentrations of multiple CSOs and tends to truncate the range of CSO concentrations.

The median fecal coliform concentration of a total of 53 CSO facility influent samples collected during 2015 through 2019 from four of the County's CSO facilities[1] was **490,000 cfu/100 mL** (Figure 4-1). This value is considered generally representative of fecal coliform levels in the County's untreated CSO discharges on a system-wide volume-weighted basis. No additional samples from CSO facility influent chambers were collected since 2019.

[1] Clinton Storage Facility (SF), Lower Harbor Brook Storage Facility (SF), Midland Regional Treatment Facility (RTF), and Maltbie Floatables Control Facility (FCF)

Figure 4-1. CSO Facility Influent Fecal Coliform Concentrations (2015-2019)



The median fecal coliform concentration was used to determine fecal coliform estimated loads from CSOs during PCCM sampling events. Over the duration of the PCCM sampling events conducted in 2017, the product of CSO measured flow as available (or SWMM estimates) and a fecal coliform concentration of 460,000 cfu/100 mL (median value of 47 CSO facility influent samples collected during 2015-2017 from the Clinton SF, Lower Harbor Brook SF, Maltbie FCF, and Midland RTF) was used. These estimated CSO loads were compared to in-stream fecal coliform loads to evaluate contributions from CSO discharges. Linear interpolation was used to develop 15-minute fecal coliform concentration estimates for periods between measurements. 15-minute loads were calculated as the product of these concentrations/estimates and 15-minute flows from the appropriate USGS gauges (Refer to 2017 AMP Annual Report, Appendix F-17 PCCM Event Summaries). Event mean concentrations (EMC) were calculated at in-stream locations as the total event load divided by the total event flow volume.

In addition to these influent chamber samples collected from multiple CSO facilities to represent fecal coliform levels of CSO discharges, monitoring of specific effluent overflow parameters (including fecal coliform) is required for each of the CSO facilities listed under the Metro SPDES Permit. The May 24, 2022, modified Metro SPDES Permit updated the seasonal effluent disinfection season. Effluent disinfection is now required from April 1 to October 31, which extends the disinfection season duration in accordance with the SPDES permit by 16 days. The two CSO regional treatment facilities (Hiawatha and Midland) therefore require effluent disinfection from April 1 through October 31.

Figure 4-2 summarizes the available fecal coliform results (number of samples (n) and median) of the CSO treatment facility overflow samples, as reported in the quarterly CSO facility performance reports (QPRs). Results of samples collected from the influent chambers of CSO facilities are also included in this figure for

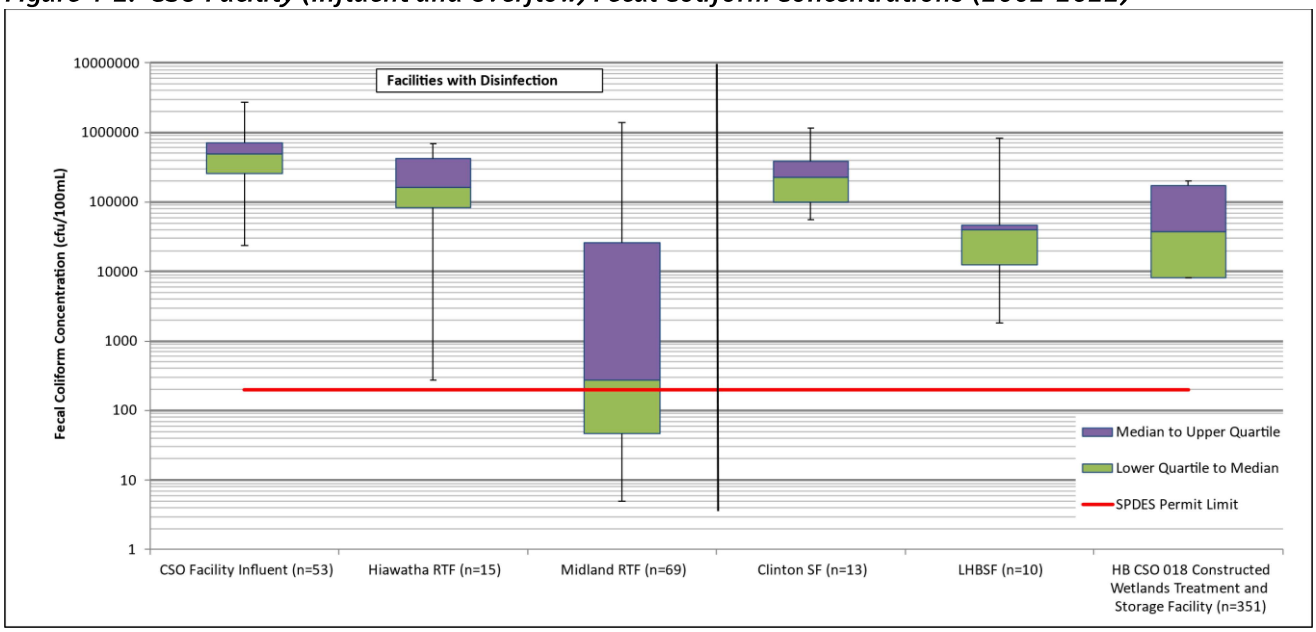
reference. The SPDES permit specifies fecal coliform limits per event (Geometric Mean of 200 cfu/100 mL per Event) for the two (2) CSO effluent disinfection facilities from April 1 to October 31. Overflow monitoring only is required for fecal coliform for the Lower Harbor Brook SF, Clinton SF and the HB CSO 018 Constructed Wetlands Storage & Treatment Facility (from April 1 to October 31).

Overflow samples were collected from the following CSO facilities:

1) Hiawatha RTF (2002-2022)
2) Midland RTF (2009-2022)
3) Clinton SF (2015-2022)
4) Lower Harbor Brook SF (2015-2022) and
5) Harbor Brook CSO 018 Constructed Wetlands Storage & Treatment Facility (2015-2022)

The median fecal coliform concentration of a total of 458 CSO overflow samples collected from the five CSO facilities was **33,000 cfu/100 mL**.

Figure 4-2. CSO Facility (Influent and Overflow) Fecal Coliform Concentrations (2002-2022)



4.2.2. CSO Tributary Water Quality Monitoring

The objectives of the 2022 CSO Tributary Water Quality Monitoring Program include:

1) Supporting a continued compliance assessment of fecal coliform and additional parameters, as referenced in the NYS Section 303(d) Listing and the NYS Water Quality Standards and Guidance Values (NYSDEC TOGS 1.1.1).

2) Tracking long-term fecal coliform trends to continue evaluating the effectiveness of the additional infrastructure projects designed to further mitigate the impacts of the remaining operational CSOs.

Sampling was scheduled biweekly from January through December 2022. To provide data for evaluating receiving water impacts and effectiveness of CSO controls and during dry weather, samples collected in 2022 captured the following conditions:

- Dry-weather events
- Wet-weather events during which CSOs did not occur
- Wet-weather events during which a CSO occurred

The long-term sites of the County's tributary water quality monitoring program were retained and include locations upstream and downstream of CSOs and urban segments of the sub-watersheds (Figure 4-3):

1) Onondaga Creek at Tully Farms Road (upstream of Dorwin Avenue):

   This sampling site was added in 2015 by WEP as a reference site.

   Note: In 2021, samples were collected at the Onondaga Creek at Webster Road (located approximately 0.4 miles upstream of the Tully Farms Road location due to construction related bridge closure) as an alternate site from July 7, 2021, through September 8, 2021.

2) Onondaga Creek at Dorwin Avenue (upstream of CSOs)

3) Onondaga Creek at Kirkpatrick Street (downstream of CSOs)

4) Harbor Brook at Velasko Road (upstream of CSOs)

5) Harbor Brook at Hiawatha Boulevard (downstream of CSOs)

6) Ley Creek at Thompson Road (upstream of CSOs):

   This sampling site was added at NYSDEC's request in 2019 at a location upstream of the two Ley Creek CSOs (operational CSO 073 and abated CSO 074) to isolate non-CSO contributions to Ley Creek.

7) Ley Creek at Park Street (downstream of CSOs)

The following parameters were retained as part of the 2022 sampling program:

- Fecal Coliform
- Dissolved and Total-Mercury
- Total Phosphorus
- Total Dissolved Solids
- Turbidity
- Ammonia-N (NH_3-N)
- Floatables

On September 27, 2022, NYSDEC approved the County's revised Interim Corrective Measures Plan (dated September 15, 2022), as required by the Order, which included the following proposed modifications to the Tributary Sampling Program:

1) Metro Effluent: Discontinue sampling of Metro Effluent/Bypass sampling as part of the biweekly tributary sampling events. Metro Effluent samples were collected historically on the same day of the tributary samples to estimate and report daily/annual loads to Onondaga Lake for the Onondaga Lake/AMP Annual Reports. Loads were no longer reported following the completion of the ACJ required AMP in 2018.

2) Total-Hg, Dissolved-Hg: Discontinue quarterly Mercury sampling (Total and Dissolved), as it is not considered to be a CSO related parameter and is not included as a pollutant in the 303(d) list of NYS Impaired Waters for the CSO waterbodies.

Sampling of Harbor Brook at Velasko Road

Ley Creek Sampling Location: Park St

Onondaga Creek Sampling Location: Kirkpatrick St

Ley Creek Sampling Location: Thompson Rd

Harbor Brook Sampling Location: Hiawatha Blvd

Harbor Brook Sampling Location: Velasko Rd

Onondaga Creek Sampling Location: Tully Farms Rd

Onondaga Creek Sampling Location: Webster Rd

Onondaga Creek Sampling Location: Dorwin Ave

Sampling locations 8 miles upstream of Dorwin Ave

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Figure 4-3
Sampling Locations

- Downstream of CSO Sample Location
- Upstream of CSO Sample Location
- Onondaga County Waterways
- Enclosed Portion of Harbor Brook
- CSO Boundary

Receiving Water

- Harbor Brook
- Ley Creek
- Onondaga Creek
- Separated CSOs

N

0 2,000 4,000

Feet

Jacobs

Revised 02/09/2023

4.2.2.1. Tributary Compliance Summary

This section includes an assessment of compliance with the Water Quality Standards and Guidance Values (NYSDEC TOGS 1.1.1). Specific NYS water quality standards used to assess the extent to which CSO abatement actions are successful include the following (as originally referenced in the ACJ):

- Dissolved Oxygen: 6 NYCRR Section 703.3
- Ammonia: 6 NYCRR Section 703.5
- Phosphorus: 6 NYCRR Section 703.2
- Nitrogen: 6 NYCRR Section 703.2
- Bacteria: 6 NYCRR Section 703.4
- Floatable Solids: 6 NYCRR Section 703.2
- Turbidity: 6 NYCRR Section 703.2

Results of Onondaga County's monitoring program are among the primary data sets used to evaluate compliance with standards and use attainment. Table 4-3 includes a summary of the percent of observations in compliance with NYS Ambient Water Quality Standards from January through December 2022, for the sampling stations in the CSO affected tributaries. The percentages in red font indicate the compliance result is less than 100 percent. The 2022 tributary data indicate that the major tributaries were generally in compliance with AWQS for most monitored parameters. As in previous years, the primary exceptions continued to be total dissolved solids (TDS) and fecal coliform bacteria (FC).

Appendix B contains the 2022 Annual Water Quality Monitoring data (analytical and in-situ).

Table 4-4. 2022 Compliance Results for Onondaga Creek, Harbor Brook, and Ley Creek

Parameter	NYS AWQS Standard		2022 Compliance Results (n=number of samples)
	Numeric Standard	Narrative Standard	
Dissolved Oxygen 6 NYCRR Sec. 703.3	Instantaneous minimum of 4.0 milligrams per liter [mg/L])	-	OC @ Tully Farms (n=43):100 % OC @ Dorwin (n=45): 100% OC @ Kirkpatrick (n=45): 100% HB @ Velasko (n=44): 100% HB @ Hiawatha (n=45): 100% LC @ Thompson (n=46): 100% LC @ Park (n=44): 98%
pH 6 NYCRR Sec. 703.3	Shall not be less than 6.5 nor more than 8.5	-	OC @ Tully Farms (n=43): 100% OC @ Dorwin (n=45): 100% OC @ Kirkpatrick (n=44): 100% HB @ Velasko (n=45): 100% HB @ Hiawatha (n=45): 100% LC @ Thompson (n=46): 100% LC @ Park (n=42): 100%
Ammonia 6 NYCRR Sec. 703.5	Varies with pH and temperature	-	OC @ Tully Farms (n=22): 100% OC @ Dorwin (n=24): 100% OC @ Kirkpatrick (n=24):100% HB @ Velasko (n=24): 100% HB @ Hiawatha (n=24): 100% LC @ Thompson (n=22): 100% LC @ Park (n=21): 100%
Phosphorus and Nitrogen 6 NYCRR Sec. 703.2	-	None in amounts that will result in growths of algae, weeds and slimes that will impair the waters for their best usages.	Compliance could not be assessed, as the NYSDEC's nutrient compliance criteria for flowing waters is currently pending.
Bacteria[1] 6 NYCRR Sec. 703.4	The monthly geometric mean, from a minimum of five examinations, shall not exceed 200 colony forming units per 100 milliliters	-	OC @ Tully Farms (n=35): 29% OC @ Dorwin (n=35): 43% OC @ Kirkpatrick (n=35): 14% HB @ Velasko (n=35): 57% HB @ Hiawatha (n=35): 0% LC @ Thompson (n=38): 0% LC @ Park (n=38): 29%
Floatable Solids in CSO Discharges[2] 6 NYCRR Sec. 703.2 (Oil and Floating Substances)	-	No residue attributable to sewage, industrial wastes or other wastes, nor visible oil film nor globules of grease.	No sanitary related floatables were observed during the 2022 tributary sampling events.

Table 4-4. 2022 Compliance Results for Onondaga Creek, Harbor Brook, and Ley Creek

Parameter	NYS AWQS Standard		2022 Compliance Results (n=number of samples)
	Numeric Standard	Narrative Standard	
Turbidity 6 NYCRR Sec. 703.2	-	No increase that will cause a substantial visible contrast to natural conditions.	Turbidity caused by streambank erosion is listed as an impairment for Onondaga Creek in Part 3a of the 2018 Section 303(d) List of Impaired Waters Requiring a TMDL/Other Strategy for "*Waterbodies for which TMDL Development May be Deferred (Requiring Verification of Impairment).*"
Total Dissolved Solids (TDS)[3] 6 NYCRR Sec. 703.3	-	Shall be kept as low as possible to maintain the best usage of waters, but in no case, shall it exceed 500 mg/L.	OC @ Tully Farms (n=22): 27% OC @ Dorwin (n=24): 21% OC @ Kirkpatrick (n=24): 0% HB @ Velasko (n=24): 0% HB @ Hiawatha (n=24): 0% LC @ Thompson (n=22): 0% LC @ Park Street (n=21): 0%
Metals – Mercury (Dissolved)[4] 6 NYCRR Sec. 703.5	0.0007 µg/L	-	OC @ Tully Farms (n=3): 100% OC @ Dorwin (n=3): 100% OC @ Kirkpatrick (n=3): 100% HB @ Velasko (n=3): 100% HB @ Hiawatha (n=3): 100% LC @ Thompson (n=3): 33% LC @ Park (n=3): 100%

[1] Section §703.4 of the NYSDEC Water Quality Regulations provides the total and fecal coliform standards for classes B, C, D, SB, SC and I to be met during all periods: *(1) when disinfection is required for SPDES permitted discharges directly into, or affecting the best usage of the water; or (2) when the department determines it necessary to protect human health.*

[2] These observations are intended to comply with the ACJ requirements to assess floatables and evaluate the effectiveness of the floatables controls.

[3] Contravention of the TDS standard in CSO and non-CSO tributaries is primarily associated with watershed hydrogeology, not anthropogenic effects. Compliance with the TDS standard was not among the goals of the remediation program.

[4] The dissolved mercury AWQS of 0.0007 µ/L (0.7 ng/L) which applies to Health (Fish Consumption) (H(FC)) was exceeded at the Ley Creek - Thompson sampling site based on data collected during the September 7, 2022, sampling event. The samples were analyzed by the OCDWEP Environmental Laboratory for mercury in the dissolved form using EPA Method 1631 Cold Vapor Atomic Fluorescence Spectrometry (CVAFS) (Revision E). This parameter is not considered exclusively as a pretreatment parameter as there are other sources, including atmospheric deposition, known to contribute mercury to aquatic systems leading to exceedances of AWQS.

4.2.2.2. Compliance Trends, Fecal Coliform (2010-2022)

The ambient water quality standard (AWQS) for fecal coliform is calculated as the geometric mean of a minimum of five observations per month; this value shall not exceed 200 cfu/100 mL. Compliance of Onondaga Lake tributaries with respect to this AWQS has been tracked annually since 2010, the first year that sampling was conducted with sufficient frequency to evaluate status.

Five samples per month were collected at each of the sampling locations, regardless of wet or dry weather conditions, to support a compliance assessment of the parameter of concern in CSOs (fecal coliform) during the Metro SPDES permit disinfection season from April 1 to October 15. The disinfection season was extended to October 31 as part of the May 2022 modifications to the Metro SPDES permit. The percentage of months in compliance with the AWQS for fecal coliform during 2010 through 2022 are plotted in Figure 4-4. General conclusions from Figure 4-4 are as follows.

- Compliance with the AWQS was consistently higher at the upstream sampling sites, Onondaga Creek – Dorwin Avenue (Figure 4-4a) and Harbor Brook - Velasko (Figure 4-4b) but not at the upstream Ley Creek – Thompson sampling site (Figure 4-4c).

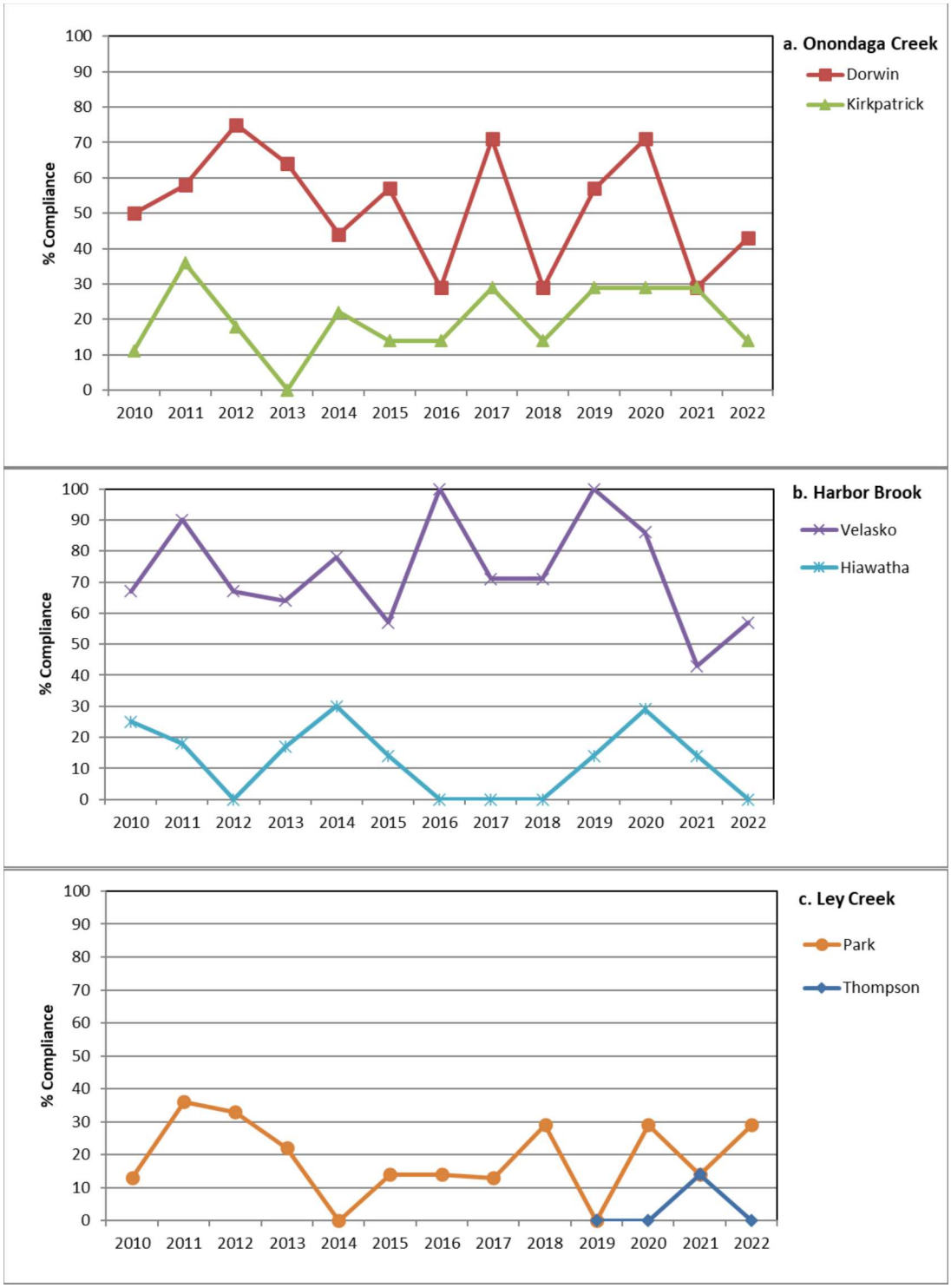
- During 2010 through 2022, the percentage of months in compliance with the AWQS for fecal coliform ranged from 29 to 75 percent at Onondaga Creek at Dorwin Avenue compared to zero to 36 percent at Onondaga Creek – Kirkpatrick (Figure 4-4a).

- Compliance ranged from 43 to 100 percent at Harbor Brook – Velasko compared to zero to 30 percent at Harbor Brook – Hiawatha (Figure 4-4b).

- Compliance at Ley Creek – Thompson ranged from zero to 14 percent for the years 2019 through 2022. Compliance at Ley Creek – Park ranged from zero to 36 percent (Figure 4-4c).

Sampling of Onondaga Creek at Tully Farms Road

Figure 4-4. The Percentage of Months in Each Year in Compliance with the AWQS for Fecal Coliform Bacteria (2010-2022)



4.2.2.3. Trends and Patterns in Tributary Fecal Coliform Concentrations

In addition to reporting compliance with the Ambient Water Quality Standards and Guidance Values (NYSDEC TOGS 1.1.1), the County continues to track fecal coliform concentration trends to assess water quality improvements in the CSO tributaries.

This section includes the following trends and patterns in fecal coliform concentrations in each of the three (3) CSO tributaries:

- Long-term concentration trends (since 1985) (Section 4.2.2.3.1)
- Comparisons of upstream (of all CSOs) and downstream (of all CSOs) sampling location concentrations (Section 4.2.2.3.2)
- Annual wet and dry weather concentration patterns (Section 4.2.2.3.3)

Onondaga Creek, Harbor Brook, and Ley Creek are subject to bacterial contributions from a variety of sources in addition to CSOs, including both rural and urban inputs. For example, the Microbial Trackdown Study (MTS), conducted by the Onondaga Environmental Institute (OEI) and the Onondaga County Department of Water Environment Protection (OCDWEP), identified and corrected 16 point sources of bacteria to Onondaga Creek, Harbor Brook, and Ley Creek. These corrections included repairs to illicit connections to storm sewers and CSOs, broken sewer lines, and failing septic systems. Analyses were conducted using routine monitoring data collected under a variety of conditions, including both dry weather and wet weather conditions. High frequency data collected during storm events (e.g., post construction compliance monitoring, recovery time monitoring) was not included in long-term trend analyses to avoid potential bias associated with the uneven temporal coverage.

4.2.2.3.1. Long-Term Concentration Trends, Fecal Coliform (1985-2022)

Averaging techniques were used to smooth the fecal coliform time series and highlight the underlying temporal patterns in monthly geometric means, annual geometric means, and five-year rolling averages for the long-term period (1985 to 2022). A moving average trendline is added to assist with the visual interpretation of these trends (Figures 4-5 through 4-7). Inter-annual variability in trends could result from differences in total annual rainfall volumes (wet year vs. dry year), intensity of rainfall and timing of sampling events. General conclusions from Figures 4-5 to 4-7 are as follows.

Onondaga Creek:

- A generally consistent pattern has been observed in recent years at Onondaga Creek – Dorwin (Figure 4-5a).
- A stronger decreasing trend is observed at Onondaga Creek – Kirkpatrick (Figure 4-5b). The increase in monthly geomeans at Kirkpatrick Street sampling location observed in 2022 (>20000 cfu/100 mL) is likely related to high antecedent rainfall totals for two (2) sampling events captured on July 14 and August 9 following rain events with >0.5 inches of total rainfall volume.

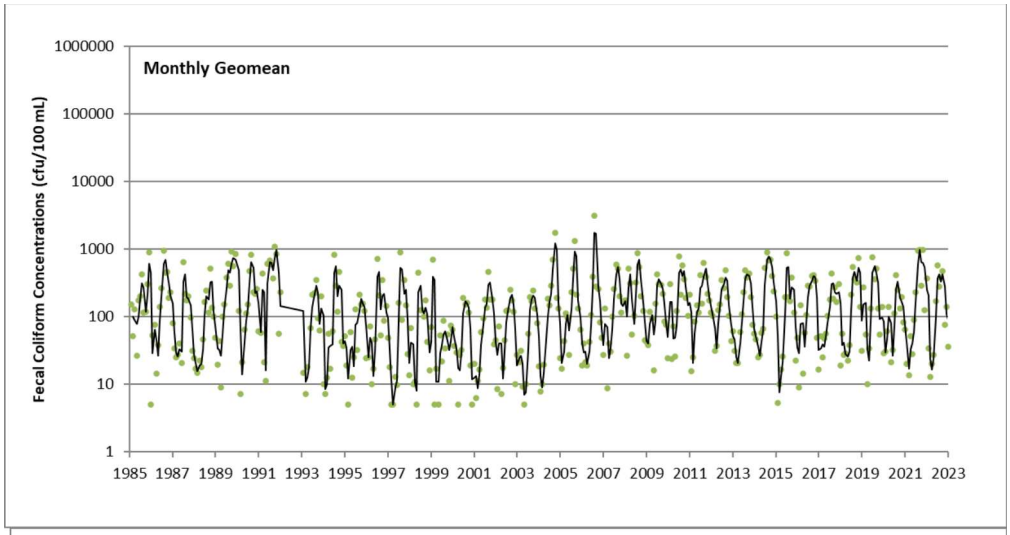
Harbor Brook:

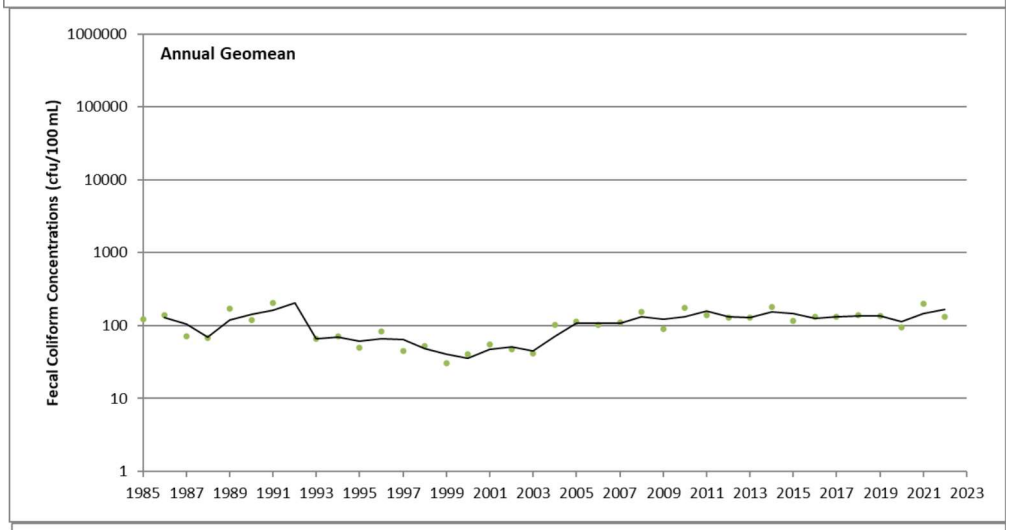
- Decreases in fecal coliform concentrations were achieved during the late 1980s at Harbor Brook both upstream and downstream of CSOs (Figure 4-6a and b).
- Significant changes in recent years are not observed at these sampling locations.

Ley Creek:

- No consistent patterns are observed in fecal coliform at Ley Creek downstream of CSOs in recent years (Figure 4-7).
- Limited data upstream of the CSOs (at Thompson Road) is included for comparison (from 2019 through 2022) which reflect concentrations comparable to or greater than concentrations at the Park Street sampling location (Figure 4-7).

Figure 4-5a. Fecal Coliform Concentrations in Onondaga Creek at Dorwin Avenue (1985-2022)





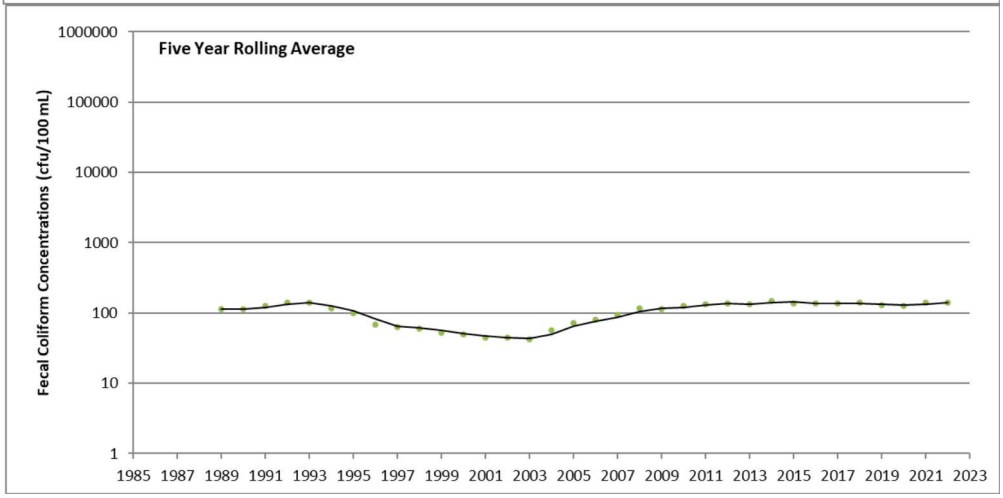
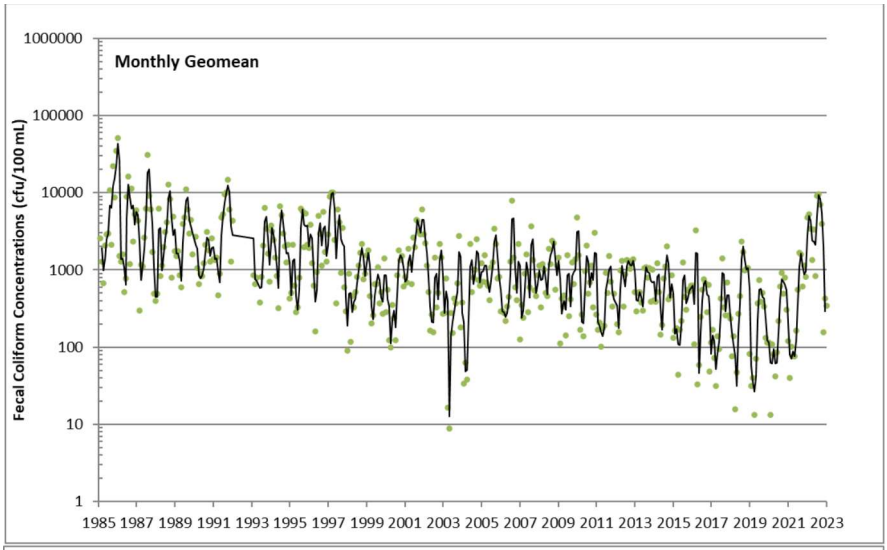
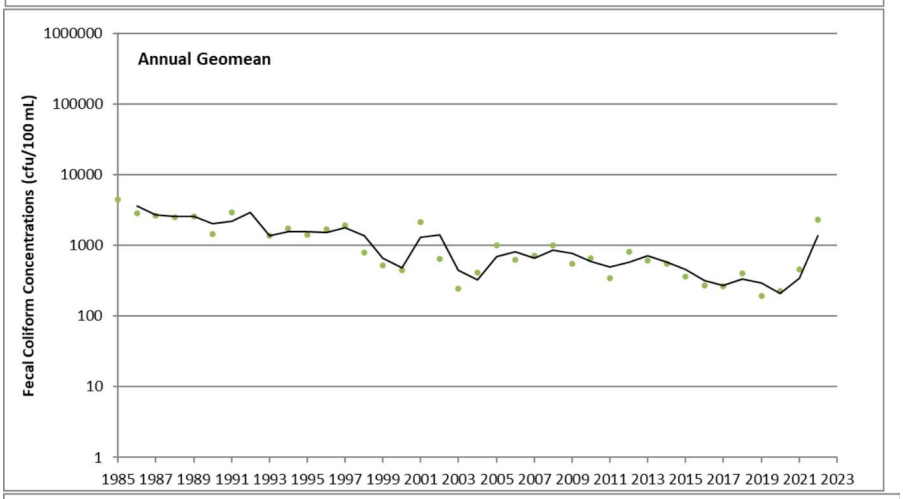


Figure 4-5b. Fecal Coliform Concentrations in Onondaga Creek - Kirkpatrick (1985-2022)





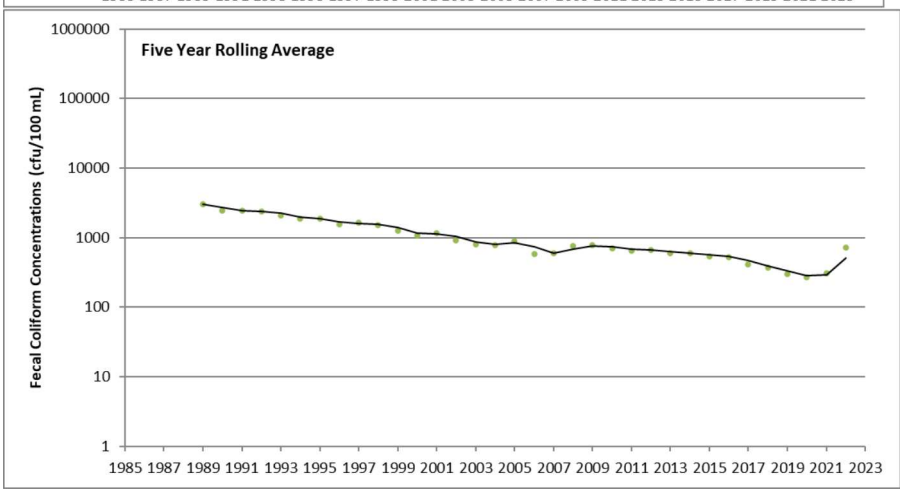


Figure 4-6a. Fecal Coliform Concentrations in Harbor Brook - Velasko (1985-2022)

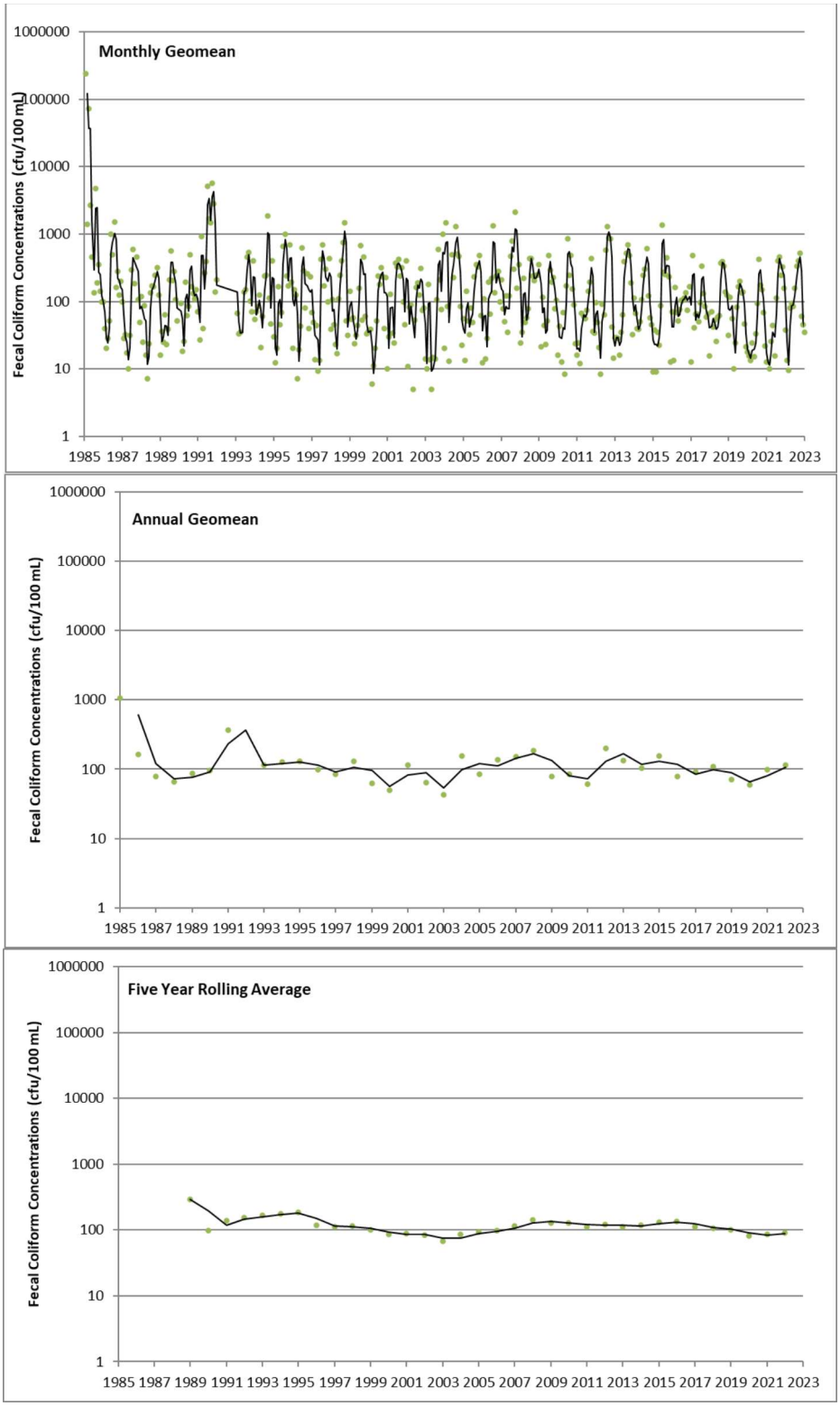


Figure 4-6b. Fecal Coliform Concentrations in Harbor Brook - Hiawatha (1985-2022)

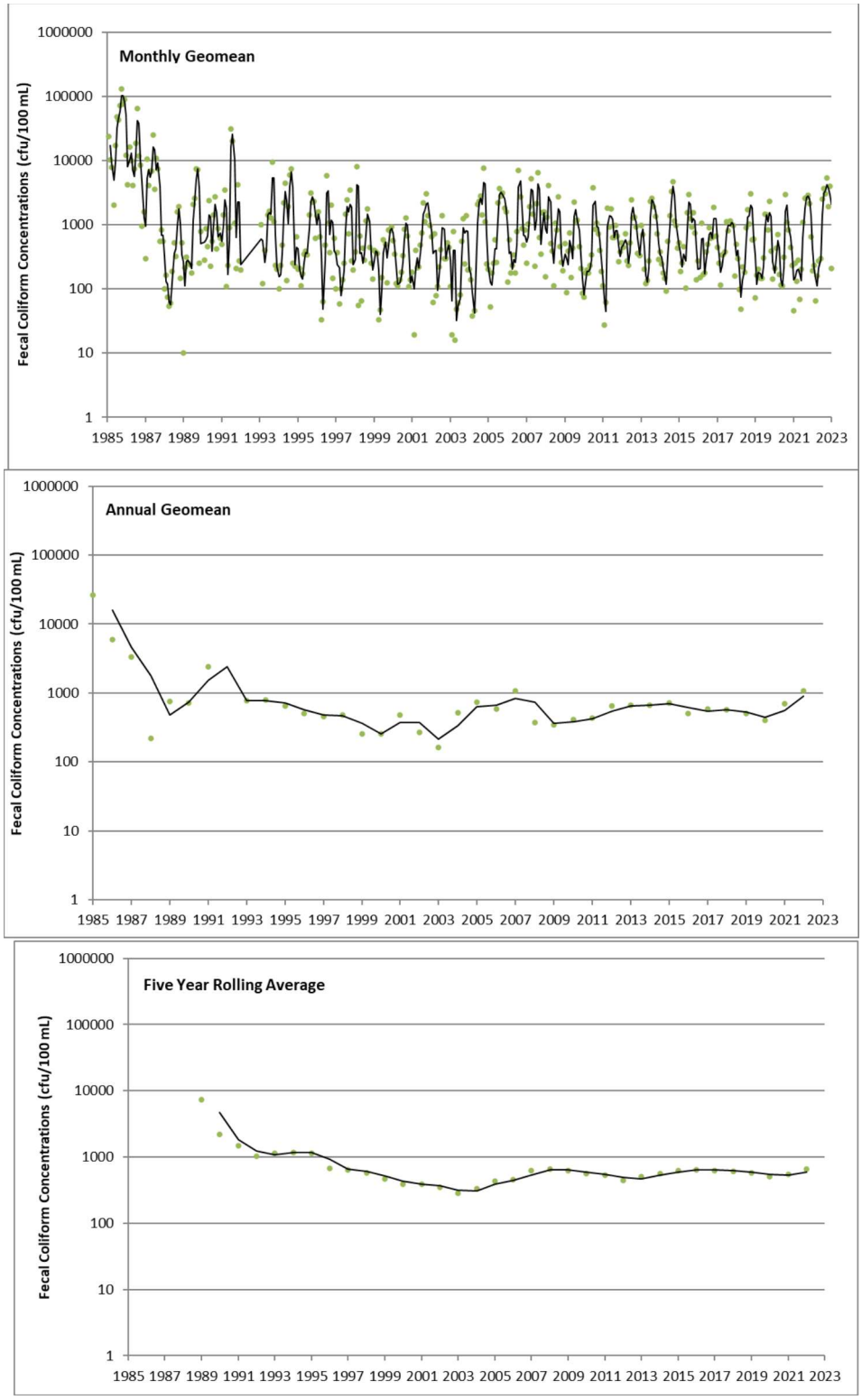
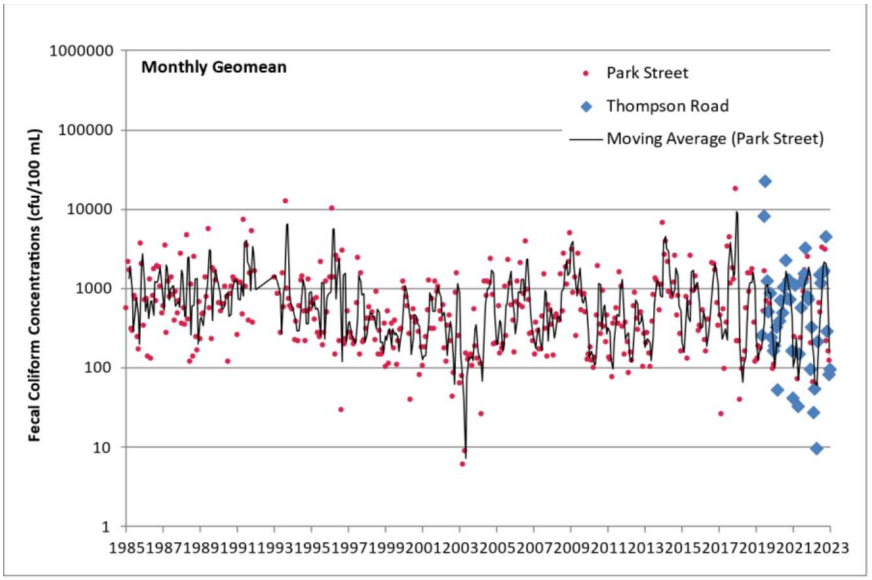
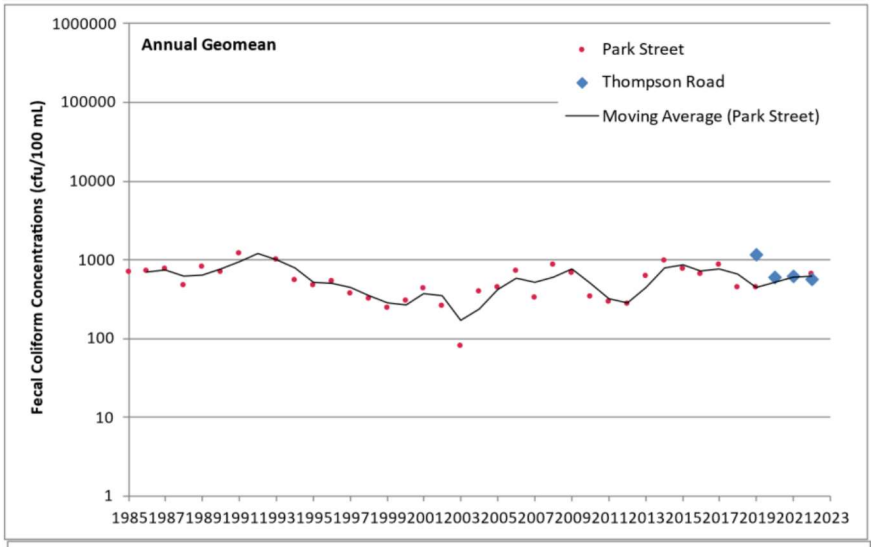
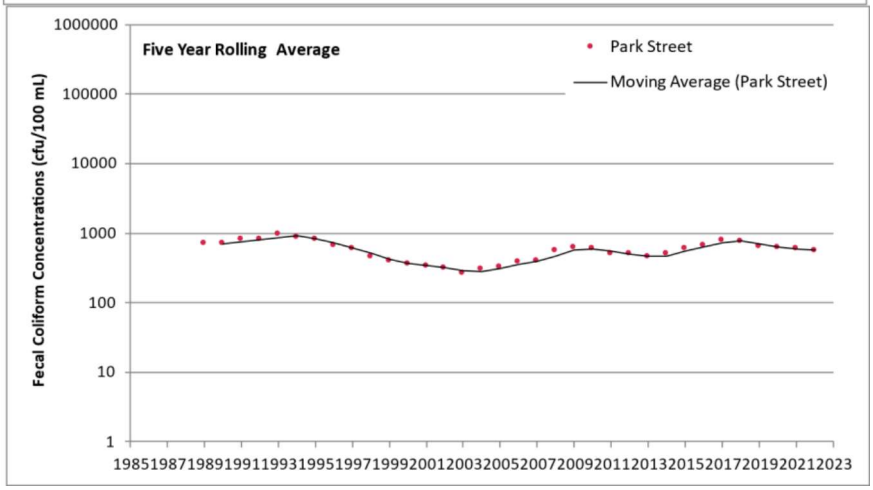


Figure 4-7. Fecal Coliform Concentrations in Ley Creek at Park Street and Thompson Road (1985-2022)

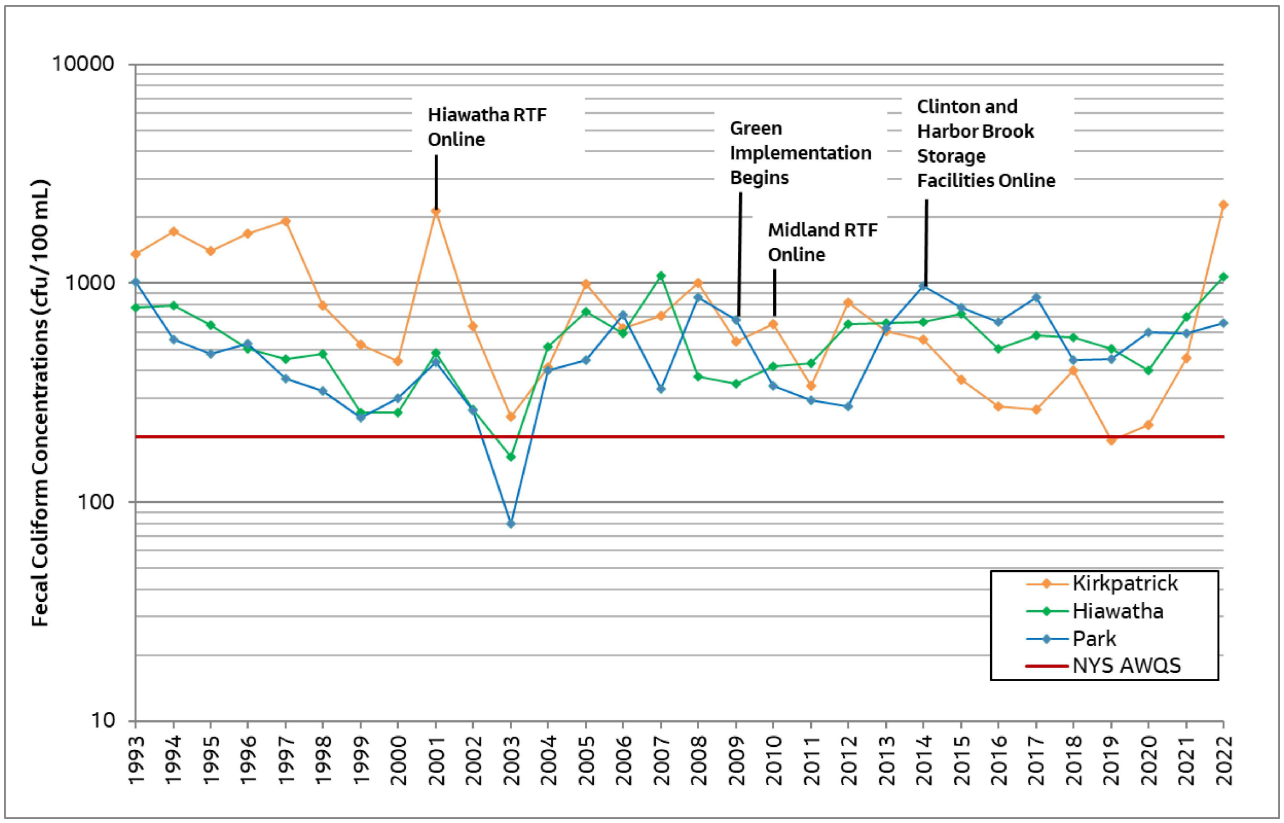






Annual fecal coliform geomean concentrations at the downstream sampling locations for Onondaga Creek - Kirkpatrick, Harbor Brook - Hiawatha, and Ley Creek - Park are included in Figure 4-8 from 1993 through 2022 for comparison purposes. Data at these downstream locations represent the overall impacts of all CSOs. The major milestone years of the CSO abatement projects are indicated in this figure for reference. A downward trend in the fecal coliform geomean concentrations is apparent for Onondaga Creek – Kirkpatrick, with a dramatic increase evident in 2022. However, no apparent significant increasing or decreasing trend in the fecal coliform geomean concentrations is apparent for Harbor Brook - Hiawatha and Ley Creek - Park.

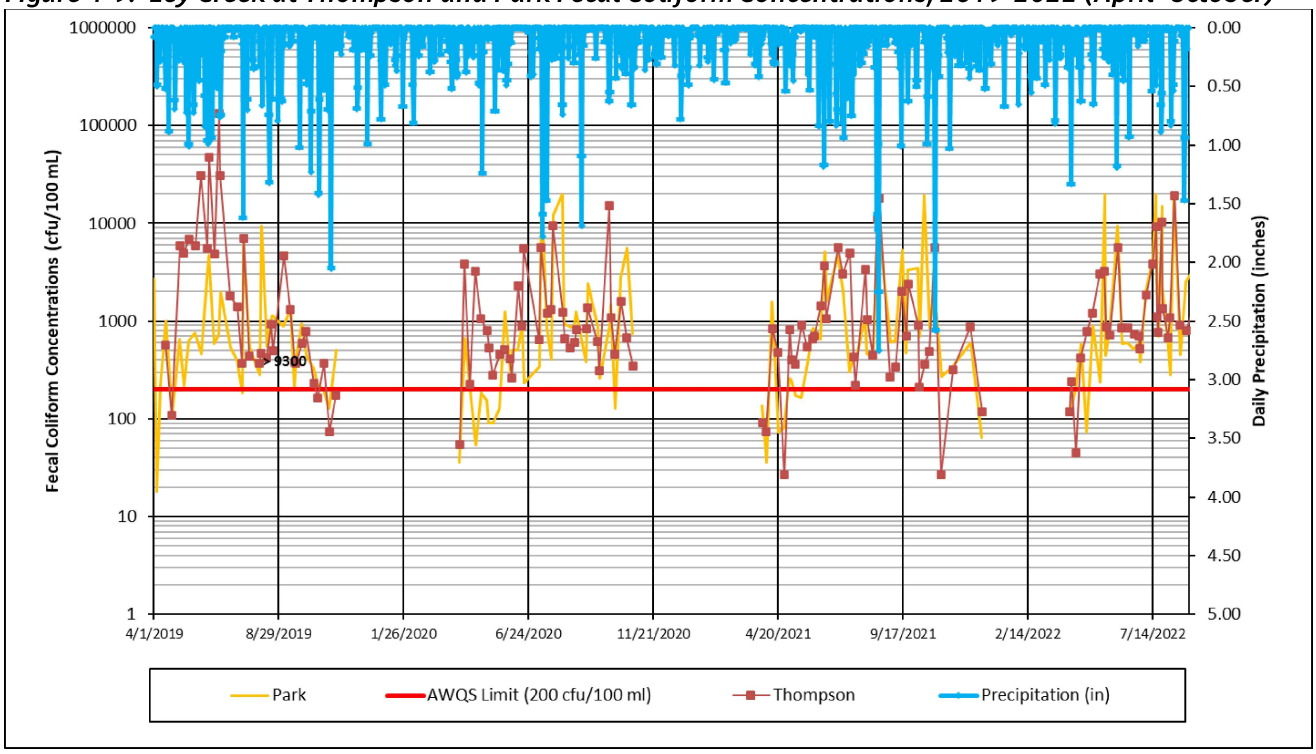
Figure 4-8. Annual Fecal Coliform Geomean Concentrations for Onondaga Creek, Harbor Brook, and Ley Creek (1993-2022)



4.2.2.3.2. Upstream-Downstream Patterns in Ley Creek, Fecal Coliform (2019-2022)

Fecal coliform concentrations at the upstream sample site (Thompson Road) were often equal to or exceeded concentrations at the downstream Park Street location (Figure 4-9). Compliance with the AWQS for fecal coliform was not attained for most months from 2019 through 2022 at either site. These results indicate potential major non-CSO source(s) of fecal coliform to Ley Creek likely exist upstream of CSOs.

Figure 4-9. Ley Creek at Thompson and Park Fecal Coliform Concentrations, 2019-2022 (April–October)



4.2.2.3.3. Wet and Dry Weather Concentration Trends (2020-2022)

Figure 4-10 shows a comparison of fecal coliform concentrations during wet and dry weather conditions in the CSO-affected tributaries (Onondaga Creek, Harbor Brook, and Ley Creek) from 2020 through 2022. A total of 45 fecal coliform samples were collected from January through December 2022, at each of the sampling sites, except for the Ley Creek sampling sites (n=43). "Wet" weather samples are those collected following at least 0.1 inches of rain in the preceding 48 hours; all other samples were classified as "dry". Both upstream and downstream fecal coliform annual geometric means are reported for Onondaga Creek, Harbor Brook, and Ley Creek. It should be noted that the NYS AWQS (based on a monthly geometric mean from a minimum of five examinations of 200 counts/100 mL) is included only for reference in the plots.

Figure 4-10.a. Comparisons of Wet Weather Fecal Coliform Concentrations (Geometric Means) in Onondaga Lake CSO Tributaries during 2020-2022

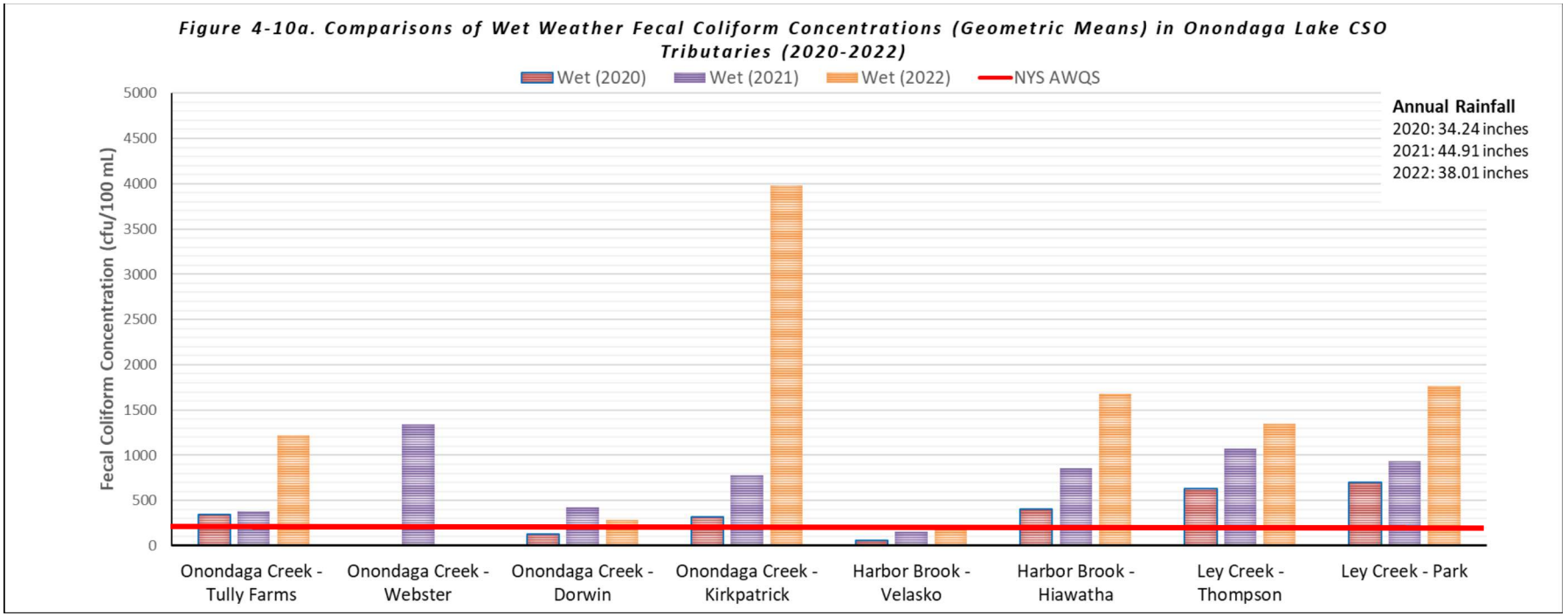
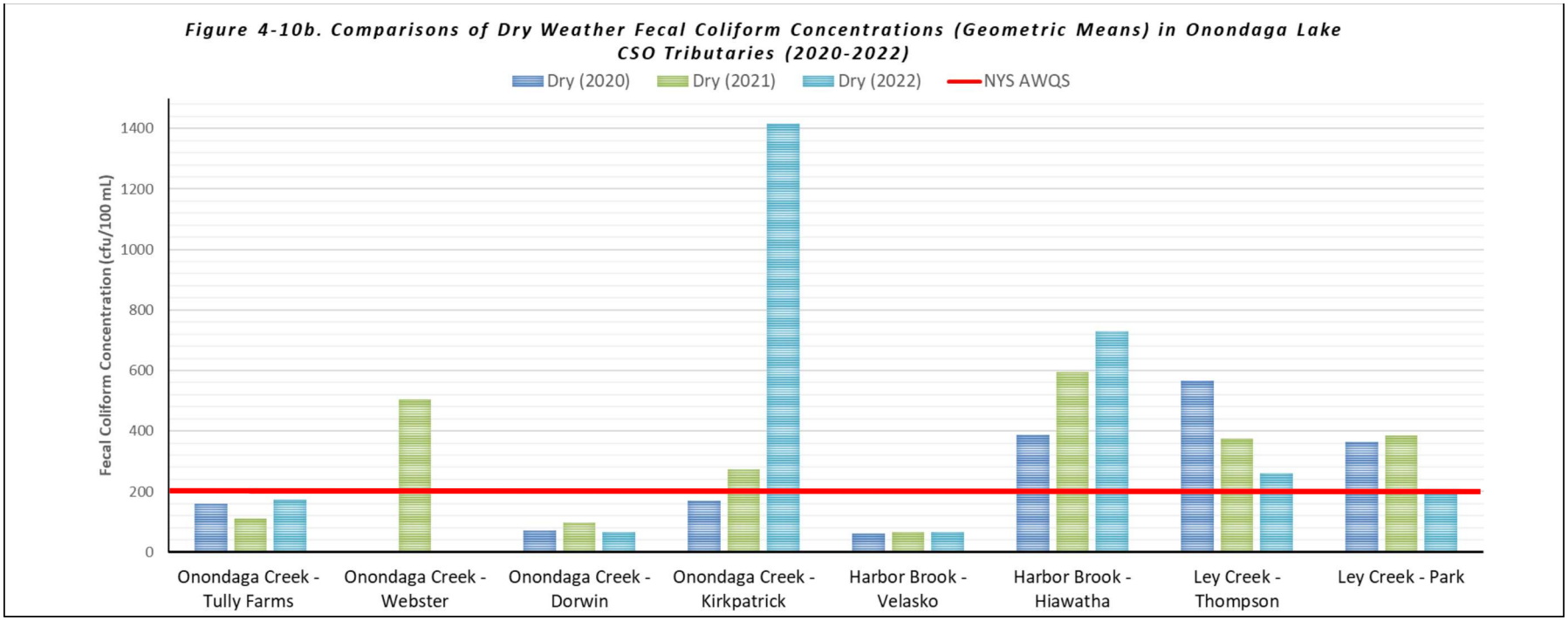


Figure 4-10.b. Comparisons of Dry Weather Fecal Coliform Concentrations (Geometric Means) in Onondaga Lake CSO Tributaries during 2020 - 2022



4.2.3. Water Quality Data Review

Schedule B of the Order requires the County and NYSDEC to perform a water quality data review to support the preparation of the UAA Reports for the CSO tributaries.

4.2.3.1. Existing Water Quality Data:

As per the Order on Consent (Schedule B: Schedule of Deliverables), within one (1) year of the effective date of the Order (which was October 8, 2021) the NYSDEC *"...will complete its review of existing and relevant information, data, analyses and modeling pertaining to the physical, chemical, biological and economic qualities of Onondaga Lake, its tributaries, environs and surroundings ("existing data")*.

The required water quality data review of existing data includes indexing, reviewing for QA/QC, and analyses. The following is an outline of the work completed to date by both the County and NYSDEC.

- In 2020, prior to execution of the Order in October 2021, at NYSDEC's request, the County posted all available CSO tributary water quality data, AMP data, and Microbial Source Trackdown Study data and reports on-online http://www.ongov.net/wep/DataDownload.html.

- In 2021, NYSDEC Albany completed the QA/QC review of the existing data and the County implemented revised QA/QC procedures for the Fecal Coliform sampling program during the 2021 sampling season in accordance with the NYSDEC staff recommendations. In 2021 and 2022, fecal coliform results of the field blanks indicate results were less than the Minimum Reporting Limit (MRL). In addition, all results of the 2021 and 2022 blind field duplicates were acceptable based on the established control limits of 20% relative percent difference.

- In 2021, as requested by the NYSDEC, the County completed uploading 10-year water quality data for Onondaga Lake tributaries (2011 through 2020) to the WQX Web (Water Quality Exchange). WQX is an online tool which allows Network Partners to share ambient water quality data (physical, chemical, biological, habitat, index, and metrics data) with EPA and the public. In 2022, the 2021 annual tributary water quality data was uploaded to WQX. In addition, the PWL information of each of the waterbody segments was uploaded to WQX.

- In 2022, NYSDEC continued the review of existing data. As of December 31, 2022, the review of the data uploaded to WQX is still underway. NYSDEC staff are developing scripts for water quality parameters to allow for automation of compliance assessments with ambient water quality standards and evaluation of impairments using the standardized datasets uploaded to the EPA portal (WQX) for each of the waterbody segments.

4.2.3.2 Additional Water Quality Data

The need for additional data is to follow the review of existing data. This task includes the determination of data gaps identified with the review of the existing data and/or the needs of the UAA reports are complete. The Order specifies that the County will begin such data collection two years after the EDO (October 2023) and for completion within four years of the EDO (October 2025).

4.2.3.3. Use Attainability Analyses (UAA)

As per the MOU between the NYSDEC and the County, the County is required to produce UAA Reports for each waterbody segment that has CSO outfalls, to identify what aquatic life, recreational, and aesthetic uses can be attained through implementation of the County LTCP, as revised. These UAA reports will identify existing uses, use impediments, and reasonably attainable uses based on modeling the impacts of implementing the County LTCP. The UAA Reports will also analyze, for each tributary, the applicability of the criteria set forth in 40 CFR § 131.10(g) for modifying WQS for fecal coliform.

In 2022, NYSDEC drafted a Standard Operating Procedure (SOP) for developing UAAs. It is anticipated that this SOP will serve as a guidance document to implementing UAA's for the communities in the State and as a tool to assess data needs. USEPA developed a UAA spreadsheet-based tool, intended to help states, authorized tribes, and territories establish or revise designated uses by addressing the steps and questions to be considered while conducting a UAA. In general, a UAA is required when revising designated uses related to protecting aquatic life, wildlife, and recreation in and on the water specified in Clean Water Act (CWA) section 101(a)(2).

The Order specifies that within four (4) years and six (6) months of the EDO, the County shall submit a revised LTCP, together with UAA Reports to the NYSDEC, for review and approval, so as to have an approved LTCP and UAA Reports within five (5) years of the EDO. On or prior to the end of the fifth (5^{th}) year from the EDO, UAA will be sent forthwith to EPA for approval, following which the County can petition the NYSDEC for revision of applicable WQS.

4.3. Floatables Control Program Update

The County's Best Management Practices for Combined Sewer Overflows and the control of floatables is regulated by the Metro SPDES Permit. The following paragraphs provide updates on the status of the floatables program, in the areas impacted by the combined sewer overflow (CSO) system within the Onondaga County Consolidated Sanitary District. Onondaga County currently operates five floatable control facilities (FCF). These include the Burnet FCF, Butternut FCF, and Maltbie FCF net bag facilities tributary to Onondaga Creek, the Harbor Brook FCF net bag facility within Harbor Brook, and the Teall FCF combing screen facility tributary to Teall Brook. Onondaga County personnel, at a minimum, perform weekly inspections of the FCFs regardless of the weather that has occurred. After each wet-weather event, County personnel inspect each floatable control facility to evaluate system performance, identify problems, and clean and schedule net bag replacement, as warranted. Over 2022, eighteen tons of material was disposed of from the five FCFs.

The County has contracted services to operate a skimmer boat providing floatables debris collection and disposal in the Inner Harbor of Syracuse, along the mouth of Onondaga Creek, as well as the near-shore portions of Onondaga Lake within 1,000 feet of the mouth of Onondaga Creek, with an option for the skimmer boat service to Onondaga Lake shorelines east and west. In 2022, a total of 10 tons of debris was collected by the skimmer boat operation.

In addition, the County conducts green infrastructure maintenance which includes several scheduled and corrective work procedures related to the control of floatable debris. These include general trash clean up. In 2022 the County collected 300 bags (55-gallon bags) with approximately 80 cubic yards of trash from the completed green infrastructure projects.

For additional information on the County's floatables control activities, refer to the Floatables Control Summary Report, included in Appendix A: Combined Sewer Overflow Annual Report.

4.4. 2022 CSO BMP Report

The Combined Sewer Overflows Annual Report summarizes the implementation of the BMPs as per Section VII.15 of the SPDES permit and is included in this Annual Plan Report as Appendix A.

Floatables Control efforts by the County: Debris and trash removal (left) and Inner Harbor skimmer boat (right).

5. Public Outreach

Public outreach has always been a central component of Onondaga County's award-winning comprehensive stormwater management program Save the Rain (STR). One of the core tenets of the program is its "triple bottom line" approach of addressing social and economic goals while advancing the environmental objectives the program was originally created to address. Those social and economic aspects reflect a commitment to our constituents and stakeholders, and a necessary extension of that commitment is active and robust public engagement and education.

As time has passed and the community has grown more aware of the program, and its goals and values, our outreach has become more targeted and associated with active projects and initiatives. Additionally, the Department of Water Environment Protection has sought to leverage these community connections and better incorporate its wider goals with those of its STR program, giving the public a better understanding of the integrated and holistic approach the County takes to watershed management and public health.

5.1 Communications and Marketing

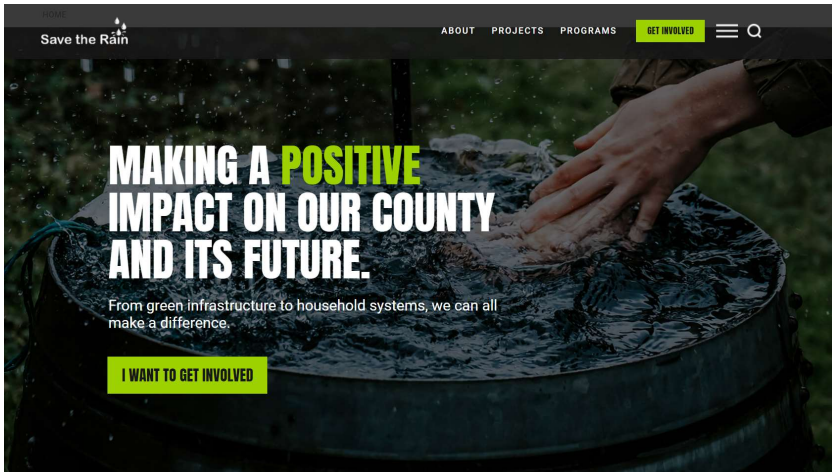
STR continues to develop and update its digital resources. The County's interactive GIS Story Map was updated reflecting the most recently completed STR projects.

Additional project content has been added, where available, in an effort to maintain an unparalleled level of transparency for the public, with respect to STR engineering methodology, and construction methods and materials. Project plans and any educational materials produced for public consumption during the course of a project are all accessible through savetherain.us project pages.

As in the preceding year, public safety concerns related to the ongoing COVID-19 pandemic resulted in the cancellation of WEP's annual Clean Water Fair, which again precluded the traditional marketing outreach venues like radio, television, and billboards, which are routinely employed for advertising the event.

5.1.1 Website

STR's website continues to comprise a reliable and appealing interface for community outreach. Continuous updates ensure that content is detailed and current.



The STR website homepage provides easy access to information on the program and completed projects

5.1.2 Social Media

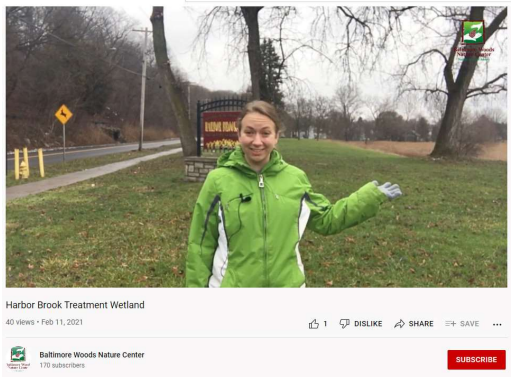
Social media again factored heavily in 2022, with Facebook, Twitter, and YouTube providing the main conduits for disseminating information to the public.

5.2 Partnerships

Partnerships with local educational institutions allow STR to extend its reach and benefit from added expertise and experience.

5.2.1 Baltimore Woods

STR continued its longstanding partnership with Baltimore Woods Nature Center in 2022. Their flagship educational program Nature in the City continued to apply its "hands on, minds on" approach to water quality and green infrastructure education, on behalf of STR, with third graders in all 19 Syracuse City School District elementary schools. They once again proved capable of delivering educational services in a responsive and highly flexible manner, shifting between in-person and online instruction as needed.



Harbor Brook Treatment Wetlands video by Baltimore Woods

5.2.2 Cornell Cooperative Extension

Cornell Cooperative Extension (CCE) offered up resources to STR's long-running and ever popular Rain Barrel Program, offering online education sessions and providing logistical support with barrel distribution activities. Also, CCE has traditionally lent its resources to Onondaga County in the pursuit of watershed education and monitoring activities, and continued with this outreach in 2022.

5.2.3 Onondaga Earth Corps

Though green infrastructure offers many unique benefits, it often demands a high level of regular monitoring and specialized maintenance resources. To fulfill these needs, STR employs Onondaga Earth Corps. In addition to their assistance with GI maintenance, this remarkable organization provides jobs and job training to underprivileged young adults from the City of Syracuse, helping STR to fulfill its social obligations to the community.

Onondaga Earth Corps performing maintenance on the bioretention areas at Rosamond Gifford Zoo

5.2.4 Atlantic States Legal Foundation

Atlantic States Legal Foundation (ASLF) has a lengthy history of partnering with the County to advance their shared goals under the Order and its legal predecessors. Through the development and distribution of educational literature, combined with a physical presence at regional festivals and events like Blues Fest, Crawfish Fest, and the Downtown Farmers Market, ASLF maintained a strong presence in the public sphere throughout 2022, spreading the word about the County's ongoing CSO work and its impacts on the Onondaga Lake watershed.

5.3 Active Projects

Work continued in 2022 on a large green infrastructure project partly financed by the New York State Environmental Facilities Corporation's (NYSEFC) Green Innovation Grant Program (GIGP). NYSEFC requires that STR actively engage the public at each substantial step of project design and construction, and beyond.

Two additional STR projects were substantially completed in 2022. Each was developed and financed by the County in accordance with its ongoing CSO abatement efforts under the State Consent Order, each requiring a significant degree of public outreach and community feedback.

5.3.1 Butternut Street Green Corridor

The County received a $1 million grant for the Butternut Street Green Corridor from NYSEFC. Design work on the project continued throughout 2022, and construction is anticipated to begin in spring of 2023. No public outreach was conducted in 2022, but will occur prior to the start of construction in 2023.

5.3.2 West Genesee Street Green Corridor

Construction on this signature green infrastructure project reached substantial completion in 2022. The County kept the public apprised of construction activities throughout with a combination of door-to-door canvassing and informational literature drops.

5.3.3 CSO 029 Sewer Reconfiguration

This STR project focused on hydraulic improvements to sewer infrastructure in the City of Syracuse's historic Armory Square district. As this is a major cultural and economic center for the City, great care was taken to elicit public feedback throughout the development process, and to keep the public informed at each step of the project through its completion. The County utilized door-to-door canvassing and informational literature drops, in addition to regular attendance at local community and business owner meetings.

6. Conclusions

During 2022, the County continued to implement green and gray infrastructure projects, monitor CSO quantity and quality, and plan future projects using a strategic, opportunistic, and cost-effective approach to CSO abatement. The ACJ was closed in 2021, and the State Consent Order between the County and the NYSDEC became effective to guide the County's CSO Control Program.

In 2022, the County's CSO control program achieved the following:

- **Completed construction of five green infrastructure projects**, including three GIF projects. With these projects, the County has implemented 248 green infrastructure projects to date since 2009.
- **Completed construction of three gray infrastructure projects**. With these projects, the County has implemented 23 gray infrastructure projects to date since 2009.
- **Continued planning new green and gray infrastructure projects** using a strategic, opportunistic, and affordable approach.
- **Operated and maintained** publicly owned green infrastructure sites and CSO storage and treatment facilities.

Construction of an Infiltration Trench on West Genesee Street in CSO 066

- **Updated SWMM** to reflect conditions through December 2022. The calculated annual CSS capture remains at 98.2 percent. A comparison between SWMM estimates for CSO discharge using the 2022 rainfall to the 2022 metered data indicates that the County's SWMM is performing well in estimating conditions at the metered outfalls.
- **Continued monitoring** CSO quantity with CSO flow metering and CSO tributary water quality monitoring. A generally consistent leveling-off pattern has been observed in recent years regarding fecal coliform concentrations in Onondaga Creek, Harbor Brook, and Ley Creek compared to long-term downward trends. Fecal coliform concentrations in each of the tributaries remained generally consistent with previous recent years, with the exception being associated with two heavy rain fall events on July 14 and August 9.
- **Continued the ongoing floatables control program**, including floatables control facilities and catch basin cleaning.
- **Continued public participation and outreach** through traditional and digital communications and marketing, along with partnerships with educational and non-profit organizations.

Appendix A
2022 Combined Sewer Overflows Annual Report

Combined Sewer Overflow (CSO) Annual Report

version 1.8

(Submission #: HPR-ATSQ-7DQRG, version 1)

Details

Originally Started By	Kelly O'Brien
Submitted	3/30/2023 (0 days ago) by Emily Procopio
Alternate Identifier	NY0027081
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Status	Deemed Complete

Form Input

Permit Information

SPDES Number
NY0027081

DEC Region
7

Permittee Name
Onondaga County

Facility Name
Metroplitan Syracuse WWTP

Official Name
Shannon L. Harty, P.E.

Official Title
Commissioner

Official's Phone Number
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CSO Program Manager Name
Lauren Livermore, P.E., BCEE

CSO Program Manager Title
Deputy Commissioner

CSO Program Manager Phone Number
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Part I - CSO LTCP Information

GENERAL CSO PROGRAM INFORMATION

Use the following questions to provide current general information on the CSO Program

Number of CSO Outfalls in the permittee owned system
42

Number of CSO Events Occurring in Reporting Year
106

Percentage of Collection System, owned by the permittee, that is combined (%)
23.6

Approximate length (mi) of combined sewers in permittee-owned system
52.46

Population served by the permittee-owned system
148,620

Number of Publicly-Owned Sewer Systems (POSS) to the permittee-owned system
6

Number of Publicly-Owned Sewer Systems (POSS) to the Combined Sewer System
3

Number of Significant Industrial Users (SIU) connected to the CSS
9

Number of other, non-POSS satellite system connections
0

Long Term Control Plan (LTCP) Information

Was an LTCP Required?
No

Post Construction Compliance Monitoring (PCCM)

What is the status of the PCCM Plan?
Approved

What is the status of the PCCM Sampling Program?
In Progress

Part II - CSO Outfall Information

CSO Outfall Information

Outfall Number	Latitude (Decimal)	Longitude (Decimal)	Receiving Water Name	Receiving Water Class	Number of Regulators Associated	Type of Regulator	Type of Treatment Provided	Number of Overflow Events - BASELINE	Number of Overflow Events - PREVIOUS YEAR	Number of Overflow Events - CURRENT YEAR	Annual CSO Volume (MG) - BASELINE	Annual CSO Volume (MG) - PREVIOUS YEAR	Annual CSO Volume (MG) - CURRENT YEAR	Measurement Method
003	43.05555556	76.18527778	Harbor Brook	C	1	Fixed Weir	Other Wet Weather Facility	0	0	0	0	0	0	Modeled
004	43.05361111	76.18166667	Harbor Brook	C	1	Fixed Weir	Other Wet Weather Facility	0	0	0	0	0	0	Modeled
04A	43.05402778	76.18277778	Harbor Brook	C	1	Other: Overflow Flap	Other Wet Weather Facility	0	5	1	0	2.7	0.36	Estimated
005	43.05305556	76.17722222	Harbor Brook	C	1	Fixed Weir	None	0	3	3	0	0.5	0.5	Modeled
006	43.05194444	76.17638889	Harbor Brook	C	1	Fixed Weir	None	0	0	0	0	0	0	Modeled
007	43.05194444	76.17388889	Harbor Brook	C	1	Fixed Weir	None	0	8	8	0	2.7	2.7	Modeled
009	43.04638889	76.17583333	Harbor Brook	C	1	Fixed Weir	None	0	6	6	0	1.8	1.8	Modeled
010	43.04583333	76.17250000	Harbor Brook	C	2	Fixed Weir	None	0	0	0	0	0	0	Modeled
011	43.04277778	76.1730556	Harbor Brook	B	1	Fixed Weir	None	0	5	5	0	0.6	0.6	Modeled
014	43.04277778	76.17472222	Harbor Brook	B	1	Fixed Weir	None	0	13	29	0	2.5	0.64	Metered
015	43.03888889	76.17722222	Harbor Brook	B	1	Fixed Weir	None	0	2	2	0	0.3	0.3	Modeled

Outfall Number	Latitude (Decimal)	Longitude (Decimal)	Receiving Water Name	Receiving Water Class	Number of Regulators Associated	Type of Regulator	Type of Treatment Provided	Number of Overflow Events - BASELINE	Number of Overflow Events - PREVIOUS YEAR	Number of Overflow Events - CURRENT YEAR	Annual CSO Volume (MG) - BASELINE	Annual CSO Volume (MG) - PREVIOUS YEAR	Annual CSO Volume (MG) - CURRENT YEAR	Measurement Method
017	43.03666667	76.17972222	Harbor Brook	B	1	Fixed Weir	None	0	0	0	0	0	0	Modeled
018	43.03611111	76.18277778	Harbor Brook	B	1	Fixed Weir	Overflow Retention / Settling	0	10	10	0	7.4	5.1	Metered
020	43.05472222	76.15722222	Onondaga Creek	C	1	Fixed Weir	Other: Netbags	0	16	16	0	21.0	21.1	Modeled
021	43.05444444	76.15694444	Onondaga Creek	C	1	Fixed Weir	Other: Netbags	0	27	27	0	41.1	41.5	Modeled
027	43.04861111	76.15777778	Onondaga Creek	C	1	Fixed Weir	None	0	47	35	0	22.4	13.1	Metered
028	43.04805556	76.15750000	Onondaga Creek	C	1	Fixed Weir	None	0	0	3	0	0	0.4	Modeled
029	43.04805556	76.1575000	Onondaga Creek	C	1	Fixed Weir	None	0	18	5	0	5.7	0.8	Modeled
030	43.04722222	76.15750000	Onondaga Creek	C	1	Fixed Weir	Other Wet Weather Facility	0	0	0	0	0	0	Modeled
031	43.04694444	76.15777778	Onondaga Creek	C	1	Fixed Weir	Other Wet Weather Facility	0	0	0	0	0	0	Modeled
032	43.04583333	76.15777778	Onondaga Creek	C	1	Fixed Weir	Other Wet Weather Facility	0	0	0	0	0	0	Modeled
033	43.04444444	76.15527778	Onondaga Creek	C	1	Fixed Weir	Other Wet Weather Facility	0	0	0	0	0	0	Modeled
033A	43.04444444	76.15527778	Onondaga Creek	C	1	Other: Overflow Flaps	None	0	9	3	0	48.3	7.94	Metered
034	43.04361111	76.15472222	Onondaga Creek	C	1	Fixed Weir	Other Wet Weather Facility	0	0	0	0	0	0	Modeled
035	43.04361111	76.15472222	Onondaga Creek	C	1	Fixed Weir	Other Wet Weather Facility	0	0	0	0	0	0	Modeled

Outfall Number	Latitude (Decimal)	Longitude (Decimal)	Receiving Water Name	Receiving Water Class	Number of Regulators Associated	Type of Regulator	Type of Treatment Provided	Number of Overflow Events - BASELINE	Number of Overflow Events - PREVIOUS YEAR	Number of Overflow Events - CURRENT YEAR	Annual CSO Volume (MG) - BASELINE	Annual CSO Volume (MG) - PREVIOUS YEAR	Annual CSO Volume (MG) - CURRENT YEAR	Measurement Method
036	43.04250000	76.15500000	Onondaga Creek	C	1	Fixed Weir	Other Wet Weather Facility	0	0	0	0	0	0	Modeled
037	43.04222222	76.15500000	Onondaga Creek	C	1	Fixed Weir	Other Wet Weather Facility	0	0	0	0	0	0	Modeled
039	43.03666667	76.15527778	Onondaga Creek	C	1	Fixed Weir	Other Wet Weather Facility	0	0	0	0	0	0	Modeled
042	43.03305556	76.0580556	Onondaga Creek	C	1	Fixed Weir	Other Wet Weather Facility	0	0	0	0	0	0	Modeled
044	43.03055556	76.15944444	Onondaga Creek	C	1	Fixed Weir	Other Wet Weather Facility	0	0	1	0	0	.018	Estimated
052	43.02083333	76.15583333	Onondaga Creek	C	1	Fixed Weir	None	0	55	106	0	1.53	84.1	Metered
060M	43.02361111	76.15472222	Onondaga Creek	C	2	Fixed Weir	None	0	17	9	0	2.8	0.98	Metered
063A	43.05777778	76.18777778	Onondaga Creek	C	1	Fixed Weir	Other Wet Weather Facility	0	0	0	0	0	0	Modeled
066	43.05555556	76.16138889	Onondaga Creek	C	1	Fixed Weir	Other: Netbags	0	15	14	0	5.5	4.6	Modeled
067	43.01611111	76.15777778	Onondaga Creek	C	1	Other: offset pipe	Other: Swirl Concentrator	0	13	8	0	0.25	0.14	Metered
071	43.05722222	76.16138889	Onondaga Creek	C	1	Fixed Weir	None	0	0	0	0	0	0	Modeled
073	43.07833333	76.12361111	Teall Brook	C	1	Fixed Weir	Other: Copa Screen	0	9	34	0	4.4	8.6	Metered
074	43.07666667	76.17194444	Ley Creek	C	1	Fixed Weir	Settling & Disinfection	0	2	1	0	0.3	.023	Metered
075	43.06472222	76.17222222	Onondaga Creek	C	1	Fixed Weir	None	0	0	0	0	0	0	Modeled
076	43.01916667	76.15500000	Onondaga Creek	C	1	Fixed Weir	None	0	0	0	0	0	0	Modeled
078	43.03555556	76.18861111	Harbor Brook	B	1	Fixed Weir	None	0	30	26	0	2.35	1.7	Metered

Outfall Number	Latitude (Decimal)	Longitude (Decimal)	Receiving Water Name	Receiving Water Class	Number of Regulators Associated	Type of Regulator	Type of Treatment Provided	Number of Overflow Events - BASELINE	Number of Overflow Events - PREVIOUS YEAR	Number of Overflow Events - CURRENT YEAR	Annual CSO Volume (MG) - BASELINE	Annual CSO Volume (MG) - PREVIOUS YEAR	Annual CSO Volume (MG) - CURRENT YEAR	Measurement Method
080	43.05083333	76.15833333	Onondaga Creek	C	1	Other: Gate; gate opens when setpoint reached	None	0	7	7	0	62.7	11.3	Metered
M01	43.03333334	76.15833333	Onondaga Creek	C	1	Fixed Weir	Screening, Settling, Disinfection	0	12	7	0	104.9	35.8	Estimated
M02	43.03361111	76.15833333	Onondaga Creek	C	1	Other: Emergency OVerflow Flaps	None	0	1	2	0	0.009	2.68	Estimated
06A	43.05194444	76.17638889	Harbor Brook	C	1	Fixed Weir	None	0	1	0	0	0.1	0	Modeled

Closed CSO Outfall Information

Outfall Number	Latitude (Decimal)	Longitude (Decimal)	Receiving Water Name	Receiving Water Class	Approximate Year Outfall Closed	Cause / Reason for Closure
008	43.04916667	76.17472222	Harbor Brook	B	0	Sealed
012	NONE PROVIDED	NONE PROVIDED	Harbor Brook	B	0	Sealed
013	43.04166667	76.17444444	Harbor Brook	B	2011	Sewer Separation
016	43.03777778	76.17861111	Harbor Brook	B	2011	Sewer Separation
022	43.05305556	76.15805556	Onondaga Creek	C	2013	Sewer Separation
024	43.05027778	76.15805556	Onondaga Creek	C	2001	Sewer Separation
025	NONE PROVIDED	NONE PROVIDED	Onondaga Creek	C	0	Sewer Separation
040	43.03638889	76.15527778	Onondaga Creek	C	2005	Sewer Separation
045	43.03027778	76.16055556	Onondag Creek	C	2013	Sewer Separation
046A/B	43.02833333	76.16277778	Onondaga Creek	C	2005	Sewer Separation
047	43.02750000	76.15916667	Onondaga Creek	C	2006	Sewer Separation
048	43.02694444	76.15888889	Onondaga Creek	C	2006	Sewer Separation
049	NONE PROVIDED	NONE PROVIDED	Onondaga Creek	C	0	Sewer Separation
050	43.02388889	76.15527778	Onondaga Creek	C	2008	Sewer Separation
051	43.02305556	46.15527778	Onondaga Creek	C	2009	Sewer Separation
053	43.02000000	76.15555556	Onondaga Creek	C	2003	Sewer Separation
054	43.01916667	76.15472222	Onondaga Creek	C	2003	Sewer Separation

Outfall Number	Latitude (Decimal)	Longitude (Decimal)	Receiving Water Name	Receiving Water Class	Approximate Year Outfall Closed	Cause / Reason for Closure
055	NONE PROVIDED	NONE PROVIDED	Onondaga Creek	C	0	Sewer Separation
056	NONE PROVIDED	NONE PROVIDED	Onondaga Creek	C	0	Sewer Separation
057	43.05305556	76.15805556	Onondaga Creek	C	1999	Sewer Separation
058	43.05111111	76.15833333	Onondaga Creek	C	0	Sewer Separation
059	43.05194444	76.15888889	Onondaga Creek	C	1999	Sewer Separation
061	43.02194444	76.155	Onondaga Creek	C	2016	Sewer Separation
062	NONE PROVIDED	NONE PROVIDED	Onondaga Creek	C	0	Other: Removed
065	43.038889	76.160278	Onondaga Creek	C	1999	Sealed

CSO Outfall Explanation
0 entered for baseline data in Table 1 as it is unknown. 0 entered for closure date in Table 2 if it is unknown. CSO 060M refers to permitted CSO 060/077.

CSO 052 data skewed by water main breaks. SWMM estimates 3 overflows/yr with 0.3MG typ. vol. CSO 080 data impacted by high creek levels. CSO 044 discharged once due to Midland Influent Pump failure. County's SWMM estimates 27 overflow events annually (updated 12/31/22). County has 42 overflows (11-operational and 31-abated).

Part III - Collection System Information

Baseline Information

If Baseline information is unknown, please use a best estimate, then characterize/describe in the narrative box below.

Baseline - Percentage (%) of combined sewers in the collection system owned by the permittee
0

Baseline - Approximate length (mi) of combined sewers owned by the permittee
0

Baseline - Number of CSO Outfalls owned by the permittee
72

Baseline - Number of CSO Events
0

Baseline - Annual CSO Volume discharged (MGD)
982

Baseline - Population Served by the CSS
145,170

Baseline - Number of Satellite System Connections
0

Post-LTCP Implementation Information

If an LTCP has not yet been developed, or wasn't required, please input the current year information for each field.

Future - Percentage (%) of combined sewers in the collection system owned by the permittee
23.6

Future - Approximate length (mi) of combined sewers owned by the permittee
52.46

Future - Number of CSO Outfalls owned by the permittee
42

Future - Number of CSO Events
27

Future - Annual CSO Volume Discharged (MGD)
108

Future - Population Served by the CSS
148,620

Future - Number of Satellite System Connections
3

Use the space below to provide any further relevant information on the collection system & to indicate if baseline information is unknown. This should include a description of any unique ownership, operation and maintenance agreements or further explanation and description of POSS/satellite system connections. For POTW's with POSS's, please indicate which municipality owns/operates which infrastructure (Pump Stations, trunk sewers, interceptors, regulators, outfall structures, etc.) as well as who is responsible for reporting CSO events from CSOs within the POSS and who is responsible for reporting SSOs within the POSS.

Baseline refers to conditions prior to any abatement measures completed under the 1st stipulation of the ACJ (1998). If baseline conditions are unknown, entered 0. The County is currently governed by the ICMP and as such current values are being used for the Post-LTCP numbers.

The County has (3) publicly-owned systems that convey flow to combined system (Dewitt (T), City of Syracuse POSS, Onondaga(T)). The County has (6) publicly-owned sewer systems that convey flow to Metro but are not connected into the combined sewer system (Camillus Consolidated, Clay(T) Syracuse Metro WWTP Service area, Town of Salina-Salina POSS to Syracuse Metro, South Geddes and Part of North Geddes Sewer District, V of Solvay, and Camillus(V) POSS).

Part IV - CSO Control Implementation Information

Reporting Year Information

Provide a summary of any significant LTCP or PCCM projects completed within the reporting year and any milestones for the reporting year that were not achieved.
In 2022, 5 green infrastructure projects were completed within the basins for CSO 066, 080A, 027, and 039. These projects resulted in a total annual runoff reduction of 7.683 MG.

The County also completed the CSO 029 Abatement Project. This project featured the reconfiguration of the CSO 029 regulator to reduce the frequency of CSO discharges and improve system hydraulics. Sewer lining was also completed within the CSS to reduce extraneous flow entering the system.

Upcoming Year Information

Summarize significant LTCP and PCCM projects planned and milestones due for the upcoming year.
The County's PCCM plan includes flow monitoring on Harbor Brook CSOs in 2023-2024. The flow monitoring efforts will be used to calibrate the SWMM model. In addition, post-construction flow monitoring is planned on CSO 028 and 029.

The regulator modifications at CSO 052 were designed and construction completion is anticipated by end of 2023. Green infrastructure projects also planned for construction in 2023 include the Butternut Street Green Corridor (020), Lodi Street (020), and Marshall Hall (039).

Part V - CSO Best Management Practices (BMPs)

Which CSO BMPs does your SPDES permit require?
1- CSO Maintenance / Inspection
2- Maximize Use of the Collection System for Storage
5- Wet Weather Operating Plan (WWOP)
3- Industrial Pretreatment
4- Maximize Flow to POTW
6- Prohibition of Dry Weather Overflows
7- Control of Floatables and Settleable Solids
9- Combined Sewer / Extension
11- Septage and Hauled Waste
13- Public Notification
14- Characterization and Monitoring
12- Control of Runoff
10- Connection Prohibitions
8- Combined Sewer System Replacement

BMP No. 1 CSO Maintenance Inspection

6 NYCRR 750-2.8(a)(2)
(EPA NMC No. 1: Proper Operation and Regular Maintenance)

Is there a written program for the maintenance and inspection of the CSS and CSOs?
Yes

What is the minimum frequency of dry-weather CSO inspections?
Weekly

Are inspections of CSOs/regulators conducted during or following wet weather events?
Yes

Do the inspection reports indicate visual inspection observations, observed or presumed flows, weather conditions, equipment condition, and any repair work recommended?
Yes

Are the inspection reports submitted to the DEC Regional Office?
Yes, with Monthly Operating Reports

Indicate which of the following additional components are included in the maintenance and inspection program:
Pump Stations
Sewer Manholes & Catch Basins
CSO Outfalls
CSO Controls (e.g. regulators, screening/storage/treatment facilities)
Sewer Pipes & Interceptors

Are there existing inter-municipal agreements which specify responsibilities for inspection, maintenance, and/or repair?
No

Is the collection system mapped using GIS?
Yes, portions of the system (only interceptors & sewer pipes)

Is the collection system monitored using a SCADA system or other flow monitoring system?
Yes, SCADA

In the past year, was progress made to install, upgrade, or expand monitoring with SCADA/Other system?
Yes

In the upcoming year, is installation, upgrade, or expansion of monitoring with SCADA/Other system planned?
Yes

Does the municipality have an asset management program that includes the collection system?
Yes, in place

Have any work efforts or problems in the past year resulted in changes in overflows? If yes, describe below in the narrative box.
Yes

In the past year, was the inspection and maintenance program mostly:
Proactive (focusing on preventative maintenance to avoid problems)?

Use the space below to provide a narrative description of the following:
a) Lengths of sewer cleaned and inspected,
b) Number of manholes and catch basins cleaned and inspected,
c) Any repairs or replacements conducted in the CSS,

In 2022, 2,916 LF of combined sewers were cleaned and 4,918 LF were televised. These lengths are in addition to the monthly cleaning conducted on our siphons. 298 manholes were also inspected and there have been no repairs or replacements within the CSS.

Use the space below to describe any large equipment purchases made in the reporting year or planned for the upcoming year (e.g. vacuum trucks, pumps, etc.) , as well as, any work efforts or problems in the past year that resulted in changes to the collection system maintenance and inspection program, and any noticeable results of the system changes (e.g. fewer events, less CSO volume, a reduction in floatables or other pollutants discharges, visible improvement in water quality of receiving water).
A new vacuum truck (Aquatech) was obtained in 2022 to aid in collection system maintenance.

BMP No. 2 Maximize Use of the Collection System for Storage

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6 NYCRR 750-2.7(f), 750-2.8(a)(2), 750-2.8(a)(5)
(EPA NMC No. 2: Maximization of Storage in the Collection System)

In the past year, was the collection system able to convey the required minimum flows to the treatment plant during ALL wet-weather events?
No

Has the hydraulic capacity of the collection system been evaluated?
Yes

When was the hydraulic capacity last evaluated?
2022

Have regulators and weirs ever been adjusted/modified to maximize storage?
Yes

In the past year, or the upcoming year, indicate if any of the following items have been changed or if changes are planned to improve use of the collection system for storage? If so, describe below in the narrative box.
Sewer Cleaning and Sediment Removal
Tidegate Maintenance/Repair/Replacement
Regulator or Weir Adjustment

Use the space below to provide a narrative description of the changes to structures or procedures that will improve use of the collection system for storage (e.g. tide gate maintenance/repairs/replacement, regulator or weir adjustment, FOG program changes, removal of bottlenecks/flow obstructions, sewer cleaning and sediment removal, in-line storage, etc.).

The CSO 029 Abatement Project (regulator modification) was completed in 2022 to maximize storage in the collection system and reduce CSOs.

On-going sewer cleaning and siphon cleaning reduces sediment build-up and maintenance of the collection system capacity.

BMP No. 3 Industrial Pretreatment

6 NYCRR 750-2.7(f) and 2.9(a)(4)
(EPA NMC No. 3 & 7: Review and Modification of Pretreatment Requirements & Pollution Prevention Programs to Reduce Contaminants in CSOs)

Is there an approved pretreatment or mini-pretreatment program or acceptance of flow from non-domestic sources?
Yes, IPP or Mini-IPP

Is there an inventory of industrial or non-domestic dischargers?
Yes

Has the impact on CSOs from non-domestic users that discharge toxic pollutants been evaluated, and steps taken to minimize such impacts?
Yes

Does the pretreatment program consider CSOs in the calculation of local limits?
No

Are there any restrictions on industrial user discharges to the collection system during wet-weather events?
Yes

Are there any industrial discharges that could reach CSO outfalls?
Yes

Do industrial users upstream of CSOs discharge any bioaccumulative chemicals of concern (BCCs)?
No

Do any industrial users have a holding tank or equalization tank to store wastewater prior to discharge to the CSS?
Yes

In the past year or in the upcoming year, have there been or will there be negotiations or changes to agreements with industrial dischargers, which will potentially reduce impacts during CSO events? Describe these changes below in the narrative box.
No

Use the space below to provide a narrative description of industrial discharges to the collection system, any restrictions on industrial discharges during wet-weather events, and any agreements that will potentially reduce impacts during CSO events.

Syracuse University Chilled Water Plant holds all incoming water softener regeneration process during wet weather events.

BMP No. 4 Maximize Flow to POTW

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6 NYCRR 750-2.7(f), 2.8(a)(2), and 2.8(a)(5)
(EPA NMC No. 4: Maximization of Flow to the POTW for Treatment)

What is the permit required minimum flow during wet weather events through the headworks (in MGD)?
240.00

What is the permit required minimum flow during wet weather events through primary treatment (in MGD)?
126.30

What is the permit required minimum flow during wet weather events through secondary treatment (in MGD)?
126.30

What is the permit required minimum flow during wet weather events through disinfection (in MGD)?
126.30

In the past year, were the headworks, primary treatment works and disinfection works able to pass the flows specified in the permit for all wet weather flows?
Yes

In the past year, was the secondary treatment works able to pass the flows specified in the permit for all wet weather flows?
Yes

In the past year or in the upcoming year, have there been or will there be any physical modifications to the collection system which have allowed more flow to reach the POTW? If yes, describe below in the narrative box.
Yes

Are there areas of the collection system, including pump stations that need additional study to evaluate capacity, condition, or to determine if illegal connections (i.e. inflow) exist? If yes, list below in the narrative box
Yes

In the past year, have any new problem areas been identified that restrict flow to the plant? If yes, list the locations below in the narrative box.
No

Use the space below to provide a narrative description of:
a) any physical modifications to the collection system which are completed or anticipated and will allow for more flow to reach the WWTP,
b) any areas of the collection system which need additional study to evaluate capacity or inflow issues,
c) any known problem areas that restrict flow to the WWTP, and
d) any plans to address hydraulic restrictions (e.g. pipe replacement, construction of relief sewer or overflow tanks, pump station improvements, weir adjustment, smoke/dye testing to identify illicit connections).

The CSO 029 Abatement Project was completed in 2022.

The sewer on Hiawatha Blvd from Solar Street to Van Rensselear Street was lined. In addition, the sewer running from North State Street from Kirkpatrick Street to Catawba Street was also lined.

In 2022 the Richmond St, Sackett St, and Taylor St pump stations were evaluated and the 25% Basis of Design report has been completed in early 2023 by the consulting engineer.

In 2023 the County will evaluate the Kirkpatrick Pump Station for rehabilitation. An RFP will go out in early to mid 2023.

BMP No. 5 Wet Weather Operating Plan

6 NYCRR 750-2.8(a)
(EPA NMC: None)

Does the plan identify the maximum flows through preliminary, primary, secondary treatment, tertiary, and disinfection units?
Yes

In the past year, did treatment of wet weather flows cause any effluent violations or destabilize treatment upon return to normal service? If yes, describe below in the narrative box.
Yes

If the collection system or plant has been modified or upgraded, has the WWOP been modified to reflect new flow rates or new procedures and the revised plan submitted to the NYSDEC Regional Office?
No, no changes

In the upcoming year, are changes to the WWOP expected? If so, describe below in the narrative box.
No

When was the WWOP last updated?
2019

When was the WWOP last submitted and approved by NYSDEC?
2019

Use the space below to provide a narrative description of any changes to the WWOP during the reporting year or anticipated in the upcoming year.

During July and August 2022, there were five secondary bypass events that caused effluent violations. In July there was a chlorine residual violation and August there were 4 Fecal Coliform violations. Operations staff were unable to respond quickly enough to several of these events, resulting in the high Fecal Coliform results. Ultimately, the Outfall-002 Effluent 30-day geometric mean fecal coliform permit limit of 200#cfu/100ml was exceeded with a value of 250#cfu/100ml for the month of August. Wet weather did not destabilize the treatment process at any time in 2022.

BMP No. 6 Prohibition of Dry Weather Overflows

6 NYCRR 750-2.7 and 2.8(b)(2)
(EPA NMC No. 5: Elimination of CSOs During Dry Weather)

In the past year, were there any dry weather overflows?
Yes

Were all dry weather overflows reported via NY-Alert, in accordance with 6 NYCRR 750-2.7?
Yes

Did dry weather overflows lead to improvement of procedures or equipment?
Yes

Has the likelihood of future dry weather overflows been eliminated? If not, describe why below in the narrative box.
No

Use the space below to provide a narrative description of the both the causes of any dry weather events that occurred in the reporting year and resulting changes or improvements that were made to procedures or equipment (e.g. routine inspection schedule, OMIP, inter-municipal agreements, FOG program, removal of illicit connections, I/I Control program, leaky tidegates, adjustment and/or repair of regulators, upgraded auxiliary power, elimination of hydraulic bottlenecks, etc.).

Several dry weather overflows occurred due to water main breaks, roots, and grease.
The County performs weekly inspections on CSOs. The water main break at CSO 052 has since been repaired.

The County submits an annual POTW CSO/SSO Summary Report to the NYSDEC Region 7 Office with Annual Report.

BMP No. 7 Control of Floatables and Settleable Solids

6 NYCRR 750-2.8(a)(4)
(EPA NMC No. 6: Control of Solid and Floatable Materials in CSOs)

In the past year, did any outfalls discharge floating solids, oil and grease, or solids of sewage origin?
No

Indicate which of the following engineering controls or control measures, if any, have been implemented or will be implemented in the upcoming year?
In-line Netting
Catch basin hoods
Source controls (street cleaning, public education, household hazardous waste collection, solid waste collection, recycling, and/or composting of lawn/leaf/roadkill deer)
Booming & Skimming of Open Waters

Use the space below to provide a narrative description of any ongoing issues with control of floatables and settleable solids from CSO outfalls and any existing or planned engineering controls or control measure to be implemented.

Floatable Control Facilities are inspected weekly and after an event. A Skimmer Boat is used to remove floatables with the Syracuse Inner Harbor and near the outlet of Onondaga Creek. Trash pickup is also included in the County's green infrastructure maintenance program.

BMP No. 8 Combined Sewer System Replacement

6 NYCRR 750-2.10(i)
(EPA NMC: None)

In the past year, were any combined sewers designed or constructed that were not approved by NYSDEC?
No

Are there any plans or current projects to separate combined sewers into sanitary & storm sewers?
Yes

Is there an approved engineering plan for the project(s)?
No

Were any cross-connections eliminated in the past year or planned for the upcoming year?
No

In the past year, how many miles of combined sewer were separated?
0.00

In the upcoming year, how many miles of combined sewer are scheduled to be separated?
0.40

Use the space below to provide a narrative description of how this BMP was implemented during the reporting year.

Sewer separation projects along Water Street, Fayette Street, and Forman Ave are in design and are anticipated to begin construction in 2023.

BMP No. 9 Combined Sewer / Extension

6 NYCRR 750-2.10(i)
(EPA NMC: None)

In the past year, were any combined sewers extended?
No

Is any development planned upstream of a combined sewer in the near future?
No

If a plan contained a flow credit requiring removal of I/I, what was the requirement or ratio?
1:1

Use the space below to provide a narrative description of how this BMP was implemented during the reporting year.

The combined sewer system has not been extended. Upstream of the CSS, in the Town of Onondaga, an additional (15) lots were added to the Old Towne Estates, Section 1. Also, (1) lot was added to the Crown Point Extension, Sec. 2 (87B) which sends additional flow to the CSS.

BMP No. 10 Connection Prohibitions

6 NYCRR750-2.9(a)(5)
(EPA NMC: None)

Are new connections prohibited by NYSDEC?
No

In the upcoming year, is any work planned to either increase capacity or reduce hydraulic loading to the WWTP? If so, describe below in the narrative box.
No

BMP No. 11 Septage and Hauled Waste

6 NYCRR750-2.7(f) and 2.8(a)(1)
(EPA NMC: None)

Does the POTW accept septage or hauled waste?
Yes

In the past year, were there any discharges or releases of septage or hauled waste INTO the collection system upstream of a CSO?
No

Are there restrictions on when the POTW accepts hauled waste or septage?
Yes

Is there a dedicated location to discharge septage at the WWTP?
Yes

Does the facility have authorization from NYSDEC to accept hauled waste or septage at a location other than the WWTP?
No

Have there been, or will there be, any changes to the POTW's policy on septage and hauled waste?
No

Use the space below to provide a narrative description of how septage and hauled waste are received by the POTW, where remote acceptance locations are, any POTW restrictions on when these wastes can be received, and the total volume of these wastes received at remote locations during the reporting year.

Wastehaulers are permitted by the Department to deliver wastestreams on their 364 permit with NYS. Haulers complete an invoice describing the waste they are delivering along with other pertinent information. All waste is discharged at an off-load area at the head of the Metropolitan Syracuse Wastewater Treatment Plant. Hauled waste deliveries are suspended during front-end bypass events at the wastewater treatment plant. There are no remote acceptance locations.

BMP No. 12 Control of Runoff

6 NYCRR750- 2.1(e)
(EPA NMC: None)

Is sediment in runoff from construction zones entering catch basins in the combined sewer system?
No

Are impacts of run-off, from development and re-development in areas served by combined sewers, reduced by requiring compliance with the New York Standards for Erosion and Sediment Control and the quantity control requirements included in the New York State Stormwater Management Design Manual?
Yes

Is there adequate communication between the local municipal department that enforces local stormwater codes and ordinances and the collection system staff regarding stormwater runoff?
Yes

Do the municipalities within the combined sewer system have adequate storm water pollution prevention programs to reduce pollutants in stormwater?
Yes

Are any changes needed in the implementation of this BMP to reduce the number of CSO events, the volume discharged, or pollutants in the discharge? If yes, describe below in the narrative box.
No

Use the space below to provide a narrative description of how this BMP was implemented during the reporting year and any planned changes for the upcoming year.

Implementation of planned changes to BMPs are consistent with the Order on Consent Case number R7-202100304-6.

BMP No. 13 Public Notification

6 NYCRR 750-1.12
(EPA NMC No. 8: Public Notification)

In accordance with the Discharge Notification Act Requirements of the SPDES permit, outfall identification signs must be installed and maintained at all permitted CSO outfalls. Are these signs installed and maintained at all permitted CSO outfalls?
Yes

Are all CSO events in accordance with the SPDES permit reported via NY-Alert?
Yes

In accordance with the Sewage Pollution Right to Know Law, as detailed in 6 NYCRR Part 750-2.7, all CSO discharge events must be reported via the NY-Alert electronic notification system.

CSO events not in accordance with the SPDES permit conditions should be reported as a bypass via NY-Alert. When these events occur, are they being reported via NY-Alert?
Yes

Beyond the use of NY-Alert, does the POTW maintain any other public notification systems (e.g. websites, social media, email systems, public media broadcasts) to alert potential users of receiving waters affected by CSOs?
No

For all CSOs to receiving waters that are Class B or higher, a written public notification program (PNP) is required to be developed, implemented, and publicly available to inform citizens of the location and occurrence of CSO events. Is there a written PNP?
Yes

For all CSO communities within the Great Lakes Basin, a written PNP is required. Is your community within the Great Lakes Basin?
Yes

For Great Lakes Basin communities, when was the PNP last updated?
2023

Use the space below to provide a narrative description of how any updates to CSO outfall signs and PNPs, as well as a summary of any other public notification systems (beyond NY-Alert) used to alert the public of CSO events.

CSO outfall signs are publicly posted, routinely checked, and replaced as needed. All CSO events are reported through NY-Alert. The County's website (www.savetherain.us) for CSO Overflow Notification directs the public to the NY-Alert website. Several CSOs discharge into the covered portion of Harbor Brook and the discharges are below grade. There is no signage at CSO #s 003, 005, 006, 006A, 007, 008, 009, 010, 011, and 013 for this reason.

BMP No. 14 Characterization and Monitoring

(6 NYCRR 750-1.11(a), 2.5(a) and 2.7(g))
(EPA NMC No. 9: Monitoring to Characterize CSO Impacts and the Efficacy of CSO Controls)

Has the combined sewer system been modeled for use in determining or estimating the frequency of overflows and identifying CSO impacts?
Yes

Was baseline sampling conducted as part of LTCP development?
Yes

Was any Post Construction Compliance Monitoring (PCCM) sampling conducted in the reporting year or planned for the upcoming year?
Yes

In what years does the SPDES permit, Order on Consent, or other enforcement mechanism require PCCM sampling to be conducted?
annual

CSO discharge monitoring methods should be specified for each CSO outfall in Part II of this Annual Report. For all CSO outfalls that are not metered, explain how overflow volumes are either modeled or estimated to collect sufficient data and document permit compliance and the success of CSO BMP implementation. In addition, please provide a brief summary of the findings from the most recently submitted PCCM Report (including compliance with the selected CSO Policy Approach criteria and attainment of water quality standards).

Representative CSOs were metered and remaining CSOs are modeled using SWMM.
The County submitted the Interim CSO Corrective Measures Plan in 2022. The NYSDEC fully approved the ICMP 9/27/22. Flow monitoring of the representative CSOs are no longer required except if CSOs are required by the Metro SPDES permit.

The CSO Interim Corrective Measures Plan includes an annual PCCM sampling plan. The County continues to monitor tributary sampling locations upstream and downstream of CSOs on Onondaga Creek and Harbor Brook.

Owner/Operator Certification

Owner/Operator Certification Form Download
Download the certification form by clicking the link below. Complete, sign, scan, and upload the form.
Owner/Operator Certification Form (PDF)

Upload Owner/Operator Certification Form
csobmpcert_2023_OCDWEP.pdf - 03/30/2023 09:00 AM
Comment
NONE PROVIDED

Attachments

Date	Attachment Name	Context	User
3/30/2023 9:00 AM	csobmpcert_2023_OCDWEP.pdf	Attachment	Emily Procopio

Status History

	User	Processing Status
2/9/2023 2:47:10 PM	Kelly O'Brien	Draft
3/30/2023 9:19:46 AM	Emily Procopio	Submitted
3/30/2023 9:19:46 AM	Emily Procopio	Deemed Complete

Processing Steps

Step Name	Assigned To/Completed By	Date Completed
Form Submitted	Emily Procopio	3/30/2023 9:19:46 AM

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Water
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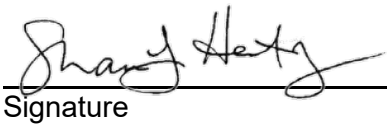
NYSDEC State Pollution Discharge Elimination System (SPDES) Combined Sewer Overflow Best Management Practices Annual Report

OWNER/OPERATOR CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Shannon L. Harty, P.E.		03/30/2023
Name (please print or type)	Signature	Date

Appendix A1

Service Area Summary Report “City of Syracuse” (2022)

Service Area Summary Report

For overflows between: 1/1/22 *And* 1/1/23

For service area: *City of Syracuse*

Overflow ID	Type	Service Area / Municipality	Facility	Date Began	Date Ended	Duration (hours)	Volume Gallons	Receiving Water	Cause	POTW
596	CSO	City of Syracuse	CSO 027	02/11/2022	02/11/2022	1.00	1,000	Onondaga Creek	Sewer line was overwhelmed due to a City of Syracuse water main break.	Metropolitan Syracuse
597	SSO	City of Syracuse	100 Block of Rigi Ave (SL37948)	02/17/2022	02/18/2022	2.00	0	None (Basement Backup)	The cause was attributed to an Onondaga County owned twelve-inch vitrified clay tile sewer pipe that was surcharged due to excessive grease, causing the sewer line to back up into a basement.	Metropolitan Syracuse
602	SSO	City of Syracuse	Liverpool Force Main	02/24/2022	02/24/2022	5.50	330	Onondaga Creek	Broken Force Main	Metropolitan Syracuse
603	SSO	City of Syracuse	CSO 078 @ Velasko Road	04/14/2022	04/14/2022	1.30	42,300	Harbor Brook	Combined sewer was overwhelmed due to the Bellevue County Club's discharge of their golf course pond.	Metropolitan Syracuse
612	SSO	City of Syracuse	CSO 031	06/30/2022	06/30/2022	3.50	4,200	Onondaga Creek	An 8", clay tile, combined sewer was blocked with grease build-up causing a dry-weather discharge to Onondaga Creek.	Metropolitan Syracuse

Appendix B1

CSO Facility Performance Summary (2022)

CSO Facility Performance Summary (2022)

CSO Facility	Quarter	Estimated CSO Volume Retained (gallons)	Estimated Treated CSO Volume Discharged (gallons)	Estimated Untreated CSO Volume Discharged
Clinton Storage Facility (CSF)-CSO 033A	First	9,286,506	0	0
	Second	18,399,867	0	0
	Third	24,556,078	0	2,405,217
	Fourth	8,412,208	0	5,532,691
Total (CSF)		60,654,659	0	7,937,908
Erie Boulevard Storage System (EBSS)- CSO 080	First	6,100,000	0	3,433,127
	Second	13,700,000	0	1,126,398
	Third	20,700,000	0	1,910,983
	Fourth	5,500,000	0	4,789,813
Total (EBSS)		46,000,000		11,260,321
Midland RTF-Main Outfall M01 and Emergency Bypass Outfall M02	First	11,248,200	6,142,000	0
	Second	20,850,000	4,366,000	1,872,222
	Third	17,569,600	13,468,000	1,500,694
	Fourth	9,100,600	10,878,000	0
Total (Midland RTF)		58,768,400	34,854,000	3,372,916
Hiawatha Regional Treatment Facility (CSO 074)	First	0	0	0
	Second	280,829	0	0
	Third	1,133,259	23,722	0
	Fourth	274,524	0	0
Total (Hiawatha RTF)		1,688,612	23,722	0
CSO 018 Pilot Constructed Wetlands Treatment Facility Main Outfall 018	First	see note [1]	1,000,000	0
	Second	see note [1]	220,000	0
	Third	2,160,000	2,860,000	0
	Fourth	280,000	1,060,000	0
Total (CSO 18 PCWTF)		2,440,000	5,140,000	0
Lower Harbor Brook Storage Facility (LHBSF)-CSO 04A	First	5,898,567	0	0
	Second	8,200,595	0	0
	Third	18,002,237	0	358,681
	Fourth	6,652,423	0	0
Total (LHBSF)		38,753,822	0	358,681
TOTAL		208,305,493	40,017,722	22,929,826

[1]The AV sensor on the influent flow meter malfunctioned; data unavailable

phase outage.

Appendix C1

Floatables Control Report (2022)

ONONDAGA COUNTY, DEPARTMENT OF WATER ENVIRONMENT PROTECTION

2022 FLOATABLE CONTROL SUMMARY

This report summarizes the efforts to address floatable material in the areas impacted by the combined sewer overflow (CSO) system within the Onondaga County Consolidated Sanitary District. Onondaga County currently operates five (5) floatable control facilities (FCF). These include the Burnet FCF, Butternut FCF, and Maltbie FCF net bag facilities tributary to Onondaga Creek, the Harbor Brook FCF net bag facility within Harbor Brook and the Teall FCF combing screen facility tributary to Teall Brook.

Onondaga County personnel, at a minimum, perform weekly inspections of the floatable control facilities (FCF) regardless of the weather that has occurred. After each wet-weather event, County personnel inspect each floatable control facility to evaluate system performance, identify problems, and clean and schedule net bag replacement, as warranted. When net bags reach approximately 30%-40% of capacity (or as otherwise needed), replacement is scheduled. Table 1 is a Floatable Control Facility Debris Disposal Summary and disposal amounts are combined for all the facilities. Table 2 contains information about the individual FCFs and the associated debris.

Table 1: 2022 Floatable Control Facility Debris Disposal Summary

Date of Disposal	Debris (tons)
2/23/2022	2.04
4/25/2022	1.84
5/26/22	1.56
6/13/22	2.15
7/19/22	1.70
8/12/22	2.13
8/27/22	1.94
9/29/22	2.47
11/28/22	1.73
Total	17.57

Table 2: 2018-2022 Floatable Control Facility Operation Comparison

Year	Burnet FCF		Butternut FCF		Maltbie FCF		Harbor Brook FCF	
	Net Bags Replaced (#)	Debris (tons)	Net Bags Replaced (#)	Debris (tons)	Net Bags Replaced (#)	Debris (tons)	Net Bags Replaced (#)	Debris (tons)
2018	84	8.51	120	12.65	30	3.19	24	2.60
2019	114	10.6	160	14.93	39	3.73	42	4.17
2020	72	7.23	96	9.49	33	3.03	27	2.97
2021	66	6.41	88	8.55	33	3.20	30	2.94
2022	54	5.46	72	7.28	24	2.46	24	2.37

SKIMMER BOAT OPERATION

The County has contracted services to operate a skimmer boat providing floatables debris collection and disposal in the Inner Harbor of Syracuse, along the mouth of Onondaga Creek, as well as the near-shore portions of Onondaga Lake within 1,000 feet of the mouth of Onondaga Creek, with an option for the skimmer boat service to Onondaga Lake shorelines east and west. In 2022, a total of x tons of debris was collected by the skimmer boat operation. The quantity of debris collected after heavy prolonged rain events is greater than dry weather periods.

The debris collected typically consisted of the following elements: leaves, grass and brush, tree limbs and logs, plastic styrene food packaging, plastic containers, bottles, aluminum cans, playground equipment (balls, sneakers, etc.), pharmaceutical bottles, blister packs and syringes, sanitary items, construction barricades, pallets and lumber, and dead fish.

Table 3: 2021 Summary of Skimmer Boat Operation

Month	Operation Days
April	7
May	9
June	8
July	8
August	8
September	6
October	10
November	12
Total	**68**

Table 4: 2021 Summary of Skimmer Boat Debris Disposal

Date of Disposal	Debris (tons)
6/10/22	1.23
6/17/22	0.96
8/10/22	2.13
9/2/22	1.34
10/12/22	1.03
12/2/22	0.81
11/17/22	1.40
11/29/22	0.94
Total	**9.84**

GREEN INFRASTRUCTURE MAINTENANCE

In addition, the County conducts green infrastructure maintenance which includes several scheduled and corrective work procedures related to the control of floatable debris. These include general trash clean up, in 2022 the County collected 300 bags (55 gallon bags) approximately 80 Cubic Yards of trash from our green infrastructure projects.

Appendix D1

CSO Flow Metering Quarterly Reports and Graphs (2022)

CSO 014
2022

Date	Discharge Volume	Event Duration (mins)	Metro WWTP Rainfall Data (inches)		
			5-Minute Max	1-Hour Max	Daily Total
1/1/2022	0	0	0.01	0.08	0.31
1/2/2022	0	0	0.01	0.07	0.07
1/3/2022	0	0	0	0	0
1/4/2022	0	0	0	0	0
1/5/2022	0	0	0	0	0
1/6/2022	0	0	0	0	0
1/7/2022	0	0	0.01	0.03	0.11
1/8/2022	0	0	0	0	0
1/9/2022	0	0	0.02	0.07	0.15
1/10/2022	0	0	0.01	0.03	0.03
1/11/2022	0	0	0	0	0
1/12/2022	0	0	0	0	0
1/13/2022	0	0	0.01	0.01	0.02
1/14/2022	0	0	0	0	0
1/15/2022	0	0	0	0	0
1/16/2022	0	0	0.01	0.07	0.12
1/17/2022	0	0	0.02	0.16	0.67
1/18/2022	0	0	0	0	0
1/19/2022	0	0	0	0	0
1/20/2022	0	0	0	0	0
1/21/2022	0	0	0	0	0
1/22/2022	0	0	0	0	0
1/23/2022	0	0	0.01	0.01	0.01
1/24/2022	0	0	0.01	0.01	0.03
1/25/2022	0	0	0.01	0.03	0.06
1/26/2022	0	0	0	0	0
1/27/2022	0	0	0	0	0
1/28/2022	0	0	0.01	0.01	0.01
1/29/2022	0	0	0	0	0
1/30/2022	0	0	0	0	0
1/31/2022	0	0	0	0	0
January Total	0	0			1.59
2/1/2022	0	0	0	0	0
2/2/2022	0	0	0.01	0.04	0.04
2/3/2022	0	0	0.01	0.08	0.65
2/4/2022	0	0	0.01	0.06	0.22
2/5/2022	0	0	0	0	0
2/6/2022	0	0	0.01	0.01	0.01
2/7/2022	0	0	0	0	0
2/8/2022	0	0	0	0	0
2/9/2022	0	0	0	0	0
2/10/2022	0	0	0.01	0.03	0.05
2/11/2022	0	0	0.01	0.09	0.18
2/12/2022	0	0	0.02	0.03	0.03
2/13/2022	0	0	0	0	0
2/14/2022	0	0	0	0	0
2/15/2022	0	0	0	0	0
2/16/2022	0	0	0	0	0

CSO 014
2022

Date	Discharge Volume	Event Duration (mins)	Metro WWTP Rainfall Data (inches)		
			5-Minute Max	1-Hour Max	Daily Total
2/17/2022	0	0	0.02	0.09	0.42
2/18/2022	81,459	130	0.03	0.27	0.55
2/19/2022	0	0	0.01	0.01	0.02
2/20/2022	0	0	0	0	0
2/21/2022	0	0	0	0	0
2/22/2022	0	0	0.03	0.12	0.41
2/23/2022	0	0	0.01	0.05	0.02
2/24/2022	0	0	0	0	0
2/25/2022	0	0	0.02	0.14	0.43
2/26/2022	0	0	0.01	0.01	0.01
2/27/2022	0	0	0.01	0.01	0.01
2/28/2022	0	0	0	0	0
February Total	81,459	130			3.05
3/1/2022	0	0	0.01	0.07	0.09
3/2/2022	0	0	0.01	0.05	0.12
3/3/2022	0	0	0.01	0.03	0.06
3/4/2022	0	0	0	0	0
3/5/2022	0	0	0	0	0
3/6/2022	0	0	0	0	0
3/7/2022	0	0	0.05	0.17	0.49
3/8/2022	0	0	0.01	0.01	0.01
3/9/2022	0	0	0.01	0.06	0.2
3/10/2022	0	0	0	0	0
3/11/2022	0	0	0.01	0.03	0.03
3/12/2022	0	0	0.01	0.04	0.27
3/13/2022	0	0	0	0	0
3/14/2022	0	0	0	0	0
3/15/2022	0	0	0.01	0.02	0.05
3/16/2022	0	0	0	0	0
3/17/2022	0	0	0	0	0
3/18/2022	0	0	0	0	0
3/19/2022	1,513	5	0.11	0.21	0.82
3/20/2022	0	0	0.01	0.03	0.09
3/21/2022	0	0	0	0	0
3/22/2022	0	0	0	0	0
3/23/2022	0	0	0.01	0.01	0.01
3/24/2022	0	0	0.01	0.02	0.02
3/25/2022	0	0	0.02	0.1	0.26
3/26/2022	0	0	0.01	0.02	0.02
3/27/2022	0	0	0.01	0.03	0.13
3/28/2022	46	5	0.01	0.03	0.06
3/29/2022	0	0	0	0	0
3/30/2022	0	0	0	0	0
3/31/2022	0	0	0.03	0.04	0.04
March Total	1,559	10			2.77
4/1/2022	50	5	0.01	0.05	0.13
4/2/2022	0	0	0	0	0
4/3/2022	0	0	0.01	0.07	0.34

CSO 014
2022

Date	Discharge Volume	Event Duration (mins)	Metro WWTP Rainfall Data (inches)		
			5-Minute Max	1-Hour Max	Daily Total
4/4/2022	0	0	0	0	0
4/5/2022	0	0	0	0	0
4/6/2022	0	0	0.01	0.05	0.05
4/7/2022	0	0	0.03	0.22	1.33
4/8/2022	0	0	0.01	0.05	0.06
4/9/2022	0	0	0.01	0.01	0.02
4/10/2022	0	0	0.01	0.04	0.06
4/11/2022	0	0	0.01	0.03	0.04
4/12/2022	0	0	0.01	0.06	0.22
4/13/2022	0	0	0	0	0
4/14/2022	0	0	0.01	0.06	0.08
4/15/2022	0	0	0	0	0
4/16/2022	0	0	0.03	0.08	0.33
4/17/2022	0	0	0.01	0.03	0.03
4/18/2022	0	0	0.01	0.1	0.34
4/19/2022	30	5	0.05	0.13	0.63
4/20/2022	0	0	0.01	0.05	0.06
4/21/2022	0	0	0.01	0.03	0.03
4/22/2022	0	0	0	0	0
4/23/2022	0	0	0	0	0
4/24/2022	0	0	0	0	0
4/25/2022	0	0	0	0	0
4/26/2022	0	0	0.01	0.02	0.05
4/27/2022	0	0	0.01	0.01	0.01
4/28/2022	0	0	0	0	0
4/29/2022	0	0	0	0	0
4/30/2022	0	0	0	0	0
April Total	80	10			3.81
5/1/2022	0	0	0	0	0
5/2/2022	0	0	0.04	0.16	0.27
5/3/2022	0	0	0	0	0
5/4/2022	21	5	0.04	0.31	0.65
5/5/2022	0	0	0	0	0
5/6/2022	0	0	0	0	0
5/7/2022	0	0	0	0	0
5/8/2022	0	0	0	0	0
5/9/2022	0	0	0	0	0
5/10/2022	0	0	0	0	0
5/11/2022	0	0	0	0	0
5/12/2022	0	0	0	0	0
5/13/2022	0	0	0	0	0
5/14/2022	0	0	0.02	0.02	0.02
5/15/2022	0	0	0	0	0
5/16/2022	0	0	0.06	0.14	0.25
5/17/2022	0	0	0.01	0.03	0.03
5/18/2022	0	0	0	0	0
5/19/2022	0	0	0.07	0.11	0.19
5/20/2022	0	0	0.01	0.01	0.01

CSO 014
2022

Date	Discharge Volume	Event Duration (mins)	Metro WWTP Rainfall Data (inches)		
			5-Minute Max	1-Hour Max	Daily Total
5/21/2022	0	0	0.03	0.05	0.05
5/22/2022	62	5	0.1	0.29	0.29
5/23/2022	0	0	0	0	0
5/24/2022	0	0	0	0	0
5/25/2022	0	0	0	0	0
5/26/2022	0	0	0	0	0
5/27/2022	1,915	20	0.09	0.28	0.40
5/28/2022	0	0	0.01	0.02	0.04
5/29/2022	0	0	0	0	0
5/30/2022	0	0	0	0	0
5/31/2022	0	0	0	0	0
May Total	1,998	30			2.20
6/1/2022	318	20	0.19	0.82	1.19
6/2/2022	0	0	0	0	0
6/3/2022	0	0	0	0	0
6/4/2022	0	0	0	0	0
6/5/2022	0	0	0	0	0
6/6/2022	0	0	0	0	0
6/7/2022	213	30	0.05	0.18	0.39
6/8/2022	0	0	0.01	0.07	0.01
6/9/2022	77	5	0.05	0.18	0.45
6/10/2022	0	0	0	0	0
6/11/2022	0	0	0	0	0
6/12/2022	33	5	0.04	0.14	0.19
6/13/2022	0	0	0	0	0
6/14/2022	0	0	0	0	0
6/15/2022	0	0	0	0	0
6/16/2022	64,074	20	0.32	0.77	0.93
6/17/2022	0	0	0	0	0
6/18/2022	0	0	0.02	0.06	0.06
6/19/2022	0	0	0	0	0
6/20/2022	0	0	0	0	0
6/21/2022	0	0	0	0	0
6/22/2022	0	0	0	0	0
6/23/2022	0	0	0.01	0.04	0.05
6/24/2022	0	0	0	0	0
6/25/2022	0	0	0	0	0
6/26/2022	0	0	0.07	0.16	0.16
6/27/2022	0	0	0.05	0.07	0.13
6/28/2022	0	0	0	0	0
6/29/2022	0	0	0	0	0
6/30/2022	0	0	0	0	0
June Total	64,715	80			3.56
7/1/2022	0	0	0	0	0
7/2/2022	0	0	0.02	0.07	0.11
7/3/2022	0	0	0	0	0
7/4/2022	0	0	0	0	0
7/5/2022	0	0	0.02	0.09	0.11

CSO 014
2022

Date	Discharge Volume	Event Duration (mins)	Metro WWTP Rainfall Data (inches)		
			5-Minute Max	1-Hour Max	Daily Total
7/6/2022	0	0	0.01	0.01	0.01
7/7/2022	0	0	0	0	0
7/8/2022	0	0	0	0	0
7/9/2022	0	0	0	0	0
7/10/2022	0	0	0	0	0
7/11/2022	0	0	0	0	0
7/12/2022	0	0	0.03	0.07	0.07
7/13/2022	848	10	0.36	0.54	0.54
7/14/2022	0	0	0	0	0
7/15/2022	0	0	0	0	0
7/16/2022	0	0	0	0	0
7/17/2022	0	0	0	0	0
7/18/2022	239	30	0.03	0.13	0.49
7/19/2022	0	0	0	0	0
7/20/2022	0	0	0	0	0
7/21/2022	0	0	0.01	0.01	0.03
7/22/2022	0	0	0	0	0
7/23/2022	0	0	0	0	0
7/24/2022	1200	15	0.16	0.44	0.89
7/25/2022	25	20	0.13	0.43	0.57
7/26/2022	0	0	0	0	0
7/27/2022	0	0	0	0	0
7/28/2022	0	0	0.01	0.01	0.02
7/29/2022	0	0	0	0	0
7/30/2022	0	0	0	0	0
7/31/2022	0	0	0	0	0
July Total	2312	75			2.84
8/1/2022	0	0	0	0	0
8/2/2022	0	0	0	0	0
8/3/2022	0	0	0	0	0
8/4/2022	0	0	0.02	0.03	0.03
8/5/2022	35	20	0.31	0.83	0.83
8/6/2022	0	0	0	0	0
8/7/2022	0	0	0.01	0.01	0.02
8/8/2022	0	0	0.21	0.4	0.54
8/9/2022	0	0	0.04	0.12	0.11
8/10/2022	0	0	0.01	0.01	0.01
8/11/2022	0	0	0	0	0
8/12/2022	0	0	0	0	0
8/13/2022	0	0	0	0	0
8/14/2022	0	0	0	0	0
8/15/2022	0	0	0	0	0
8/16/2022	0	0	0	0	0
8/17/2022	0	0	0.03	0.06	0.06
8/18/2022	0	0	0	0	0
8/19/2022	0	0	0	0	0
8/20/2022	0	0	0.09	0.16	0.16
8/21/2022	193,936	165	0.18	0.72	1.47

CSO 014
2022

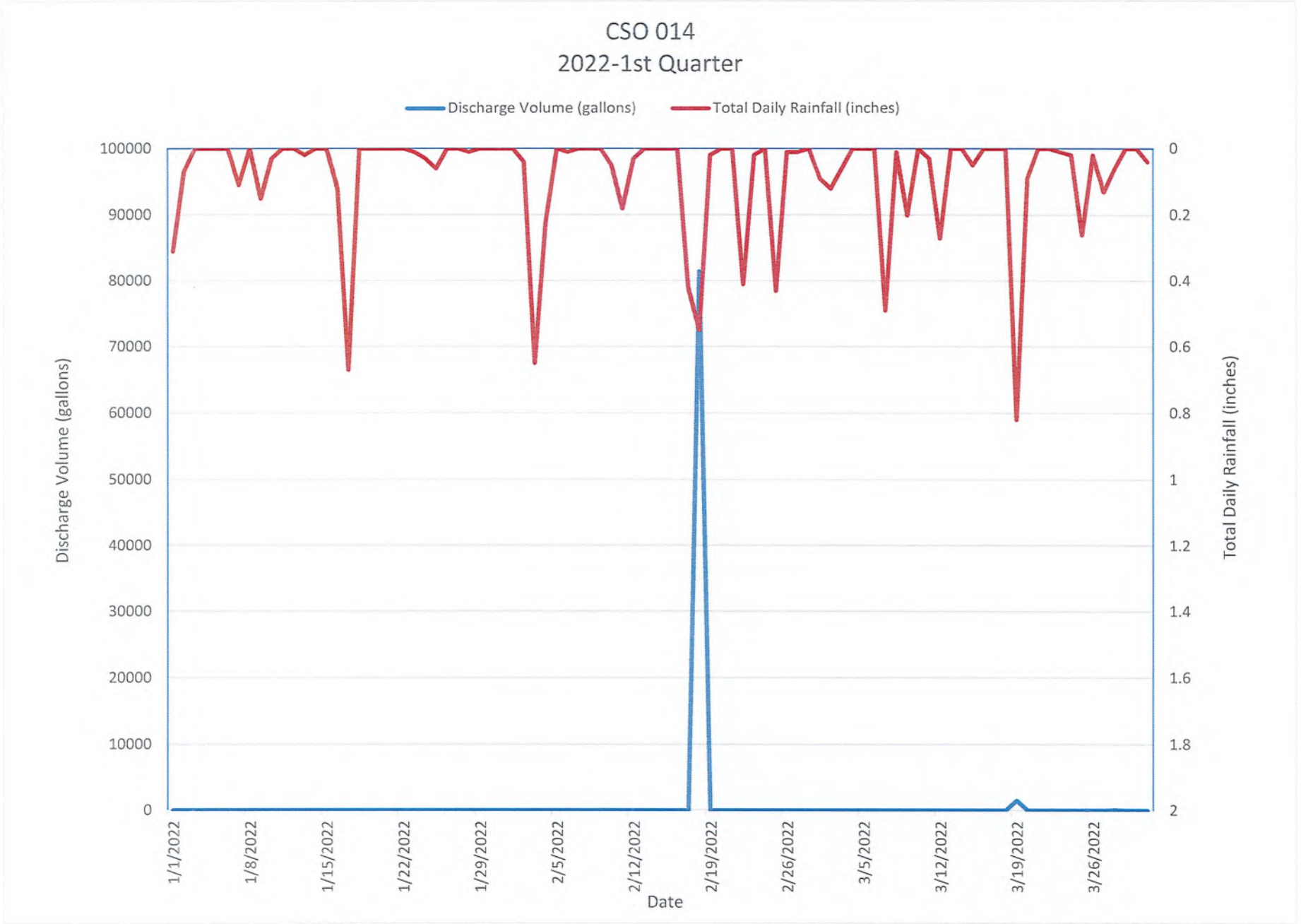
Date	Discharge Volume	Event Duration (mins)	Metro WWTP Rainfall Data (inches)		
			5-Minute Max	1-Hour Max	Daily Total
8/22/2022	5,214	80	0.14	0.36	0.94
8/23/2022	499	25	0.01	0.02	0.04
8/24/2022	0	0	0	0	0
8/25/2022	9	5	0.08	0.18	0.18
8/26/2022	0	0	0.01	0.01	0.01
8/27/2022	0	0	0	0	0
8/28/2022	0	0	0	0	0
8/29/2022	0	0	0.01	0.01	0.01
8/30/2022	7007	50	0.21	0.65	0.9
8/31/2022	0	0	0.01	0.01	0.01
August Total	206,700	345			5.32
9/1/2022	0	0	0.01	0.03	0.03
9/2/2022	0	0	0	0	0
9/3/2022	0	0	0	0	0
9/4/2022	0	0	0.01	0.07	0.08
9/5/2022	0	0	0.01	0.08	0.26
9/6/2022	0	0	0.01	0.01	0.03
9/7/2022	0	0	0.02	0.09	0.31
9/8/2022	0	0	0.01	0.05	0.08
9/9/2022	0	0	0	0	0
9/10/2022	0	0	0	0	0
9/11/2022	0	0	0.01	0.02	0.03
9/12/2022	0	0	0.01	0.01	0.01
9/13/2022	0	0	0.04	0.08	0.17
9/14/2022	0	0	0	0	0
9/15/2022	0	0	0	0	0
9/16/2022	0	0	0	0	0
9/17/2022	0	0	0	0	0
9/18/2022	0	0	0.01	0.01	0.01
9/19/2022	121,337	70	0.36	0.76	1.74
9/20/2022	0	0	0.02	0.03	0.04
9/21/2022	0	0	0	0	0
9/22/2022	0	0	0.02	0.15	0.36
9/23/2022	0	0	0.01	0.02	0.03
9/24/2022	0	0	0	0	0
9/25/2022	0	0	0.01	0.06	0.12
9/26/2022	0	0	0.02	0.04	0.09
9/27/2022	1,966	25	0.07	0.18	0.53
9/28/2022	139	5	0.04	0.14	0.48
9/29/2022	0	0	0	0	0
9/30/2022	0	0	0	0	0
September Total	123,442	100			4.40
10/1/2022	0	0	0	0	0
10/2/2022	0	0	0	0	0
10/3/2022	0	0	0	0	0
10/4/2022	0	0	0	0	0
10/5/2022	0	0	0	0	0
10/6/2022	0	0	0	0	0

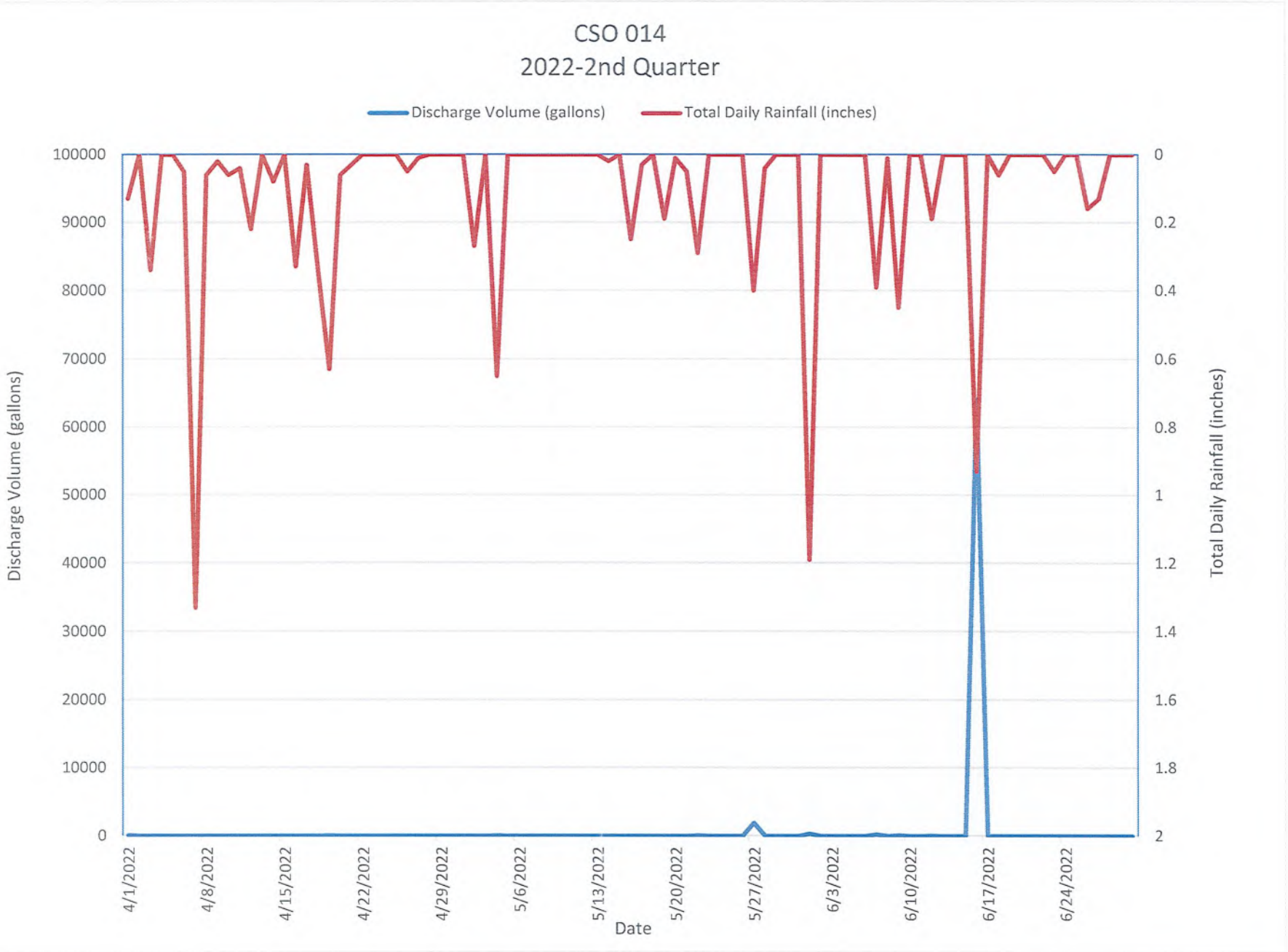
CSO 014
2022

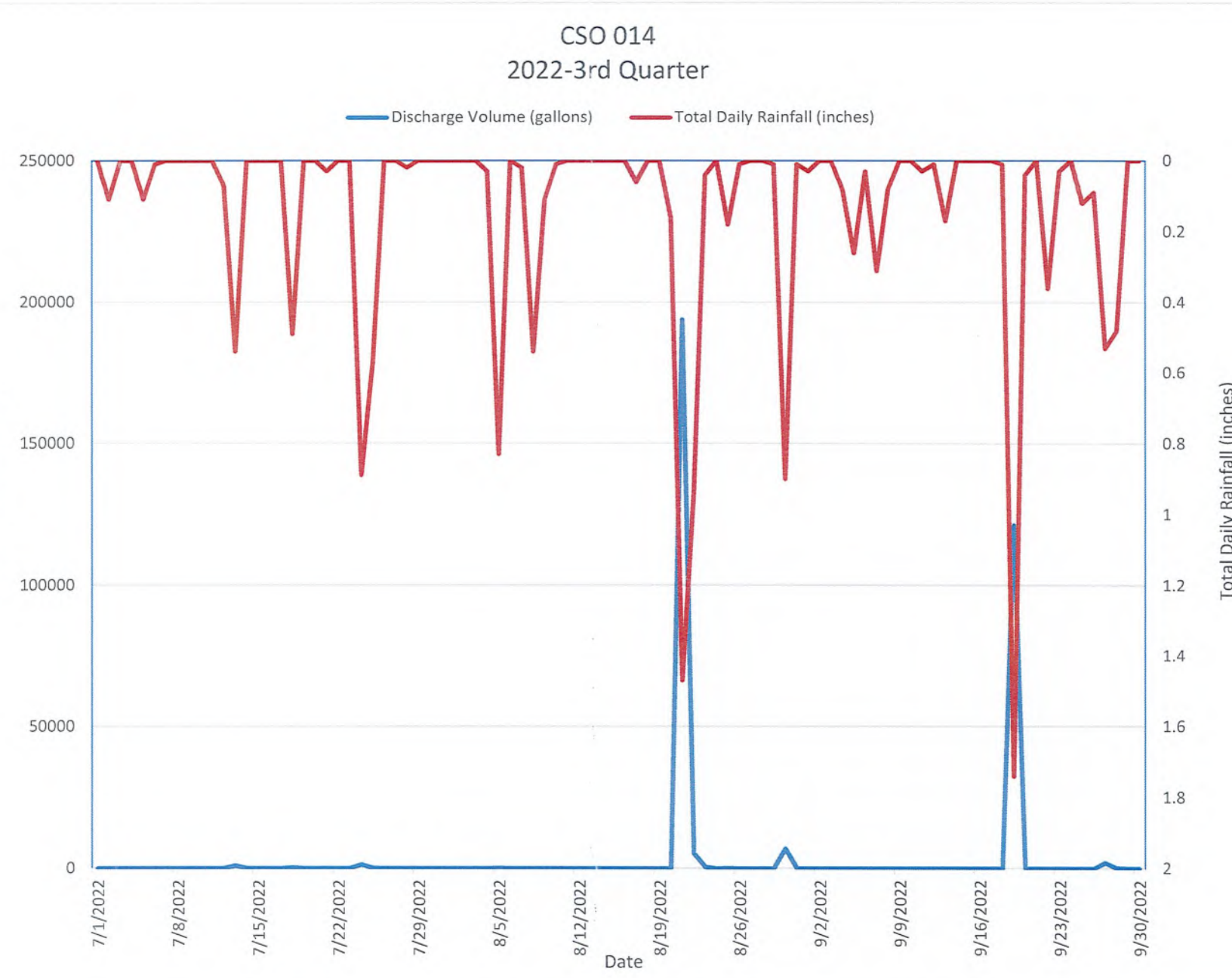
Date	Discharge Volume	Event Duration (mins)	Metro WWTP Rainfall Data (inches)		
			5-Minute Max	1-Hour Max	Daily Total
10/7/2022	0	0	0.01	0.01	0.01
10/8/2022	0	0	0.01	0.04	0.12
10/9/2022	0	0	0	0	0
10/10/2022	0	0	0.01	0.02	0.02
10/11/2022	0	0	0	0	0
10/12/2022	0	0	0	0	0
10/13/2022	0	0	0.07	0.25	0.63
10/14/2022	0	0	0.01	0.02	0.01
10/15/2022	0	0	0	0	0
10/16/2022	0	0	0	0	0
10/17/2022	0	0	0.01	0.06	0.09
10/18/2022	0	0	0.02	0.04	0.07
10/19/2022	0	0	0.01	0.01	0.03
10/20/2022	0	0	0.01	0.02	0.05
10/21/2022	0	0	0	0	0
10/22/2022	0	0	0	0	0
10/23/2022	0	0	0	0	0
10/24/2022	0	0	0	0	0
10/25/2022	0	0	0	0	0
10/26/2022	0	0	0.01	0.04	0.04
10/27/2022	0	0	0.01	0.01	0.01
10/28/2022	0	0	0	0	0
10/29/2022	0	0	0	0	0
10/30/2022	0	0	0	0	0
10/31/2022	0	0	0	0	0
October Total	0	0			1.08
11/1/2022	0	0	0	0	0
11/2/2022	0	0	0	0	0
11/3/2022	0	0	0	0	0
11/4/2022	0	0	0	0	0
11/5/2022	0	0	0	0	0
11/6/2022	0	0	0.03	0.14	0.2
11/7/2022	0	0	0	0	0
11/8/2022	0	0	0	0	0
11/9/2022	0	0	0	0	0
11/10/2022	0	0	0	0	0
11/11/2022	1,544	5	0.09	0.41	1.17
11/12/2022	153,111	55	0.07	0.69	1.43
11/13/2022	0	0	0.01	0.07	0.18
11/14/2022	0	0	0	0.01	0
11/15/2022	0	0	0.02	0.07	0.1
11/16/2022	0	0	0.02	0.04	0.22
11/17/2022	0	0	0	0	0
11/18/2022	0	0	0.01	0.01	0.01
11/19/2022	0	0	0	0	0
11/20/2022	0	0	0	0	0
11/21/2022	0	0	0	0	0
11/22/2022	0	0	0	0	0

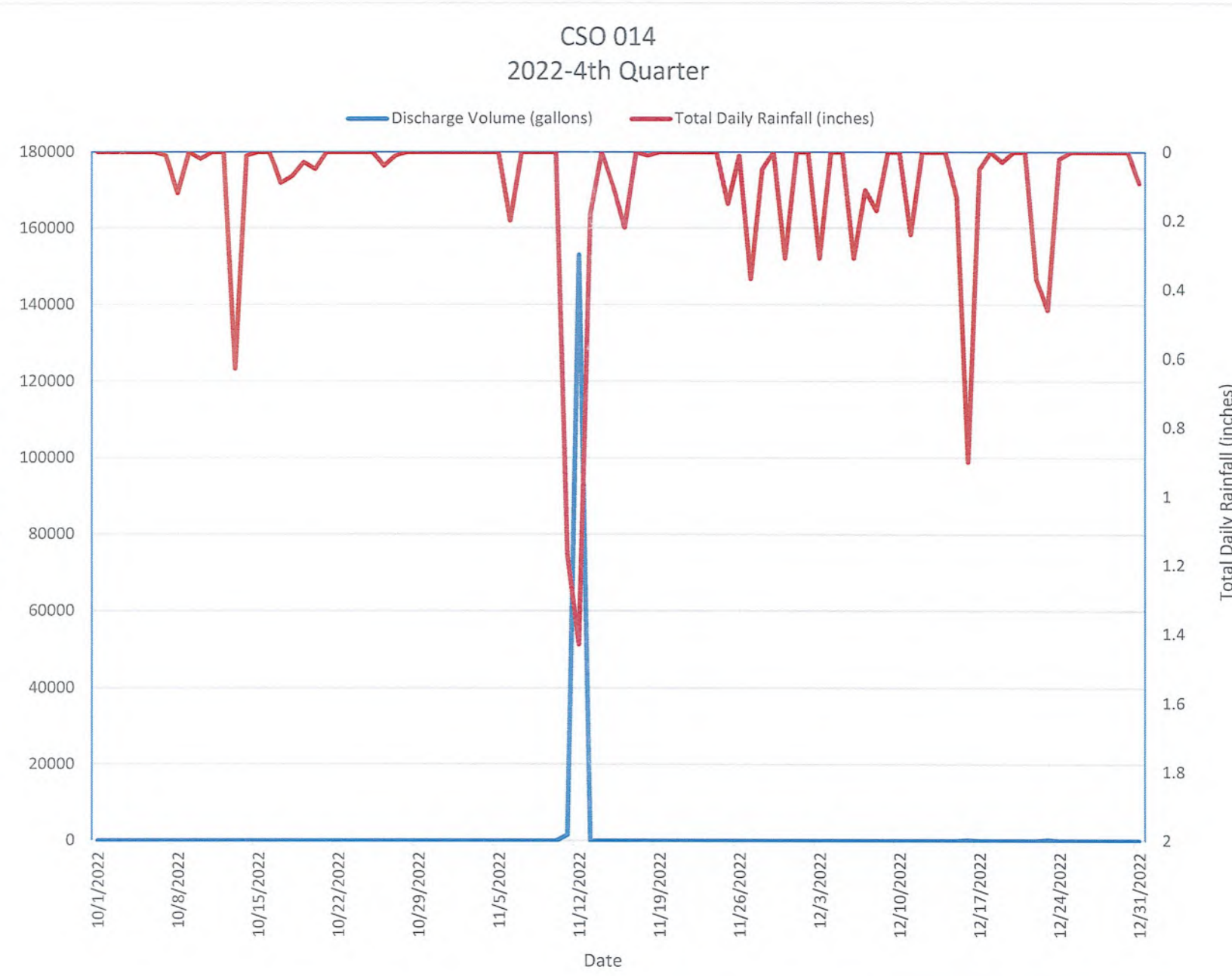
CSO 014
2022

Date	Discharge Volume	Event Duration (mins)	Metro WWTP Rainfall Data (inches)		
			5-Minute Max	1-Hour Max	Daily Total
11/23/2022	0	0	0	0	0
11/24/2022	0	0	0	0	0
11/25/2022	0	0	0.02	0.08	0.15
11/26/2022	0	0	0.01	0.01	0.01
11/27/2022	0	0	0.02	0.1	0.37
11/28/2022	0	0	0.01	0.03	0.05
11/29/2022	0	0	0	0	0
11/30/2022	0	0	0.05	0.14	0.31
November Total	154,655	60			4.20
12/1/2022	0	0	0	0	0
12/2/2022	0	0	0	0	0
12/3/2022	0	0	0.02	0.12	0.31
12/4/2022	0	0	0	0	0
12/5/2022	0	0	0	0	0
12/6/2022	0	0	0.02	0.17	0.31
12/7/2022	0	0	0.01	0.03	0.11
12/8/2022	0	0	0.01	0.06	0.17
12/9/2022	0	0	0	0	0
12/10/2022	0	0	0	0	0
12/11/2022	0	0	0.02	0.06	0.24
12/12/2022	0	0	0	0	0
12/13/2022	0	0	0	0	0
12/14/2022	0	0	0	0	0
12/15/2022	0	0	0.01	0.04	0.13
12/16/2022	171	5	0.01	0.08	0.9
12/17/2022	0	0	0.01	0.02	0.05
12/18/2022	0	0	0	0	0
12/19/2022	0	0	0.01	0.02	0.03
12/20/2022	0	0	0	0	0
12/21/2022	0	0	0	0	0
12/22/2022	0	0	0.02	0.12	0.37
12/23/2022	251	65	0.05	0.1	0.46
12/24/2022	0	0	0.01	0.01	0.02
12/25/2022	0	0	0	0	0
12/26/2022	0	0	0	0	0
12/27/2022	0	0	0	0	0
12/28/2022	0	0	0	0	0
12/29/2022	0	0	0	0	0
12/30/2022	0	0	0	0	0
12/31/2022	0	0	0.01	0.05	0.09
December Total	422	70			3.19


CSO 014
2022-1st Quarter
Discharge Volume (gallons)
Total Daily Rainfall (inches)
Discharge Volume (gallons)
Total Daily Rainfall (inches)
100000
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8
2
1/1/2022
1/8/2022
1/15/2022
1/22/2022
1/29/2022
2/5/2022
2/12/2022
2/19/2022
2/26/2022
3/5/2022
3/12/2022
3/19/2022
3/26/2022
Date


CSO 014
2022-2nd Quarter
Discharge Volume (gallons)
Total Daily Rainfall (inches)
100000
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8
2
4/1/2022
4/8/2022
4/15/2022
4/22/2022
4/29/2022
5/6/2022
5/13/2022
5/20/2022
5/27/2022
6/3/2022
6/10/2022
6/17/2022
6/24/2022
Date


CSO 014
2022-3rd Quarter
Discharge Volume (gallons)
Total Daily Rainfall (inches)
250000
200000
150000
100000
50000
0
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8
2
Total Daily Rainfall (inches)
7/1/2022
7/8/2022
7/15/2022
7/22/2022
7/29/2022
8/5/2022
8/12/2022
8/19/2022
8/26/2022
9/2/2022
9/9/2022
9/16/2022
9/23/2022
9/30/2022
Date


CSO 014
2022-4th Quarter
Discharge Volume (gallons)
Total Daily Rainfall (inches)
180000
160000
140000
120000
100000
80000
60000
40000
20000
0
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8
2
Total Daily Rainfall (inches)
10/1/2022
10/8/2022
10/15/2022
10/22/2022
10/29/2022
11/5/2022
11/12/2022
11/19/2022
11/26/2022
12/3/2022
12/10/2022
12/17/2022
12/24/2022
12/31/2022
Date

CSO 027
2022

Date	Discharge Volume	Event Duration (mins)	Metro WWTP Rainfall Data (inches)		
			5-Minute Max	1-Hour Max	Daily Total
1/1/2022	0	0	0.01	0.08	0.31
1/2/2022	0	0	0.01	0.07	0.07
1/3/2022	0	0	0	0	0
1/4/2022	0	0	0	0	0
1/5/2022	0	0	0	0	0
1/6/2022	0	0	0	0	0
1/7/2022	0	0	0.01	0.03	0.11
1/8/2022	0	0	0	0	0
1/9/2022	0	0	0.02	0.07	0.15
1/10/2022	0	0	0.01	0.03	0.03
1/11/2022	0	0	0	0	0
1/12/2022	0	0	0	0	0
1/13/2022	0	0	0.01	0.01	0.02
1/14/2022	0	0	0	0	0
1/15/2022	0	0	0	0	0
1/16/2022	0	0	0.01	0.07	0.12
1/17/2022	0	0	0.02	0.16	0.67
1/18/2022	0	0	0	0	0
1/19/2022	0	0	0	0	0
1/20/2022	0	0	0	0	0
1/21/2022	0	0	0	0	0
1/22/2022	0	0	0	0	0
1/23/2022	0	0	0.01	0.01	0.01
1/24/2022	0	0	0.01	0.01	0.03
1/25/2022	0	0	0.01	0.03	0.06
1/26/2022	0	0	0	0	0
1/27/2022	0	0	0	0	0
1/28/2022	0	0	0.01	0.01	0.01
1/29/2022	0	0	0	0	0
1/30/2022	0	0	0	0	0
1/31/2022	0	0	0	0	0
January Total	0	0			1.59
2/1/2022	0	0	0	0	0
2/2/2022	0	0	0.01	0.04	0.04
2/3/2022	0	0	0.01	0.08	0.65
2/4/2022	0	0	0.01	0.06	0.22
2/5/2022	0	0	0	0	0
2/6/2022	0	0	0.01	0.01	0.01
2/7/2022	0	0	0	0	0
2/8/2022	0	0	0	0	0
2/9/2022	0	0	0	0	0
2/10/2022	0	0	0.01	0.03	0.05
2/11/2022	59,507	90	0.01	0.09	0.18
2/12/2022	23	5	0.02	0.03	0.03
2/13/2022	0	0	0	0	0
2/14/2022	0	0	0	0	0
2/15/2022	0	0	0	0	0
2/16/2022	0	0	0	0	0

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2022

Date	Discharge Volume	Event Duration (mins)	Metro WWTP Rainfall Data (inches)		
			5-Minute Max	1-Hour Max	Daily Total
2/17/2022	276,885	190	0.02	0.09	0.42
2/18/2022	1,302,479	380	0.03	0.27	0.55
2/19/2022	0	0	0.01	0.01	0.02
2/20/2022	0	0	0	0	0
2/21/2022	0	0	0	0	0
2/22/2022	165,715	70	0.03	0.12	0.41
2/23/2022	0	0	0.01	0.05	0.02
2/24/2022	0	0	0	0	0
2/25/2022	0	0	0.02	0.14	0.43
2/26/2022	0	0	0.01	0.01	0.01
2/27/2022	0	0	0.01	0.01	0.01
2/28/2022	0	0	0	0	0
February Total	1,804,609	735			3.05
3/1/2022	0	0	0.01	0.07	0.09
3/2/2022	0	0	0.01	0.05	0.12
3/3/2022	0	0	0.01	0.03	0.06
3/4/2022	0	0	0	0	0
3/5/2022	0	0	0	0	0
3/6/2022	0	0	0	0	0
3/7/2022	114,685	55	0.05	0.17	0.49
3/8/2022	0	0	0.01	0.01	0.01
3/9/2022	0	0	0.01	0.06	0.2
3/10/2022	0	0	0	0	0
3/11/2022	0	0	0.01	0.03	0.03
3/12/2022	0	0	0.01	0.04	0.27
3/13/2022	0	0	0	0	0
3/14/2022	0	0	0	0	0
3/15/2022	0	0	0.01	0.02	0.05
3/16/2022	0	0	0	0	0
3/17/2022	0	0	0	0	0
3/18/2022	0	0	0	0	0
3/19/2022	394,182	105	0.11	0.21	0.82
3/20/2022	0	0	0.01	0.03	0.09
3/21/2022	0	0	0	0	0
3/22/2022	0	0	0	0	0
3/23/2022	0	0	0.01	0.01	0.01
3/24/2022	0	0	0.01	0.02	0.02
3/25/2022	0	0	0.02	0.1	0.26
3/26/2022	0	0	0.01	0.02	0.02
3/27/2022	0	0	0.01	0.03	0.13
3/28/2022	0	0	0.01	0.03	0.06
3/29/2022	0	0	0	0	0
3/30/2022	0	0	0	0	0
3/31/2022	0	0	0.03	0.04	0.04
March Total	508,867	160			2.77
4/1/2022	0	0	0.01	0.05	0.13
4/2/2022	0	0	0	0	0
4/3/2022	0	0	0.01	0.07	0.34

CSO 027
2022

Date	Discharge Volume	Event Duration (mins)	Metro WWTP Rainfall Data (inches)		
			5-Minute Max	1-Hour Max	Daily Total
4/4/2022	0	0	0	0	0
4/5/2022	0	0	0	0	0
4/6/2022	0	0	0.01	0.05	0.05
4/7/2022	1,697,051	705	0.03	0.22	1.33
4/8/2022	87,503	90	0.01	0.05	0.06
4/9/2022	0	0	0.01	0.01	0.02
4/10/2022	0	0	0.01	0.04	0.06
4/11/2022	0	0	0.01	0.03	0.04
4/12/2022	0	0	0.01	0.06	0.22
4/13/2022	0	0	0	0	0
4/14/2022	0	0	0.01	0.06	0.08
4/15/2022	0	0	0	0	0
4/16/2022	0	0	0.03	0.08	0.33
4/17/2022	0	0	0.01	0.03	0.03
4/18/2022	0	0	0.01	0.1	0.34
4/19/2022	0	0	0.05	0.13	0.63
4/20/2022	0	0	0.01	0.05	0.06
4/21/2022	0	0	0.01	0.03	0.03
4/22/2022	0	0	0	0	0
4/23/2022	0	0	0	0	0
4/24/2022	0	0	0	0	0
4/25/2022	0	0	0	0	0
4/26/2022	0	0	0.01	0.02	0.05
4/27/2022	0	0	0.01	0.01	0.01
4/28/2022	0	0	0	0	0
4/29/2022	0	0	0	0	0
4/30/2022	0	0	0	0	0
April Total	1,784,554	795			3.81
5/1/2022	0	0	0	0	0
5/2/2022	0	0	0.04	0.16	0.27
5/3/2022	0	0	0	0	0
5/4/2022	464,202	200	0.04	0.31	0.65
5/5/2022	0	0	0	0	0
5/6/2022	0	0	0	0	0
5/7/2022	0	0	0	0	0
5/8/2022	0	0	0	0	0
5/9/2022	0	0	0	0	0
5/10/2022	0	0	0	0	0
5/11/2022	0	0	0	0	0
5/12/2022	0	0	0	0	0
5/13/2022	0	0	0	0	0
5/14/2022	0	0	0.02	0.02	0.02
5/15/2022	0	0	0	0	0
5/16/2022	0	0	0.06	0.14	0.25
5/17/2022	0	0	0.01	0.03	0.03
5/18/2022	0	0	0	0	0
5/19/2022	0	0	0.07	0.11	0.19
5/20/2022	0	0	0.01	0.01	0.01

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2022

Date	Discharge Volume	Event Duration (mins)	Metro WWTP Rainfall Data (inches)		
			5-Minute Max	1-Hour Max	Daily Total
5/21/2022	0	0	0.03	0.05	0.05
5/22/2022	148,928	50	0.1	0.29	0.29
5/23/2022	0	0	0	0	0
5/24/2022	0	0	0	0	0
5/25/2022	0	0	0	0	0
5/26/2022	0	0	0	0	0
5/27/2022	159,261	55	0.09	0.28	0.4
5/28/2022	0	0	0.01	0.02	0.04
5/29/2022	0	0	0	0	0
5/30/2022	0	0	0	0	0
5/31/2022	0	0	0	0	0
May Total	772,391	305			2.2
6/1/2022	846,991	215	0.19	0.82	1.19
6/2/2022	0	0	0	0	0
6/3/2022	0	0	0	0	0
6/4/2022	0	0	0	0	0
6/5/2022	0	0	0	0	0
6/6/2022	0	0	0	0	0
6/7/2022	0	0	0.05	0.18	0.39
6/8/2022	0	0	0.01	0.07	0.01
6/9/2022	0	0	0.05	0.18	0.45
6/10/2022	0	0	0	0	0
6/11/2022	0	0	0	0	0
6/12/2022	219,862	60	0.04	0.14	0.19
6/13/2022	0	0	0	0	0
6/14/2022	0	0	0	0	0
6/15/2022	0	0	0	0	0
6/16/2022	607,328	120	0.32	0.77	0.93
6/17/2022	0	0	0	0	0
6/18/2022	0	0	0.02	0.06	0.06
6/19/2022	0	0	0	0	0
6/20/2022	0	0	0	0	0
6/21/2022	0	0	0	0	0
6/22/2022	15,893	5	0	0	0
6/23/2022	216,939	70	0.01	0.04	0.05
6/24/2022	0	0	0	0	0
6/25/2022	0	0	0	0	0
6/26/2022	0	0	0.07	0.16	0.16
6/27/2022	0	0	0.05	0.07	0.13
6/28/2022	0	0	0	0	0
6/29/2022	0	0	0	0	0
6/30/2022	0	0	0	0	0
June Total	1,907,013	470			3.56
7/1/2022	0	0	0	0	0
7/2/2022	0	0	0.02	0.07	0.11
7/3/2022	0	0	0	0	0
7/4/2022	0	0	0	0	0
7/5/2022	0	0	0.02	0.09	0.11

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2022

Date	Discharge Volume	Event Duration (mins)	Metro WWTP Rainfall Data (inches)		
			5-Minute Max	1-Hour Max	Daily Total
7/6/2022	0	0	0.01	0.01	0.01
7/7/2022	0	0	0	0	0
7/8/2022	0	0	0	0	0
7/9/2022	0	0	0	0	0
7/10/2022	0	0	0	0	0
7/11/2022	0	0	0	0	0
7/12/2022	0	0	0.03	0.07	0.07
7/13/2022	340,780	70	0.36	0.54	0.54
7/14/2022	0	0	0	0	0
7/15/2022	0	0	0	0	0
7/16/2022	0	0	0	0	0
7/17/2022	0	0	0	0	0
7/18/2022	0	0	0.03	0.13	0.49
7/19/2022	0	0	0	0	0
7/20/2022	0	0	0	0	0
7/21/2022	0	0	0.01	0.01	0.03
7/22/2022	0	0	0	0	0
7/23/2022	0	0	0	0	0
7/24/2022	655,783	120	0.16	0.44	0.89
7/25/2022	262,953	105	0.13	0.43	0.57
7/26/2022	0	0	0	0	0
7/27/2022	0	0	0	0	0
7/28/2022	0	0	0.01	0.01	0.02
7/29/2022	0	0	0	0	0
7/30/2022	0	0	0	0	0
7/31/2022	0	0	0	0	0
July Total	1,259,516	295			2.84
8/1/2022	0	0	0	0	0
8/2/2022	0	0	0	0	0
8/3/2022	0	0	0	0	0
8/4/2022	0	0	0.02	0.03	0.03
8/5/2022	105,794	45	0.31	0.83	0.83
8/6/2022	0	0	0	0	0
8/7/2022	0	0	0.01	0.01	0.02
8/8/2022	182,444	55	0.21	0.4	0.54
8/9/2022	712	10	0.04	0.12	0.11
8/10/2022	0	0	0.01	0.01	0.01
8/11/2022	0	0	0	0	0
8/12/2022	0	0	0	0	0
8/13/2022	0	0	0	0	0
8/14/2022	0	0	0	0	0
8/15/2022	0	0	0	0	0
8/16/2022	0	0	0	0	0
8/17/2022	0	0	0.03	0.06	0.06
8/18/2022	0	0	0	0	0
8/19/2022	0	0	0	0	0
8/20/2022	0	0	0.09	0.16	0.16
8/21/2022	1,071,155	205	0.18	0.72	1.47

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2022

Date	Discharge Volume	Event Duration (mins)	Metro WWTP Rainfall Data (inches)		
			5-Minute Max	1-Hour Max	Daily Total
8/22/2022	47,562	25	0.14	0.36	0.94
8/23/2022	0	0	0.01	0.02	0.04
8/24/2022	0	0	0	0	0
8/25/2022	84,160	35	0.08	0.18	0.18
8/26/2022	0	0	0.01	0.01	0.01
8/27/2022	0	0	0	0	0
8/28/2022	0	0	0	0	0
8/29/2022	0	0	0.01	0.01	0.01
8/30/2022	1,121,314	160	0.21	0.65	0.9
8/31/2022	0	0	0.01	0.01	0.01
August Total	2,613,141	535			5.32
9/1/2022	0	0	0.01	0.03	0.03
9/2/2022	0	0	0	0	0
9/3/2022	0	0	0	0	0
9/4/2022	0	0	0.01	0.07	0.08
9/5/2022	0	0	0.01	0.08	0.26
9/6/2022	0	0	0.01	0.01	0.03
9/7/2022	0	0	0.02	0.09	0.31
9/8/2022	0	0	0.01	0.05	0.08
9/9/2022	0	0	0	0	0
9/10/2022	0	0	0	0	0
9/11/2022	0	0	0.01	0.02	0.03
9/12/2022	0	0	0.01	0.01	0.01
9/13/2022	0	0	0.04	0.08	0.17
9/14/2022	0	0	0	0	0
9/15/2022	0	0	0	0	0
9/16/2022	0	0	0	0	0
9/17/2022	0	0	0	0	0
9/18/2022	0	0	0.01	0.01	0.01
9/19/2022	1,374,852	285	0.36	0.76	1.74
9/20/2022	0	0	0.02	0.03	0.04
9/21/2022	0	0	0	0	0
9/22/2022	0	0	0.02	0.15	0.36
9/23/2022	0	0	0.01	0.02	0.03
9/24/2022	0	0	0	0	0
9/25/2022	0	0	0.01	0.06	0.12
9/26/2022	0	0	0.02	0.04	0.09
9/27/2022	250,635	140	0.07	0.18	0.53
9/28/2022	121,183	125	0.04	0.14	0.48
9/29/2022	0	0	0	0	0
9/30/2022	0	0	0	0	0
September Total	1,746,670	550			4.40
10/1/2022	0	0	0	0	0
10/2/2022	0	0	0	0	0
10/3/2022	0	0	0	0	0
10/4/2022	0	0	0	0	0
10/5/2022	0	0	0	0	0
10/6/2022	0	0	0	0	0

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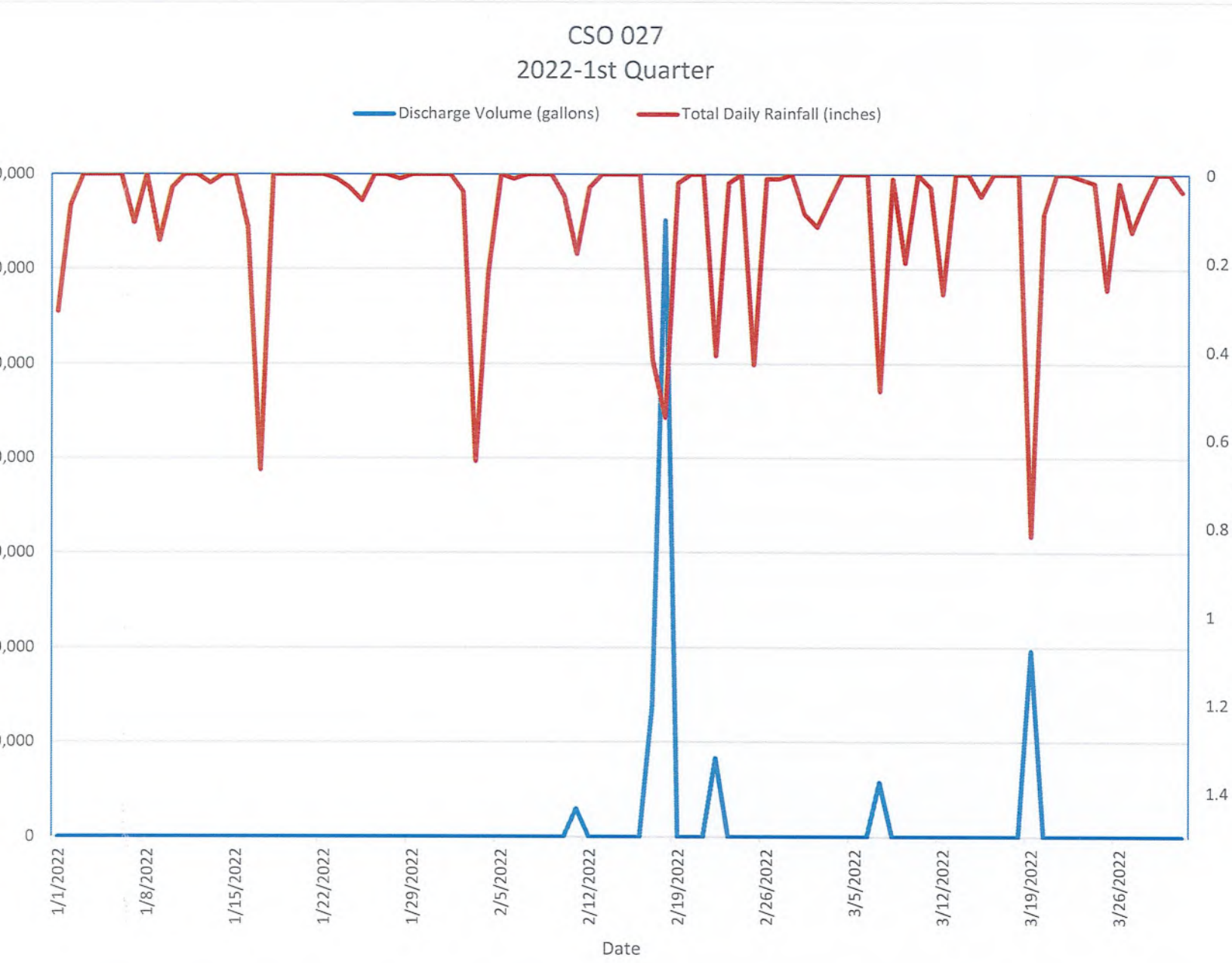
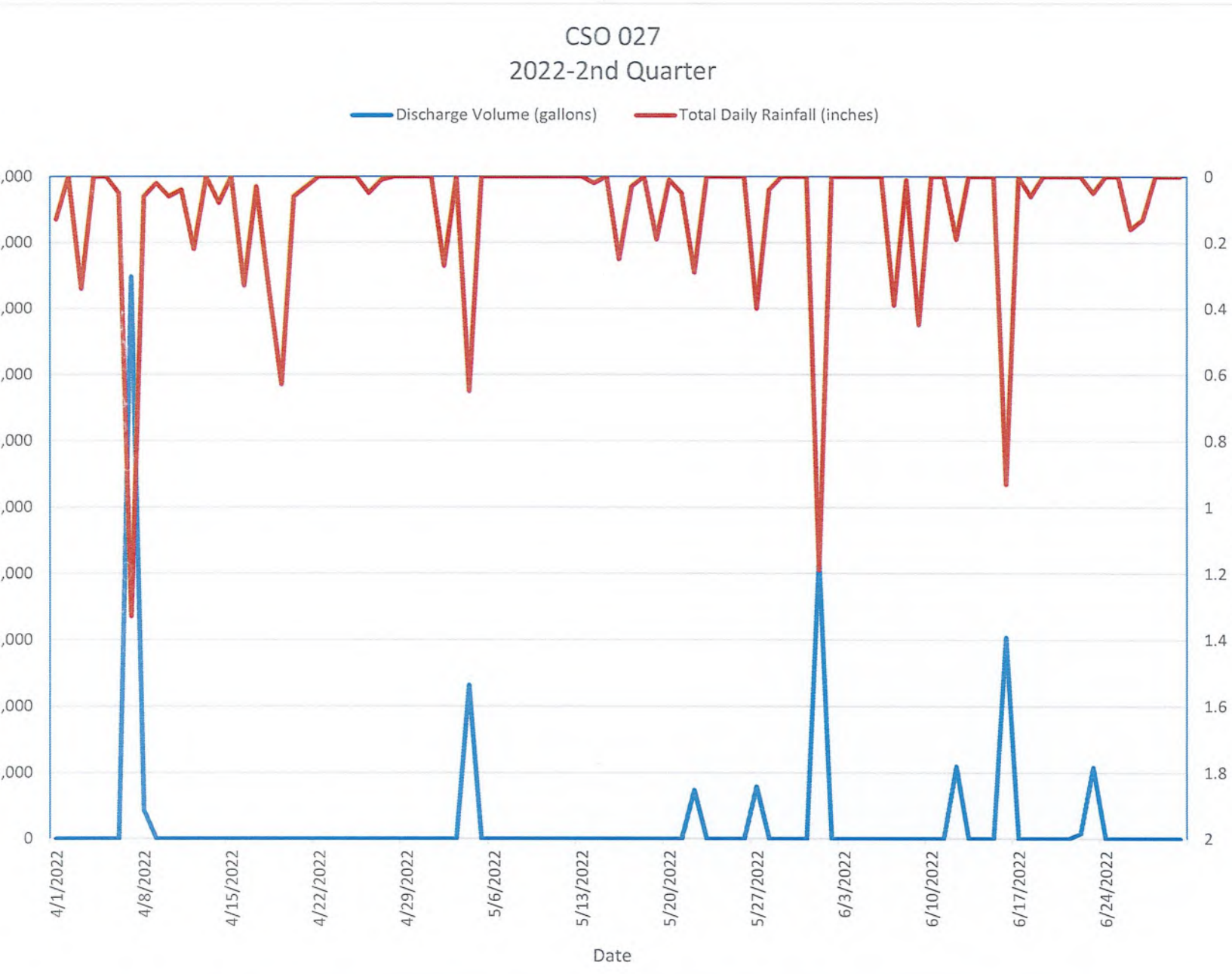
2022

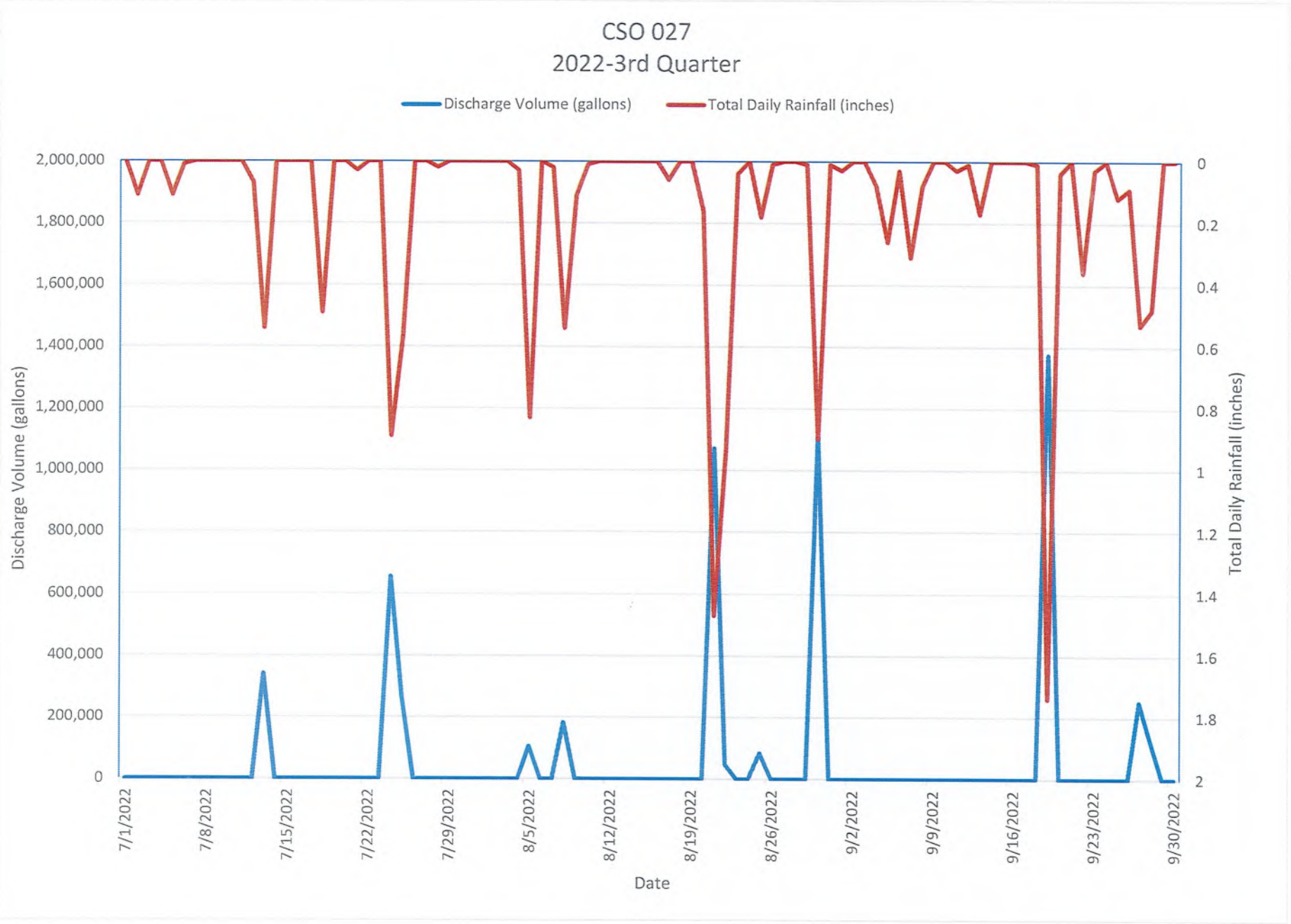
Date	Discharge Volume	Event Duration (mins)	Metro WWTP Rainfall Data (inches)		
			5-Minute Max	1-Hour Max	Daily Total
10/7/2022	0	0	0.01	0.01	0.01
10/8/2022	0	0	0.01	0.04	0.12
10/9/2022	0	0	0	0	0
10/10/2022	0	0	0.01	0.02	0.02
10/11/2022	0	0	0	0	0
10/12/2022	0	0	0	0	0
10/13/2022	323,904	145	0.07	0.25	0.63
10/14/2022	0	0	0.01	0.02	0.01
10/15/2022	0	0	0	0	0
10/16/2022	0	0	0	0	0
10/17/2022	0	0	0.01	0.06	0.09
10/18/2022	0	0	0.02	0.04	0.07
10/19/2022	0	0	0.01	0.01	0.03
10/20/2022	0	0	0.01	0.02	0.05
10/21/2022	0	0	0	0	0
10/22/2022	0	0	0	0	0
10/23/2022	0	0	0	0	0
10/24/2022	0	0	0	0	0
10/25/2022	0	0	0	0	0
10/26/2022	0	0	0.01	0.04	0.04
10/27/2022	0	0	0.01	0.01	0.01
10/28/2022	0	0	0	0	0
10/29/2022	0	0	0	0	0
10/30/2022	0	0	0	0	0
10/31/2022	0	0	0	0	0
October Total	323,904	145			1.08
11/1/2022	0	0	0	0	0
11/2/2022	0	0	0	0	0
11/3/2022	0	0	0	0	0
11/4/2022	0	0	0	0	0
11/5/2022	0	0	0	0	0
11/6/2022	0	0	0.03	0.14	0.2
11/7/2022	0	0	0	0	0
11/8/2022	0	0	0	0	0
11/9/2022	0	0	0	0	0
11/10/2022	0	0	0	0	0
11/11/2022	105,558	35	0.09	0.41	1.17
11/12/2022	292,567	90	0.07	0.69	1.43
11/13/2022	0	0	0.01	0.07	0.18
11/14/2022	0	0	0	0.01	0
11/15/2022	0	0	0.02	0.07	0.1
11/16/2022	0	0	0.02	0.04	0.22
11/17/2022	0	0	0	0	0
11/18/2022	0	0	0.01	0.01	0.01
11/19/2022	0	0	0	0	0
11/20/2022	0	0	0	0	0
11/21/2022	0	0	0	0	0
11/22/2022	0	0	0	0	0

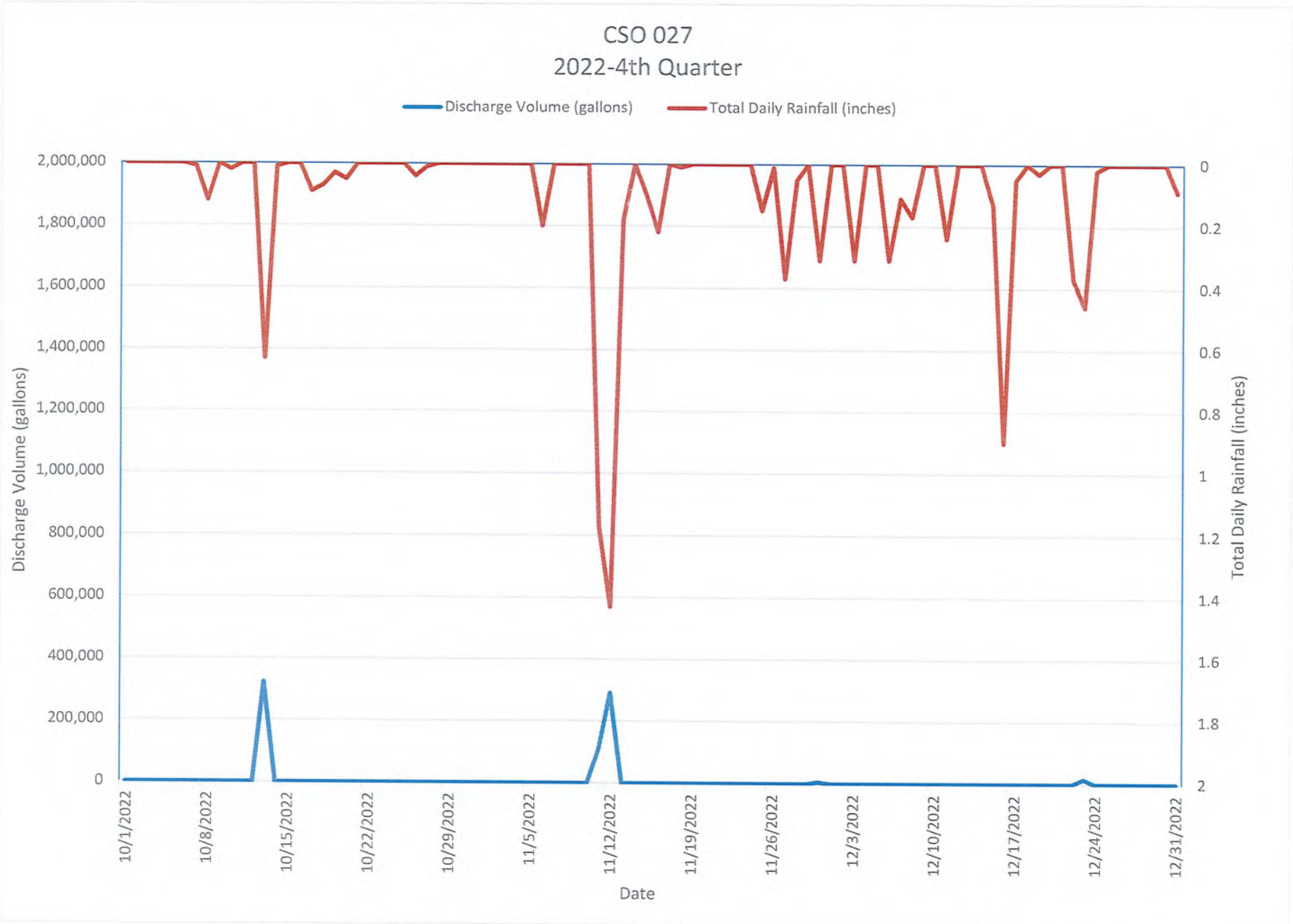
CSO 027
2022

Date	Discharge Volume	Event Duration (mins)	Metro WWTP Rainfall Data (inches)		
			5-Minute Max	1-Hour Max	Daily Total
11/23/2022	0	0	0	0	0
11/24/2022	0	0	0	0	0
11/25/2022	0	0	0.02	0.08	0.15
11/26/2022	0	0	0.01	0.01	0.01
11/27/2022	0	0	0.02	0.1	0.37
11/28/2022	0	0	0.01	0.03	0.05
11/29/2022	0	0	0	0	0
11/30/2022	5,708	20	0.05	0.14	0.31
November Total	403,833	145			4.20
12/1/2022	0	0	0	0	0
12/2/2022	0	0	0	0	0
12/3/2022	0	0	0.02	0.12	0.31
12/4/2022	0	0	0	0	0
12/5/2022	0	0	0	0	0
12/6/2022	0	0	0.02	0.17	0.31
12/7/2022	0	0	0.01	0.03	0.11
12/8/2022	0	0	0.01	0.06	0.17
12/9/2022	0	0	0	0	0
12/10/2022	0	0	0	0	0
12/11/2022	0	0	0.02	0.06	0.24
12/12/2022	0	0	0	0	0
12/13/2022	0	0	0	0	0
12/14/2022	0	0	0	0	0
12/15/2022	0	0	0.01	0.04	0.13
12/16/2022	0	0	0.01	0.08	0.9
12/17/2022	0	0	0.01	0.02	0.05
12/18/2022	0	0	0	0	0
12/19/2022	0	0	0.01	0.02	0.03
12/20/2022	0	0	0	0	0
12/21/2022	0	0	0	0	0
12/22/2022	0	0	0.02	0.12	0.37
12/23/2022	16,419	80	0.05	0.1	0.46
12/24/2022	0	0	0.01	0.01	0.02
12/25/2022	0	0	0	0	0
12/26/2022	0	0	0	0	0
12/27/2022	0	0	0	0	0
12/28/2022	0	0	0	0	0
12/29/2022	0	0	0	0	0
12/30/2022	0	0	0	0	0
12/31/2022	0	0	0.01	0.05	0.09
December Total	16,419	80			3.19


CSO 027
2022-1st Quarter
Discharge Volume (gallons)
Total Daily Rainfall (inches)
,000
,000
,000
,000
,000
,000
0
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1/1/2022
1/8/2022
1/15/2022
1/22/2022
1/29/2022
2/5/2022
2/12/2022
2/19/2022
2/26/2022
3/5/2022
3/12/2022
3/19/2022
3/26/2022
Date


CSO 027
2022-2nd Quarter
Discharge Volume (gallons)
Total Daily Rainfall (inches)
,000
,000
,000
,000
,000
,000
,000
,000
0
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8
2
4/1/2022
4/8/2022
4/15/2022
4/22/2022
4/29/2022
5/6/2022
5/13/2022
5/20/2022
5/27/2022
6/3/2022
6/10/2022
6/17/2022
6/24/2022
Date


CSO 027
2022-3rd Quarter
Discharge Volume (gallons)
Total Daily Rainfall (inches)
2,000,000
1,800,000
1,600,000
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
0
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8
2
7/1/2022
7/8/2022
7/15/2022
7/22/2022
7/29/2022
8/5/2022
8/12/2022
8/19/2022
8/26/2022
9/2/2022
9/9/2022
9/16/2022
9/23/2022
9/30/2022
Date


CSO 027
2022-4th Quarter
Discharge Volume (gallons)
Total Daily Rainfall (inches)
2,000,000
1,800,000
1,600,000
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
0
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8
2
10/1/2022
10/8/2022
10/15/2022
10/22/2022
10/29/2022
11/5/2022
11/12/2022
11/19/2022
11/26/2022
12/3/2022
12/10/2022
12/17/2022
12/24/2022
12/31/2022
Date

CSO 052
2022

Date	Discharge Volume	Event Duration (mins)	Metro WWTP Rainfall Data (inches)		
			5-Minute Max	1-Hour Max	Daily Total
1/1/2022	0	0	0.01	0.08	0.31
1/2/2022	0	0	0.01	0.07	0.07
1/3/2022	0	0	0	0	0
1/4/2022	0	0	0	0	0
1/5/2022	0	0	0	0	0
1/6/2022	0	0	0	0	0
1/7/2022	0	0	0.01	0.03	0.11
1/8/2022	0	0	0	0	0
1/9/2022	0	0	0.02	0.07	0.15
1/10/2022	0	0	0.01	0.03	0.03
1/11/2022 [1]	170,430	375	0	0	0
1/12/2022	0	0	0	0	0
1/13/2022	0	0	0.01	0.01	0.02
1/14/2022	0	0	0	0	0
1/15/2022 [2]	547,604	1165	0	0	0
1/16/2022 [2]	526,971	715	0.01	0.07	0.12
1/17/2022	0	0	0.02	0.16	0.67
1/18/2022	0	0	0	0	0
1/19/2022	0	0	0	0	0
1/20/2022	0	0	0	0	0
1/21/2022	0	0	0	0	0
1/22/2022 [3]	905,644	275	0	0	0
1/23/2022 [3]	1,054,301	1440	0.01	0.01	0.01
1/24/2022 [3]	1,053,404	1440	0.01	0.01	0.03
1/25/2022 [3]	963,382	1440	0.01	0.03	0.06
1/26/2022 [3]	983,720	1440	0	0	0
1/27/2022 [3]	990,732	1440	0	0	0
1/28/2022 [3]	986,393	1440	0.01	0.01	0.01
1/29/2022 [3]	941,884	1440	0	0	0
1/30/2022 [3]	1,012,524	1440	0	0	0
1/31/2022 [3]	982,158	1425	0	0	0
January Total	11,119,147	15475			1.59
2/1/2022 [3]	1,018,051	1440	0	0	0
2/2/2022 [3]	1,072,652	1440	0.01	0.04	0.04
2/3/2022 [3]	1,132,720	1440	0.01	0.08	0.65
2/4/2022 [3]	699,608	1320	0.01	0.06	0.22
2/5/2022 [3]	698,635	1335	0	0	0
2/6/2022 [3]	853,194	1410	0.01	0.01	0.01
2/7/2022 [3]	1,030,629	1430	0	0	0
2/8/2022 [3]	870,668	1420	0	0	0
2/9/2022 [3]	750,631	1355	0	0	0
2/10/2022 [3]	898,517	1415	0.01	0.03	0.05
2/11/2022 [3]	988,476	1380	0.01	0.09	0.18
2/12/2022 [3]	1,038,067	1065	0.02	0.03	0.03
2/13/2022 [3]	1,179,107	1320	0	0	0
2/14/2022 [3]	1,205,979	1365	0	0	0
2/15/2022 [3]	482,407	855	0	0	0
2/16/2022 [3]	809,430	1325	0	0	0

CSO 052
2022

Date	Discharge Volume	Event Duration (mins)	Metro WWTP Rainfall Data (inches)		
			5-Minute Max	1-Hour Max	Daily Total
2/17/2022 [3]	6,447,907	1420	0.02	0.09	0.42
2/18/2022 [3]	15,124,594	1440	0.03	0.27	0.55
2/19/2022 [3]	1,426,213	1440	0.01	0.01	0.02
2/20/2022 [3]	1,107,726	1430	0	0	0
2/21/2022 [3]	1,244,300	1410	0	0	0
2/22/2022 [3]	3,136,442	1440	0.03	0.12	0.41
2/23/2022 [3]	1,386,520	1300	0.01	0.05	0.02
2/24/2022 [3]	793,323	840	0	0	0
2/25/2022 [3]	295,970	405	0.02	0.14	0.43
2/26/2022 [3]	353,993	400	0.01	0.01	0.01
2/27/2022 [3]	629,780	735	0.01	0.01	0.01
2/28/2022 [3]	1,140,240	1235	0	0	0
February Total	47,815,779	34810			3.05
3/1/2022 [3]	1,630,853	1295	0.01	0.07	0.09
3/2/2022 [3]	1,125,198	1305	0.01	0.05	0.12
3/3/2022 [3]	1,062,918	1300	0.01	0.03	0.06
3/4/2022 [3]	599,966	805	0	0	0
3/5/2022 [3]	1,158,174	1440	0	0	0
3/6/2022 [3]	3,646,259	1440	0	0	0
3/7/2022 [3]	8,220,941	1440	0.05	0.17	0.49
3/8/2022 [3]	912,850	1285	0.01	0.01	0.01
3/9/2022 [3]	366,551	585	0.01	0.06	0.2
3/10/2022	0	0	0	0	0
3/11/2022	0	0	0.01	0.03	0.03
3/12/2022	0	0	0.01	0.04	0.27
3/13/2022	0	0	0	0	0
3/14/2022	0	0	0	0	0
3/15/2022	0	0	0.01	0.02	0.05
3/16/2022	0	0	0	0	0
3/17/2022	0	0	0	0	0
3/18/2022	0	0	0	0	0
3/19/2022	109,992	60	0.11	0.21	0.82
3/20/2022	0	0	0.01	0.03	0.09
3/21/2022	0	0	0	0	0
3/22/2022	0	0	0	0	0
3/23/2022	0	0	0.01	0.01	0.01
3/24/2022	0	0	0.01	0.02	0.02
3/25/2022	0	0	0.02	0.1	0.26
3/26/2022	0	0	0.01	0.02	0.02
3/27/2022	0	0	0.01	0.03	0.13
3/28/2022	0	0	0.01	0.03	0.06
3/29/2022	0	0	0	0	0
3/30/2022	0	0	0	0	0
3/31/2022	0	0	0.03	0.04	0.04
March Total	18,833,702	10955			2.77
4/1/2022	0	0	0.01	0.05	0.13
4/2/2022	0	0	0	0	0
4/3/2022	0	0	0.01	0.07	0.34

CSO 052
2022

Date	Discharge Volume	Event Duration (mins)	Metro WWTP Rainfall Data (inches)		
			5-Minute Max	1-Hour Max	Daily Total
4/4/2022	0	0	0	0	0
4/5/2022	0	0	0	0	0
4/6/2022	0	0	0.01	0.05	0.05
4/7/2022	297,184	670	0.03	0.22	1.33
4/8/2022	904	15	0.01	0.05	0.06
4/9/2022	0	0	0.01	0.01	0.02
4/10/2022	0	0	0.01	0.04	0.06
4/11/2022	0	0	0.01	0.03	0.04
4/12/2022	0	0	0.01	0.06	0.22
4/13/2022	0	0	0	0	0
4/14/2022	0	0	0.01	0.06	0.08
4/15/2022	0	0	0	0	0
4/16/2022	0	0	0.03	0.08	0.33
4/17/2022	0	0	0.01	0.03	0.03
4/18/2022	0	0	0.01	0.1	0.34
4/19/2022	0	0	0.05	0.13	0.63
4/20/2022	0	0	0.01	0.05	0.06
4/21/2022	0	0	0.01	0.03	0.03
4/22/2022	0	0	0	0	0
4/23/2022	0	0	0	0	0
4/24/2022	0	0	0	0	0
4/25/2022	0	0	0	0	0
4/26/2022	0	0	0.01	0.02	0.05
4/27/2022	0	0	0.01	0.01	0.01
4/28/2022	0	0	0	0	0
4/29/2022	0	0	0	0	0
4/30/2022	0	0	0	0	0
April Total	298,088	685			5.54
5/1/2022	0	0	0	0	0
5/2/2022	0	0	0.04	0.16	0.27
5/3/2022	0	0	0	0	0
5/4/2022	77,859	90	0.04	0.31	0.65
5/5/2022	0	0	0	0	0
5/6/2022	0	0	0	0	0
5/7/2022	0	0	0	0	0
5/8/2022	0	0	0	0	0
5/9/2022	0	0	0	0	0
5/10/2022	0	0	0	0	0
5/11/2022	0	0	0	0	0
5/12/2022	0	0	0	0	0
5/13/2022	0	0	0	0	0
5/14/2022	0	0	0.02	0.02	0.02
5/15/2022	0	0	0	0	0
5/16/2022	14,287	20	0.06	0.14	0.25
5/17/2022	0	0	0.01	0.03	0.03
5/18/2022	0	0	0	0	0
5/19/2022	0	0	0.07	0.11	0.19
5/20/2022	0	0	0.01	0.01	0.01

CSO 052
2022

Date	Discharge Volume	Event Duration (mins)	Metro WWTP Rainfall Data (inches)		
			5-Minute Max	1-Hour Max	Daily Total
5/21/2022	0	0	0.03	0.05	0.05
5/22/2022	113,400	40	0.1	0.29	0.29
5/23/2022	0	0	0	0	0
5/24/2022	0	0	0	0	0
5/25/2022	0	0	0	0	0
5/26/2022	0	0	0	0	0
5/27/2022	58,419	25	0.09	0.28	0.4
5/28/2022	0	0	0.01	0.02	0.04
5/29/2022	0	0	0	0	0
5/30/2022	0	0	0	0	0
5/31/2022	0	0	0	0	0
May Total	263,965	175			2.2
6/1/2022	169,054	125	0.19	0.82	1.19
6/2/2022	0	0	0	0	0
6/3/2022	0	0	0	0	0
6/4/2022	0	0	0	0	0
6/5/2022	0	0	0	0	0
6/6/2022	0	0	0	0	0
6/7/2022	425	15	0.05	0.18	0.39
6/8/2022	0	0	0.01	0.07	0.01
6/9/2022	5,064	100	0.05	0.18	0.45
6/10/2022	0	0	0	0	0
6/11/2022	0	0	0	0	0
6/12/2022	365,732	55	0.04	0.14	0.19
6/13/2022	0	0	0	0	0
6/14/2022	0	0	0	0	0
6/15/2022	0	0	0	0	0
6/16/2022	261,940	75	0.32	0.77	0.93
6/17/2022	0	0	0	0	0
6/18/2022	0	0	0.02	0.06	0.06
6/19/2022	0	0	0	0	0
6/20/2022	0	0	0	0	0
6/21/2022	0	0	0	0	0
6/22/2022	0	0	0	0	0
6/23/2022	0	0	0.01	0.04	0.05
6/24/2022	0	0	0	0	0
6/25/2022	0	0	0	0	0
6/26/2022	0	0	0.07	0.16	0.16
6/27/2022	0	0	0.05	0.07	0.13
6/28/2022	0	0	0	0	0
6/29/2022	0	0	0	0	0
6/30/2022	0	0	0	0	0
June Total	802,215	370			3.56
7/1/2022	0	0	0	0	0
7/2/2022	0	0	0.02	0.07	0.11
7/3/2022	0	0	0	0	0
7/4/2022	0	0	0	0	0
7/5/2022	132	5	0.02	0.09	0.11

CSO 052
2022

Date	Discharge Volume	Event Duration (mins)	Metro WWTP Rainfall Data (inches)		
			5-Minute Max	1-Hour Max	Daily Total
7/6/2022	0	0	0.01	0.01	0.01
7/7/2022	0	0	0	0	0
7/8/2022	0	0	0	0	0
7/9/2022	0	0	0	0	0
7/10/2022	0	0	0	0	0
7/11/2022	0	0	0	0	0
7/12/2022	0	0	0.03	0.07	0.07
7/13/2022	138,615	20	0.36	0.54	0.54
7/14/2022	0	0	0	0	0
7/15/2022	0	0	0	0	0
7/16/2022	0	0	0	0	0
7/17/2022	0	0	0	0	0
7/18/2022	0	0	0.03	0.13	0.49
7/19/2022	0	0	0	0	0
7/20/2022	0	0	0	0	0
7/21/2022	2,040	15	0.01	0.01	0.03
7/22/2022	0	0	0	0	0
7/23/2022	0	0	0	0	0
7/24/2022	102,015	40	0.16	0.44	0.89
7/25/2022	134,214	55	0.13	0.43	0.57
7/26/2022	0	0	0	0	0
7/27/2022	0	0	0	0	0
7/28/2022	0	0	0.01	0.01	0.02
7/29/2022	0	0	0	0	0
7/30/2022	0	0	0	0	0
7/31/2022	0	0	0	0	0
July Total	377,016	135			2.84
8/1/2022	0	0	0	0	0
8/2/2022	0	0	0	0	0
8/3/2022	0	0	0	0	0
8/4/2022	0	0	0.02	0.03	0.03
8/5/2022	6,432	10	0.31	0.83	0.83
8/6/2022	31,733	10	0	0	0
8/7/2022	15,500	15	0.01	0.01	0.02
8/8/2022	106,766	20	0.21	0.4	0.54
8/9/2022	9,736	10	0.04	0.12	0.11
8/10/2022	0	0	0.01	0.01	0.01
8/11/2022	0	0	0	0	0
8/12/2022	0	0	0	0	0
8/13/2022	0	0	0	0	0
8/14/2022	0	0	0	0	0
8/15/2022	0	0	0	0	0
8/16/2022	0	0	0	0	0
8/17/2022	0	0	0.03	0.06	0.06
8/18/2022	0	0	0	0	0
8/19/2022	0	0	0	0	0
8/20/2022	0	0	0.09	0.16	0.16
8/21/2022	629,020	350	0.18	0.72	1.47

CSO 052
2022

Date	Discharge Volume	Event Duration (mins)	Metro WWTP Rainfall Data (inches)		
			5-Minute Max	1-Hour Max	Daily Total
8/22/2022	113,457	20	0.14	0.36	0.94
8/23/2022	36,180	30	0.01	0.02	0.04
8/24/2022	0	0	0	0	0
8/25/2022	453	5	0.08	0.18	0.18
8/26/2022	13,476	10	0.01	0.01	0.01
8/27/2022	0	0	0	0	0
8/28/2022	0	0	0	0	0
8/29/2022	0	0	0.01	0.01	0.01
8/30/2022	111,779	70	0.21	0.65	0.9
8/31/2022	2,526	15	0.01	0.01	0.01
August Total	1,077,058	565			5.32
9/1/2022	0	0	0.01	0.03	0.03
9/2/2022	0	0	0	0	0
9/3/2022	0	0	0	0	0
9/4/2022	0	0	0.01	0.07	0.08
9/5/2022	0	0	0.01	0.08	0.26
9/6/2022	0	0	0.01	0.01	0.03
9/7/2022	21,311	35	0.02	0.09	0.31
9/8/2022	115,440	65	0.01	0.05	0.08
9/9/2022	0	0	0	0	0
9/10/2022	0	0	0	0	0
9/11/2022	0	0	0.01	0.02	0.03
9/12/2022	0	0	0.01	0.01	0.01
9/13/2022	8,047	20	0.04	0.08	0.17
9/14/2022	0	0	0	0	0
9/15/2022	0	0	0	0	0
9/16/2022	0	0	0	0	0
9/17/2022	0	0	0	0	0
9/18/2022	0	0	0.01	0.01	0.01
9/19/2022	988,247	210	0.36	0.76	1.74
9/20/2022	0	0	0.02	0.03	0.04
9/21/2022	0	0	0	0	0
9/22/2022	22,996	35	0.02	0.15	0.36
9/23/2022	0	0	0.01	0.02	0.03
9/24/2022	0	0	0	0	0
9/25/2022	50,458	20	0.01	0.06	0.12
9/26/2022	0	0	0.02	0.04	0.09
9/27/2022	194,854	65	0.07	0.18	0.53
9/28/2022	29,829	90	0.04	0.14	0.48
9/29/2022	0	0	0	0	0
9/30/2022	0	0	0	0	0
September Total	1,431,182	540			4.4
10/1/2022	0	0	0	0	0
10/2/2022	0	0	0	0	0
10/3/2022	0	0	0	0	0
10/4/2022	0	0	0	0	0
10/5/2022	0	0	0	0	0
10/6/2022	0	0	0	0	0

CSO 052
2022

Date	Discharge Volume	Event Duration (mins)	Metro WWTP Rainfall Data (inches)		
			5-Minute Max	1-Hour Max	Daily Total
10/7/2022	0	0	0.01	0.01	0.01
10/8/2022	0	0	0.01	0.04	0.12
10/9/2022	0	0	0	0	0
10/10/2022	0	0	0.01	0.02	0.02
10/11/2022	0	0	0	0	0
10/12/2022	0	0	0	0	0
10/13/2022	152,343	105	0.07	0.25	0.63
10/14/2022	0	0	0.01	0.02	0.01
10/15/2022	0	0	0	0	0
10/16/2022	0	0	0	0	0
10/17/2022	2,977	20	0.01	0.06	0.09
10/18/2022	0	0	0.02	0.04	0.07
10/19/2022	0	0	0.01	0.01	0.03
10/20/2022	0	0	0.01	0.02	0.05
10/21/2022	0	0	0	0	0
10/22/2022	0	0	0	0	0
10/23/2022	0	0	0	0	0
10/24/2022	0	0	0	0	0
10/25/2022	0	0	0	0	0
10/26/2022	0	0	0.01	0.04	0.04
10/27/2022	0	0	0.01	0.01	0.01
10/28/2022	0	0	0	0	0
10/29/2022	0	0	0	0	0
10/30/2022	0	0	0	0	0
10/31/2022	0	0	0	0	0
October Total	155,320	125			1.08
11/1/2022	0	0	0	0	0
11/2/2022 [4]	6,282	230	0	0	0
11/3/2022 [4]	13,844	470	0	0	0
11/4/2022	0	0	0	0	0
11/5/2022	0	0	0	0	0
11/6/2022	0	0	0.03	0.14	0.2
11/7/2022	0	0	0	0	0
11/8/2022	0	0	0	0	0
11/9/2022	0	0	0	0	0
11/10/2022	0	0	0	0	0
11/11/2022	101,428	60	0.09	0.41	1.17
11/12/2022	1,528,062	290	0.07	0.69	1.43
11/13/2022	0	0	0.01	0.07	0.18
11/14/2022	0	0	0	0.01	0
11/15/2022	0	0	0.02	0.07	0.1
11/16/2022	0	0	0.02	0.04	0.22
11/17/2022	0	0	0	0	0
11/18/2022	0	0	0.01	0.01	0.01
11/19/2022	0	0	0	0	0
11/20/2022	0	0	0	0	0
11/21/2022	0	0	0	0	0
11/22/2022	0	0	0	0	0

CSO 052
2022

Date	Discharge Volume	Event Duration (mins)	Metro WWTP Rainfall Data (inches)		
			5-Minute Max	1-Hour Max	Daily Total
11/23/2022	0	0	0	0	0
11/24/2022	0	0	0	0	0
11/25/2022	0	0	0.02	0.08	0.15
11/26/2022	0	0	0.01	0.01	0.01
11/27/2022	1,759	30	0.02	0.1	0.37
11/28/2022	0	0	0.01	0.03	0.05
11/29/2022	0	0	0	0	0
11/30/2022	31,521	45	0.05	0.14	0.31
November Total	1,682,896	1125			4
12/1/2022	0	0	0	0	0
12/2/2022	0	0	0	0	0
12/3/2022	3,224	50	0.02	0.12	0.31
12/4/2022	0	0	0	0	0
12/5/2022	0	0	0	0	0
12/6/2022	11,080	50	0.02	0.17	0.31
12/7/2022	0	0	0.01	0.03	0.11
12/8/2022	0	0	0.01	0.06	0.17
12/9/2022	0	0	0	0	0
12/10/2022	270	5	0	0	0
12/11/2022 [5]	20,486	690	0.02	0.06	0.24
12/12/2022 [5]	45,903	1440	0	0	0
12/13/2022 [5]	48,042	1440	0	0	0
12/14/2022 [5]	46,098	1440	0	0	0
12/15/2022 [5]	23,786	740	0.01	0.04	0.13
12/16/2022	0	0	0.01	0.08	0.9
12/17/2022	0	0	0.01	0.02	0.05
12/18/2022	0	0	0	0	0
12/19/2022	0	0	0.01	0.02	0.03
12/20/2022	0	0	0	0	0
12/21/2022	0	0	0	0	0
12/22/2022	1,891	85	0.02	0.12	0.37
12/23/2022	24,863	675	0.05	0.1	0.46
12/24/2022	25	5	0.01	0.01	0.02
12/25/2022	0	0	0	0	0
12/26/2022	0	0	0	0	0
12/27/2022	0	0	0	0	0
12/28/2022	0	0	0	0	0
12/29/2022	0	0	0	0	0
12/30/2022	0	0	0	0	0
12/31/2022	0	0	0.01	0.05	0.09
December Total	225,668	6620			3.19

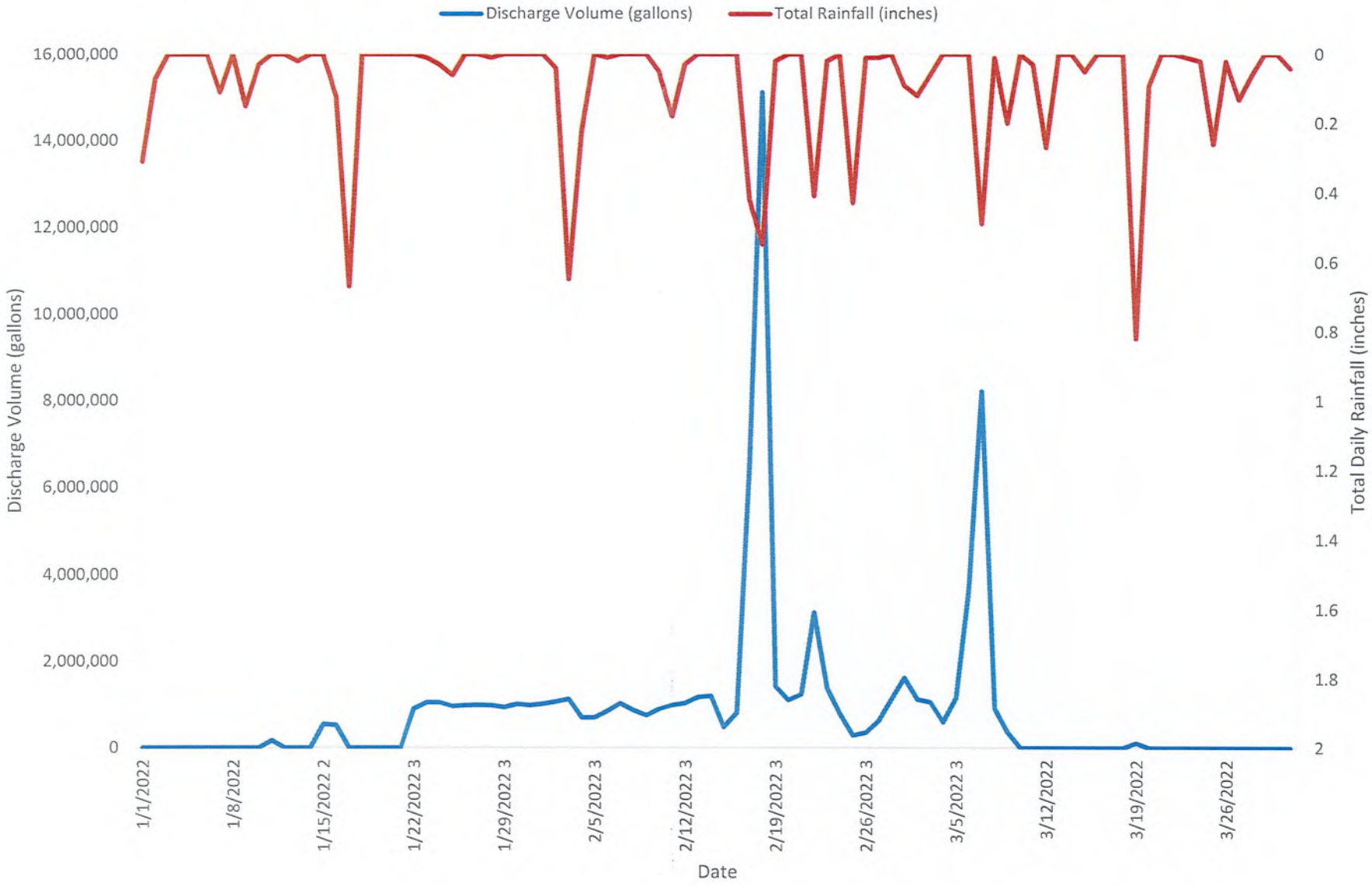
[1] On 1/11/22 water main break; flowing out outfall pipe (not from sewer side)

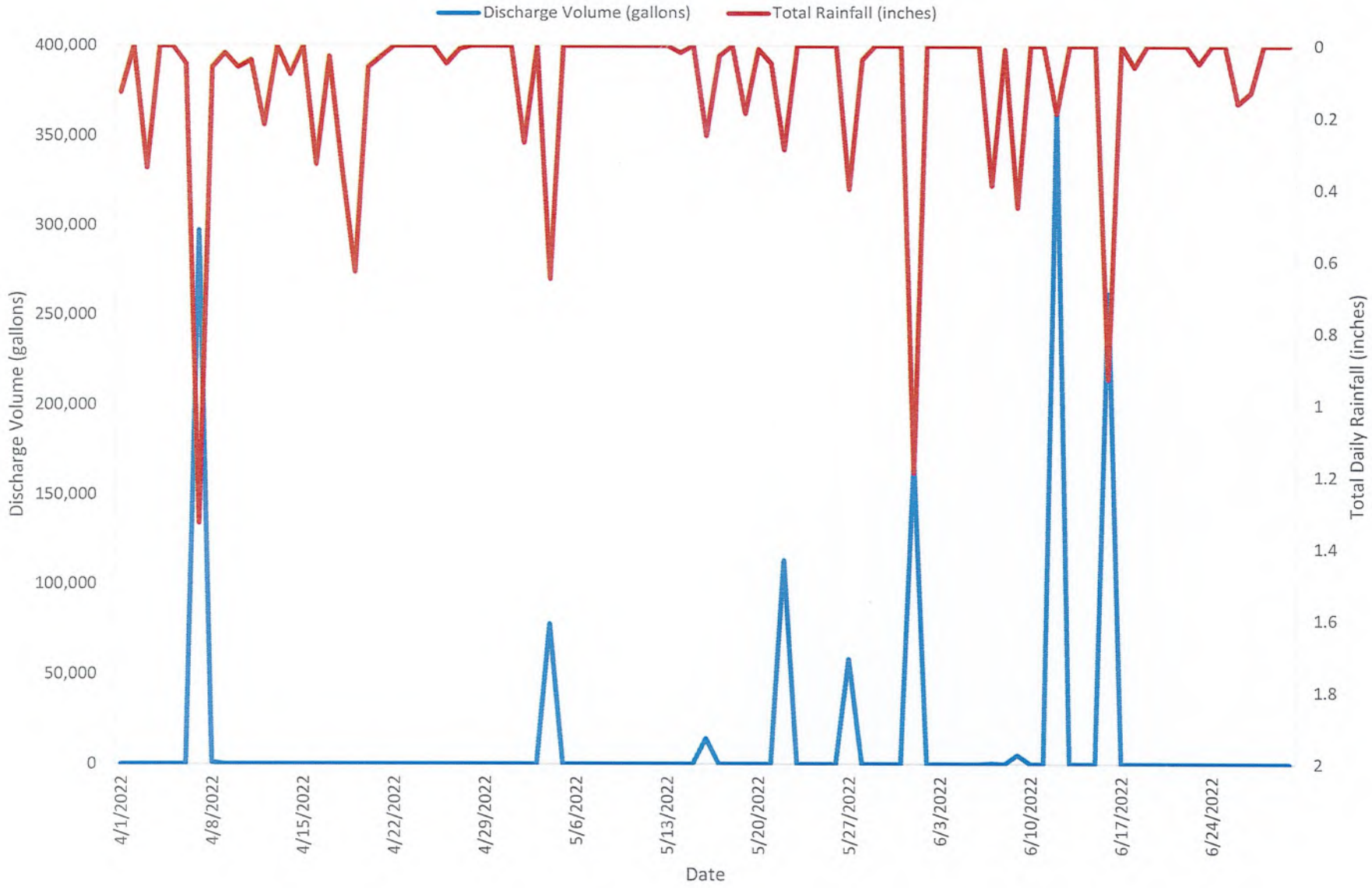
[2] On 1/15/22 and 1/16/22 flow readings due to freezing temperatures; "false" readings

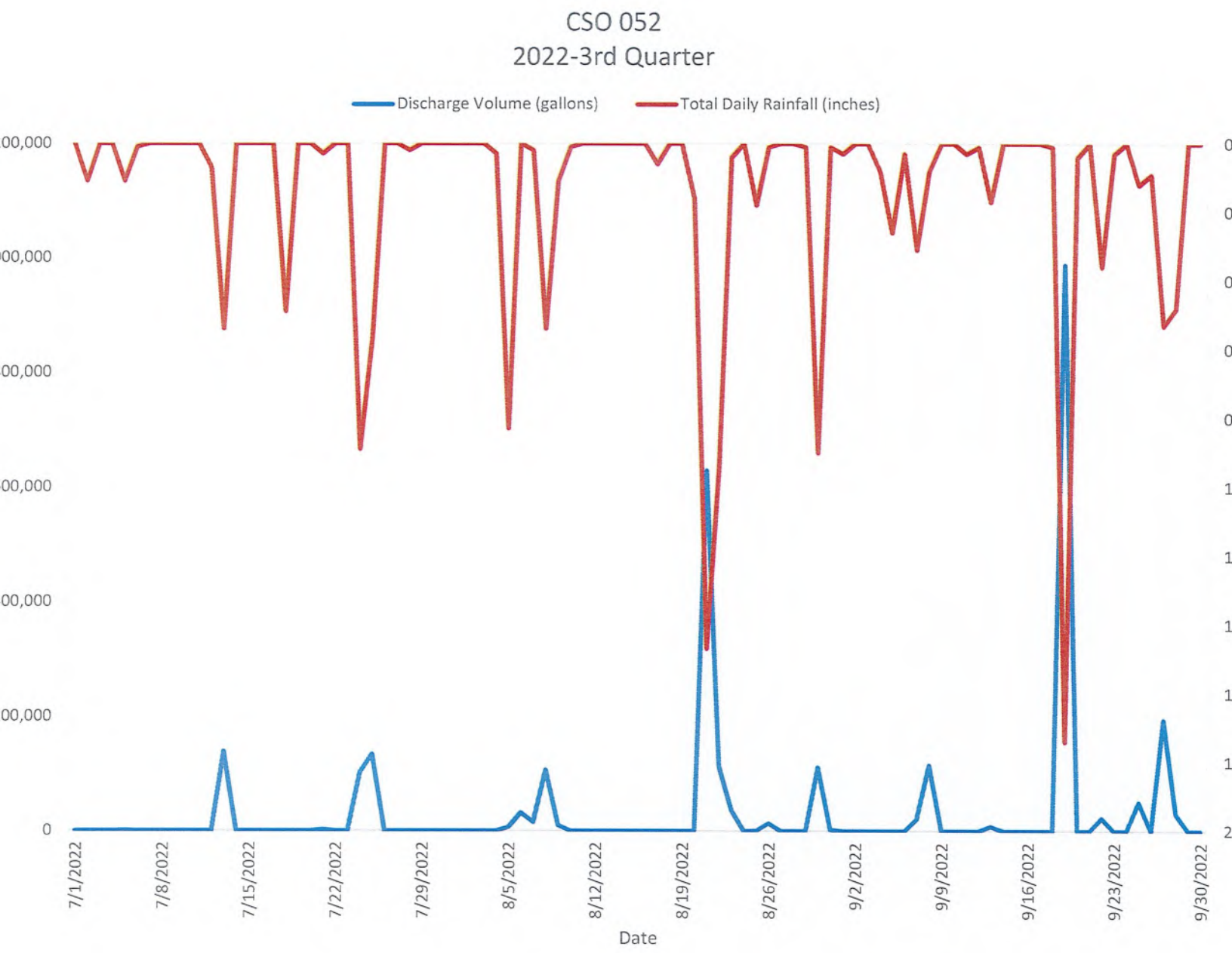
[3] Flow meter data from 1/24/22-3/9/22 is "suspect"; AV sensor replaced on 3/9/22

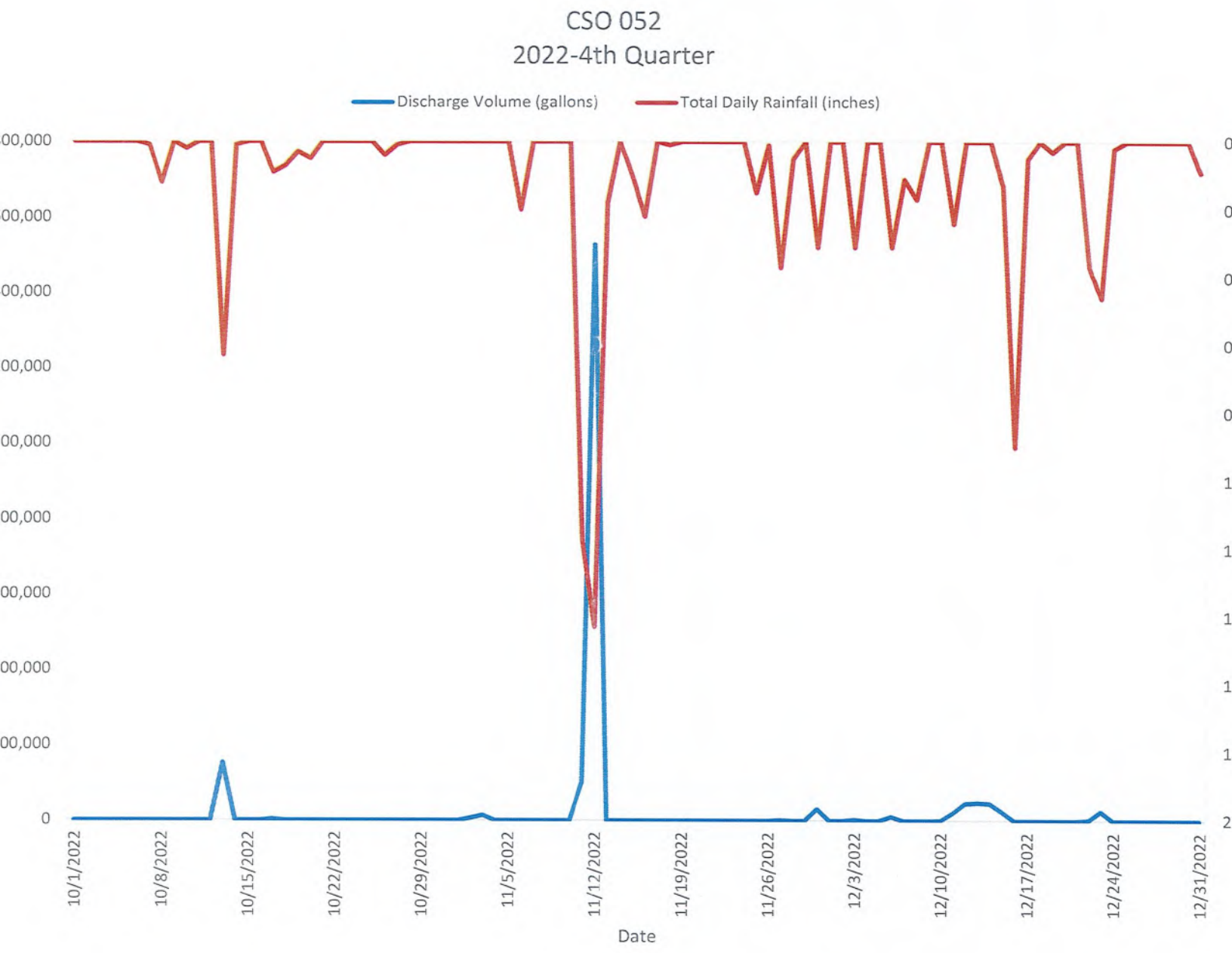
[4] On 11/2-11/3/22 flow meter flow data is not due to wet weather event; water pipe break; City of Syracuse notified

[5] On 12/11-12/15/22 flow data us "suspect"; City of Syracuse notified of water pipe break


CSO 052
2022-1st Quarter
Discharge Volume (gallons)
Total Rainfall (inches)
16,000,000
14,000,000
12,000,000
10,000,000
8,000,000
6,000,000
4,000,000
2,000,000
0
Discharge Volume (gallons)
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8
2
Total Daily Rainfall (inches)
1/1/2022
1/8/2022
1/15/2022 2
1/22/2022 3
1/29/2022 3
2/5/2022 3
2/12/2022 3
2/19/2022 3
2/26/2022 3
3/5/2022 3
3/12/2022
3/19/2022
3/26/2022
Date


CSO 052
2022-2nd Quarter
Discharge Volume (gallons)
Total Rainfall (inches)
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
0
Discharge Volume (gallons)
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8
2
Total Daily Rainfall (inches)
4/1/2022
4/8/2022
4/15/2022
4/22/2022
4/29/2022
5/6/2022
5/13/2022
5/20/2022
5/27/2022
6/3/2022
6/10/2022
6/17/2022
6/24/2022
Date


CSO 052
2022-3rd Quarter
Discharge Volume (gallons)
Total Daily Rainfall (inches)
00,000
000,000
00,000
00,000
00,000
00,000
0
0
0
0
0
1
1
1
1
1
2
7/1/2022
7/8/2022
7/15/2022
7/22/2022
7/29/2022
8/5/2022
8/12/2022
8/19/2022
8/26/2022
9/2/2022
9/9/2022
9/16/2022
9/23/2022
9/30/2022
Date


CSO 052
2022-4th Quarter
Discharge Volume (gallons)
Total Daily Rainfall (inches)
00,000
00,000
00,000
00,000
00,000
00,000
00,000
00,000
00,000
0
0
0
0
0
0
1
1
1
1
1
2
10/1/2022
10/8/2022
10/15/2022
10/22/2022
10/29/2022
11/5/2022
11/12/2022
11/19/2022
11/26/2022
12/3/2022
12/10/2022
12/17/2022
12/24/2022
12/31/2022
Date

CSO 60M (060/077)
2022

Date	Discharge Volume	Event Duration (mins)	Metro WWTP Rainfall Data (inches)		
			5-Minute Max	1-Hour Max	Daily Total
1/1/2022	0	0	0.01	0.08	0.31
1/2/2022	0	0	0.01	0.07	0.07
1/3/2022	0	0	0	0	0
1/4/2022	0	0	0	0	0
1/5/2022	0	0	0	0	0
1/6/2022	0	0	0	0	0
1/7/2022	0	0	0.01	0.03	0.11
1/8/2022	0	0	0	0	0
1/9/2022	0	0	0.02	0.07	0.15
1/10/2022	0	0	0.01	0.03	0.03
1/11/2022	0	0	0	0	0
1/12/2022	0	0	0	0	0
1/13/2022	0	0	0.01	0.01	0.02
1/14/2022	0	0	0	0	0
1/15/2022	0	0	0	0	0
1/16/2022	0	0	0.01	0.07	0.12
1/17/2022	0	0	0.02	0.16	0.67
1/18/2022	0	0	0	0	0
1/19/2022	0	0	0	0	0
1/20/2022	0	0	0	0	0
1/21/2022	0	0	0	0	0
1/22/2022	0	0	0	0	0
1/23/2022	0	0	0.01	0.01	0.01
1/24/2022	0	0	0.01	0.01	0.03
1/25/2022	0	0	0.01	0.03	0.06
1/26/2022	0	0	0	0	0
1/27/2022	0	0	0	0	0
1/28/2022	0	0	0.01	0.01	0.01
1/29/2022	0	0	0	0	0
1/30/2022	0	0	0	0	0
1/31/2022	0	0	0	0	0
January Total	0	0			1.59
2/1/2022	0	0	0	0	0
2/2/2022	0	0	0.01	0.04	0.04
2/3/2022	0	0	0.01	0.08	0.65
2/4/2022	0	0	0.01	0.06	0.22
2/5/2022	0	0	0	0	0
2/6/2022	0	0	0.01	0.01	0.01
2/7/2022	0	0	0	0	0
2/8/2022	0	0	0	0	0
2/9/2022	0	0	0	0	0
2/10/2022	0	0	0.01	0.03	0.05
2/11/2022	0	0	0.01	0.09	0.18
2/12/2022	0	0	0.02	0.03	0.03
2/13/2022	0	0	0	0	0
2/14/2022	0	0	0	0	0
2/15/2022	0	0	0	0	0
2/16/2022	0	0	0	0	0

CSO 60M (060/077)
2022

Date	Discharge Volume	Event Duration (mins)	Metro WWTP Rainfall Data (inches)		
			5-Minute Max	1-Hour Max	Daily Total
2/17/2022	0	0	0.02	0.09	0.42
2/18/2022	18,047	15	0.03	0.27	0.55
2/19/2022	0	0	0.01	0.01	0.02
2/20/2022	0	0	0	0	0
2/21/2022	0	0	0	0	0
2/22/2022	0	0	0.03	0.12	0.41
2/23/2022	0	0	0.01	0.05	0.02
2/24/2022	0	0	0	0	0
2/25/2022	0	0	0.02	0.14	0.43
2/26/2022	0	0	0.01	0.01	0.01
2/27/2022	0	0	0.01	0.01	0.01
2/28/2022	0	0	0	0	0
February Total	18,047	15			3.05
3/1/2022	0	0	0.01	0.07	0.09
3/2/2022	0	0	0.01	0.05	0.12
3/3/2022	0	0	0.01	0.03	0.06
3/4/2022	0	0	0	0	0
3/5/2022	0	0	0	0	0
3/6/2022	0	0	0	0	0
3/7/2022	0	0	0.05	0.17	0.49
3/8/2022	0	0	0.01	0.01	0.01
3/9/2022	0	0	0.01	0.06	0.2
3/10/2022	0	0	0	0	0
3/11/2022	0	0	0.01	0.03	0.03
3/12/2022	0	0	0.01	0.04	0.27
3/13/2022	0	0	0	0	0
3/14/2022	0	0	0	0	0
3/15/2022	0	0	0.01	0.02	0.05
3/16/2022	0	0	0	0	0
3/17/2022	0	0	0	0	0
3/18/2022	0	0	0	0	0
3/19/2022	17,196	10	0.11	0.21	0.82
3/20/2022	0	0	0.01	0.03	0.09
3/21/2022	0	0	0	0	0
3/22/2022	0	0	0	0	0
3/23/2022	0	0	0.01	0.01	0.01
3/24/2022	0	0	0.01	0.02	0.02
3/25/2022	0	0	0.02	0.1	0.26
3/26/2022	0	0	0.01	0.02	0.02
3/27/2022	0	0	0.01	0.03	0.13
3/28/2022	0	0	0.01	0.03	0.06
3/29/2022	0	0	0	0	0
3/30/2022	0	0	0	0	0
3/31/2022	0	0	0.03	0.04	0.04
March Total	17,196	10			2.77
4/1/2022	0	0	0.01	0.05	0.13
4/2/2022	0	0	0	0	0
4/3/2022	0	0	0.01	0.07	0.34

CSO 60M (060/077)
2022

Date	Discharge Volume	Event Duration (mins)	Metro WWTP Rainfall Data (inches)		
			5-Minute Max	1-Hour Max	Daily Total
4/4/2022	0	0	0	0	0
4/5/2022	0	0	0	0	0
4/6/2022	0	0	0.01	0.05	0.05
4/7/2022	0	0	0.03	0.22	1.33
4/8/2022	0	0	0.01	0.05	0.06
4/9/2022	0	0	0.01	0.01	0.02
4/10/2022	0	0	0.01	0.04	0.06
4/11/2022	0	0	0.01	0.03	0.04
4/12/2022	0	0	0.01	0.06	0.22
4/13/2022	0	0	0	0	0
4/14/2022	0	0	0.01	0.06	0.08
4/15/2022	0	0	0	0	0
4/16/2022	0	0	0.03	0.08	0.33
4/17/2022	0	0	0.01	0.03	0.03
4/18/2022	0	0	0.01	0.1	0.34
4/19/2022	0	0	0.05	0.13	0.63
4/20/2022	0	0	0.01	0.05	0.06
4/21/2022	0	0	0.01	0.03	0.03
4/22/2022	0	0	0	0	0
4/23/2022	0	0	0	0	0
4/24/2022	0	0	0	0	0
4/25/2022	0	0	0	0	0
4/26/2022	0	0	0.01	0.02	0.05
4/27/2022	0	0	0.01	0.01	0.01
4/28/2022	0	0	0	0	0
4/29/2022	0	0	0	0	0
4/30/2022	0	0	0	0	0
April Total	0	0			3.81
5/1/2022	0	0	0	0	0
5/2/2022	0	0	0.04	0.16	0.27
5/3/2022	0	0	0	0	0
5/4/2022	0	0	0.04	0.31	0.65
5/5/2022	0	0	0	0	0
5/6/2022	0	0	0	0	0
5/7/2022	0	0	0	0	0
5/8/2022	0	0	0	0	0
5/9/2022	0	0	0	0	0
5/10/2022	0	0	0	0	0
5/11/2022	0	0	0	0	0
5/12/2022	0	0	0	0	0
5/13/2022	0	0	0	0	0
5/14/2022	0	0	0.02	0.02	0.02
5/15/2022	0	0	0	0	0
5/16/2022	0	0	0.06	0.14	0.25
5/17/2022	0	0	0.01	0.03	0.03
5/18/2022	0	0	0	0	0
5/19/2022	0	0	0.07	0.11	0.19
5/20/2022	0	0	0.01	0.01	0.01

CSO 60M (060/077)
2022

Date	Discharge Volume	Event Duration (mins)	Metro WWTP Rainfall Data (inches)		
			5-Minute Max	1-Hour Max	Daily Total
5/21/2022	0	0	0.03	0.05	0.05
5/22/2022	0	0	0.1	0.29	0.29
5/23/2022	0	0	0	0	0
5/24/2022	0	0	0	0	0
5/25/2022	0	0	0	0	0
5/26/2022	0	0	0	0	0
5/27/2022	0	0	0.09	0.28	0.4
5/28/2022	0	0	0.01	0.02	0.04
5/29/2022	0	0	0	0	0
5/30/2022	0	0	0	0	0
5/31/2022	0	0	0	0	0
May Total	0	0			2.20
6/1/2022	0	0	0.19	0.82	1.19
6/2/2022	0	0	0	0	0
6/3/2022	0	0	0	0	0
6/4/2022	0	0	0	0	0
6/5/2022	0	0	0	0	0
6/6/2022	0	0	0	0	0
6/7/2022	0	0	0.05	0.18	0.39
6/8/2022	0	0	0.01	0.07	0.01
6/9/2022	0	0	0.05	0.18	0.45
6/10/2022	0	0	0	0	0
6/11/2022	0	0	0	0	0
6/12/2022	41,963	20	0.04	0.14	0.19
6/13/2022	0	0	0	0	0
6/14/2022	0	0	0	0	0
6/15/2022	0	0	0	0	0
6/16/2022	394,227	35	0.32	0.77	0.93
6/17/2022	0	0	0	0	0
6/18/2022	0	0	0.02	0.06	0.06
6/19/2022	0	0	0	0	0
6/20/2022	0	0	0	0	0
6/21/2022	0	0	0	0	0
6/22/2022	0	0	0	0	0
6/23/2022	0	0	0.01	0.04	0.05
6/24/2022	0	0	0	0	0
6/25/2022	0	0	0	0	0
6/26/2022	0	0	0.07	0.16	0.16
6/27/2022	0	0	0.05	0.07	0.13
6/28/2022	0	0	0	0	0
6/29/2022	0	0	0	0	0
6/30/2022	0	0	0	0	0
June Total	436,190	55			3.56
7/1/2022	0	0	0	0	0
7/2/2022	0	0	0.02	0.07	0.11
7/3/2022	0	0	0	0	0
7/4/2022	0	0	0	0	0
7/5/2022	0	0	0.02	0.09	0.11

CSO 60M (060/077)
2022

Date	Discharge Volume	Event Duration (mins)	Metro WWTP Rainfall Data (inches)		
			5-Minute Max	1-Hour Max	Daily Total
7/6/2022	0	0	0.01	0.01	0.01
7/7/2022	0	0	0	0	0
7/8/2022	0	0	0	0	0
7/9/2022	0	0	0	0	0
7/10/2022	0	0	0	0	0
7/11/2022	0	0	0	0	0
7/12/2022	0	0	0.03	0.07	0.07
7/13/2022	39,356	20	0.36	0.54	0.54
7/14/2022	0	0	0	0	0
7/15/2022	0	0	0	0	0
7/16/2022	0	0	0	0	0
7/17/2022	0	0	0	0	0
7/18/2022	0	0	0.03	0.13	0.49
7/19/2022	0	0	0	0	0
7/20/2022	0	0	0	0	0
7/21/2022	0	0	0.01	0.01	0.03
7/22/2022	0	0	0	0	0
7/23/2022	0	0	0	0	0
7/24/2022	0	0	0.16	0.44	0.89
7/25/2022	0	0	0.13	0.43	0.57
7/26/2022	0	0	0	0	0
7/27/2022	0	0	0	0	0
7/28/2022	0	0	0.01	0.01	0.02
7/29/2022	0	0	0	0	0
7/30/2022	0	0	0	0	0
7/31/2022	0	0	0	0	0
July Total	39,356	20			2.84
8/1/2022	0	0	0	0	0
8/2/2022	0	0	0	0	0
8/3/2022	0	0	0	0	0
8/4/2022	0	0	0.02	0.03	0.03
8/5/2022	0	0	0.31	0.83	0.83
8/6/2022	0	0	0	0	0
8/7/2022	0	0	0.01	0.01	0.02
8/8/2022	0	0	0.21	0.4	0.54
8/9/2022	0	0	0.04	0.12	0.11
8/10/2022	0	0	0.01	0.01	0.01
8/11/2022	0	0	0	0	0
8/12/2022	0	0	0	0	0
8/13/2022	0	0	0	0	0
8/14/2022	0	0	0	0	0
8/15/2022	0	0	0	0	0
8/16/2022	0	0	0	0	0
8/17/2022	0	0	0.03	0.06	0.06
8/18/2022	0	0	0	0	0
8/19/2022	0	0	0	0	0
8/20/2022	0	0	0.09	0.16	0.16
8/21/2022	61,086	20	0.18	0.72	1.47

CSO 60M (060/077)
2022

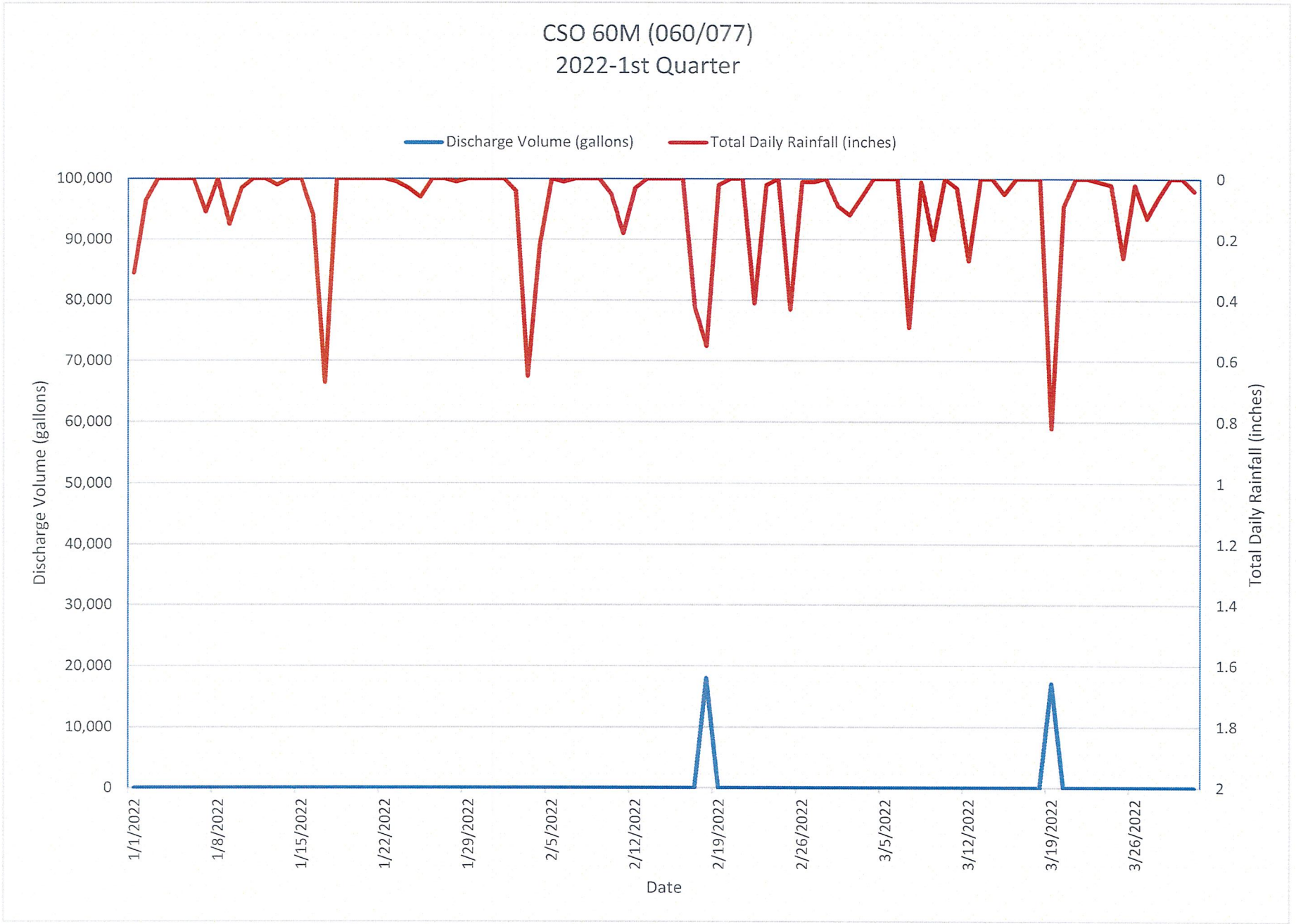
Date	Discharge Volume	Event Duration (mins)	Metro WWTP Rainfall Data (inches)		
			5-Minute Max	1-Hour Max	Daily Total
8/22/2022	0	0	0.14	0.36	0.94
8/23/2022	0	0	0.01	0.02	0.04
8/24/2022	0	0	0	0	0
8/25/2022	0	0	0.08	0.18	0.18
8/26/2022	0	0	0.01	0.01	0.01
8/27/2022	0	0	0	0	0
8/28/2022	0	0	0	0	0
8/29/2022	0	0	0.01	0.01	0.01
8/30/2022	0	0	0.21	0.65	0.9
8/31/2022	0	0	0.01	0.01	0.01
August Total	61,086	20			5.32
9/1/2022	0	0	0.01	0.03	0.03
9/2/2022	0	0	0	0	0
9/3/2022	0	0	0	0	0
9/4/2022	0	0	0.01	0.07	0.08
9/5/2022	0	0	0.01	0.08	0.26
9/6/2022	0	0	0.01	0.01	0.03
9/7/2022	0	0	0.02	0.09	0.31
9/8/2022	0	0	0.01	0.05	0.08
9/9/2022	0	0	0	0	0
9/10/2022	0	0	0	0	0
9/11/2022	0	0	0.01	0.02	0.03
9/12/2022	0	0	0.01	0.01	0.01
9/13/2022	0	0	0.04	0.08	0.17
9/14/2022	0	0	0	0	0
9/15/2022	0	0	0	0	0
9/16/2022	0	0	0	0	0
9/17/2022	0	0	0	0	0
9/18/2022	0	0	0.01	0.01	0.01
9/19/2022	322,777	60	0.36	0.76	1.74
9/20/2022	0	0	0.02	0.03	0.04
9/21/2022	0	0	0	0	0
9/22/2022	0	0	0.02	0.15	0.36
9/23/2022	0	0	0.01	0.02	0.03
9/24/2022	0	0	0	0	0
9/25/2022	0	0	0.01	0.06	0.12
9/26/2022	0	0	0.02	0.04	0.09
9/27/2022	17,100	10	0.07	0.18	0.53
9/28/2022	0	0	0.04	0.14	0.48
9/29/2022	0	0	0	0	0
9/30/2022	0	0	0	0	0
September Total	339,877	70			4.40
10/1/2022	0	0	0	0	0
10/2/2022	0	0	0	0	0
10/3/2022	0	0	0	0	0
10/4/2022	0	0	0	0	0
10/5/2022	0	0	0	0	0
10/6/2022	0	0	0	0	0

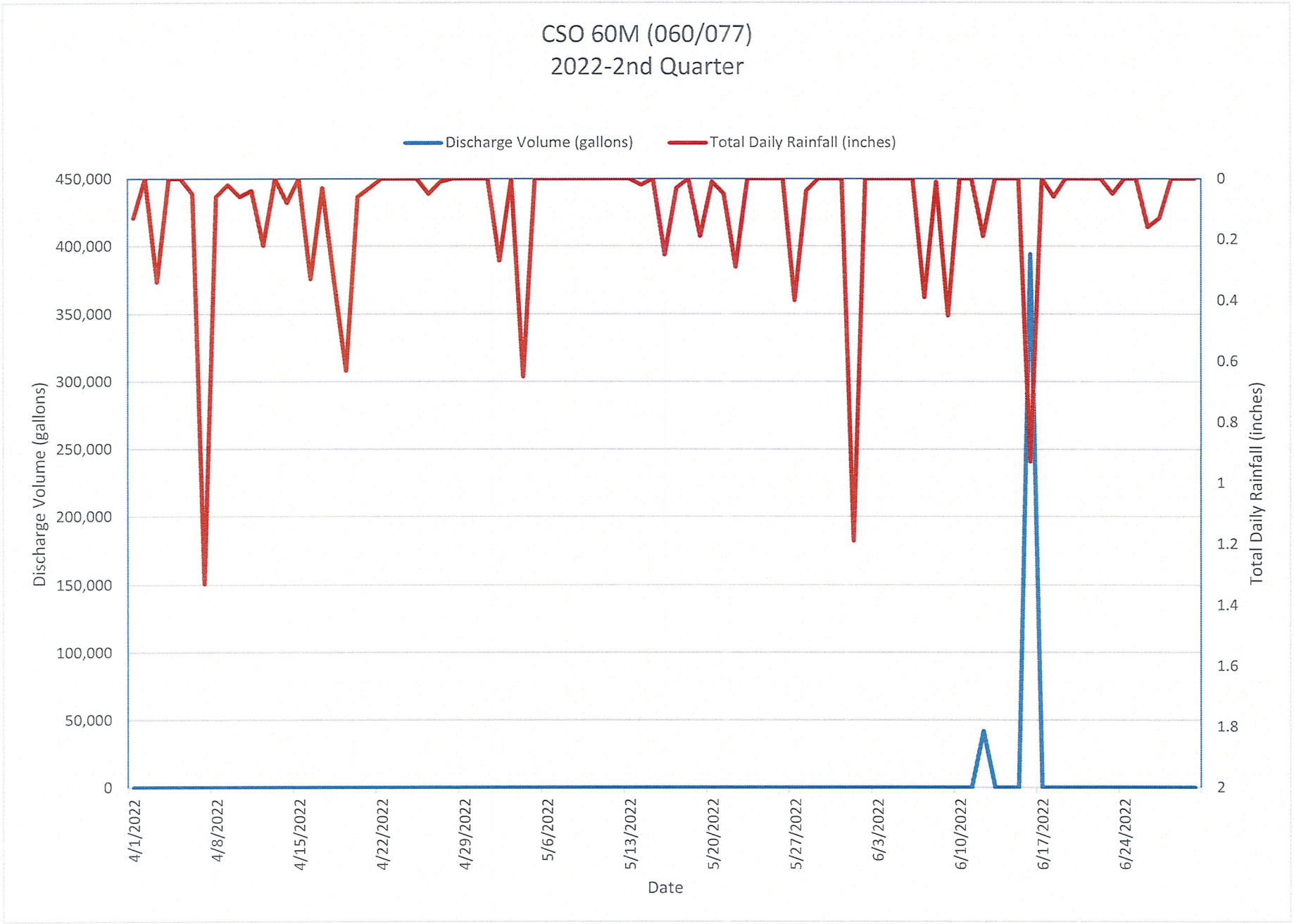
CSO 60M (060/077)
2022

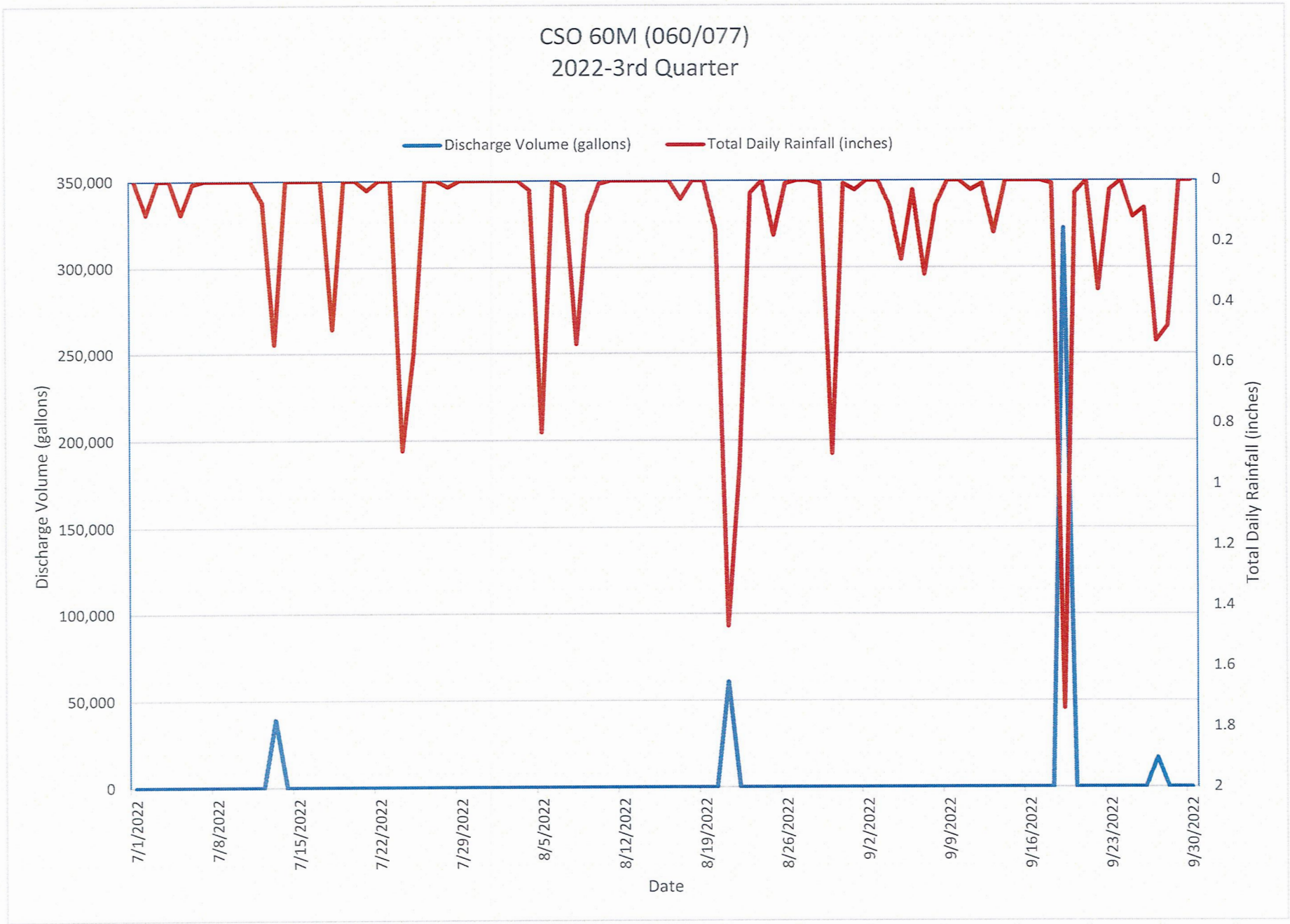
Date	Discharge Volume	Event Duration (mins)	Metro WWTP Rainfall Data (inches)		
			5-Minute Max	1-Hour Max	Daily Total
10/7/2022	0	0	0.01	0.01	0.01
10/8/2022	0	0	0.01	0.04	0.12
10/9/2022	0	0	0	0	0
10/10/2022	0	0	0.01	0.02	0.02
10/11/2022	0	0	0	0	0
10/12/2022	0	0	0	0	0
10/13/2022	0	0	0.07	0.25	0.63
10/14/2022	0	0	0.01	0.02	0.01
10/15/2022	0	0	0	0	0
10/16/2022	0	0	0	0	0
10/17/2022	0	0	0.01	0.06	0.09
10/18/2022	0	0	0.02	0.04	0.07
10/19/2022	0	0	0.01	0.01	0.03
10/20/2022	0	0	0.01	0.02	0.05
10/21/2022	0	0	0	0	0
10/22/2022	0	0	0	0	0
10/23/2022	0	0	0	0	0
10/24/2022	0	0	0	0	0
10/25/2022	0	0	0	0	0
10/26/2022	0	0	0.01	0.04	0.04
10/27/2022	0	0	0.01	0.01	0.01
10/28/2022	0	0	0	0	0
10/29/2022	0	0	0	0	0
10/30/2022	0	0	0	0	0
10/31/2022	0	0	0	0	0
October Total	0	0			1.08
11/1/2022	0	0	0	0	0
11/2/2022	0	0	0	0	0
11/3/2022	0	0	0	0	0
11/4/2022	0	0	0	0	0
11/5/2022	0	0	0	0	0
11/6/2022	0	0	0.03	0.14	0.2
11/7/2022	0	0	0	0	0
11/8/2022	0	0	0	0	0
11/9/2022	0	0	0	0	0
11/10/2022	0	0	0	0	0
11/11/2022	0	0	0.09	0.41	1.17
11/12/2022	63,809	35	0.07	0.69	1.43
11/13/2022	0	0	0.01	0.07	0.18
11/14/2022	0	0	0	0.01	0
11/15/2022	0	0	0.02	0.07	0.1
11/16/2022	0	0	0.02	0.04	0.22
11/17/2022	0	0	0	0	0
11/18/2022	0	0	0.01	0.01	0.01
11/19/2022	0	0	0	0	0
11/20/2022	0	0	0	0	0
11/21/2022	0	0	0	0	0
11/22/2022	0	0	0	0	0

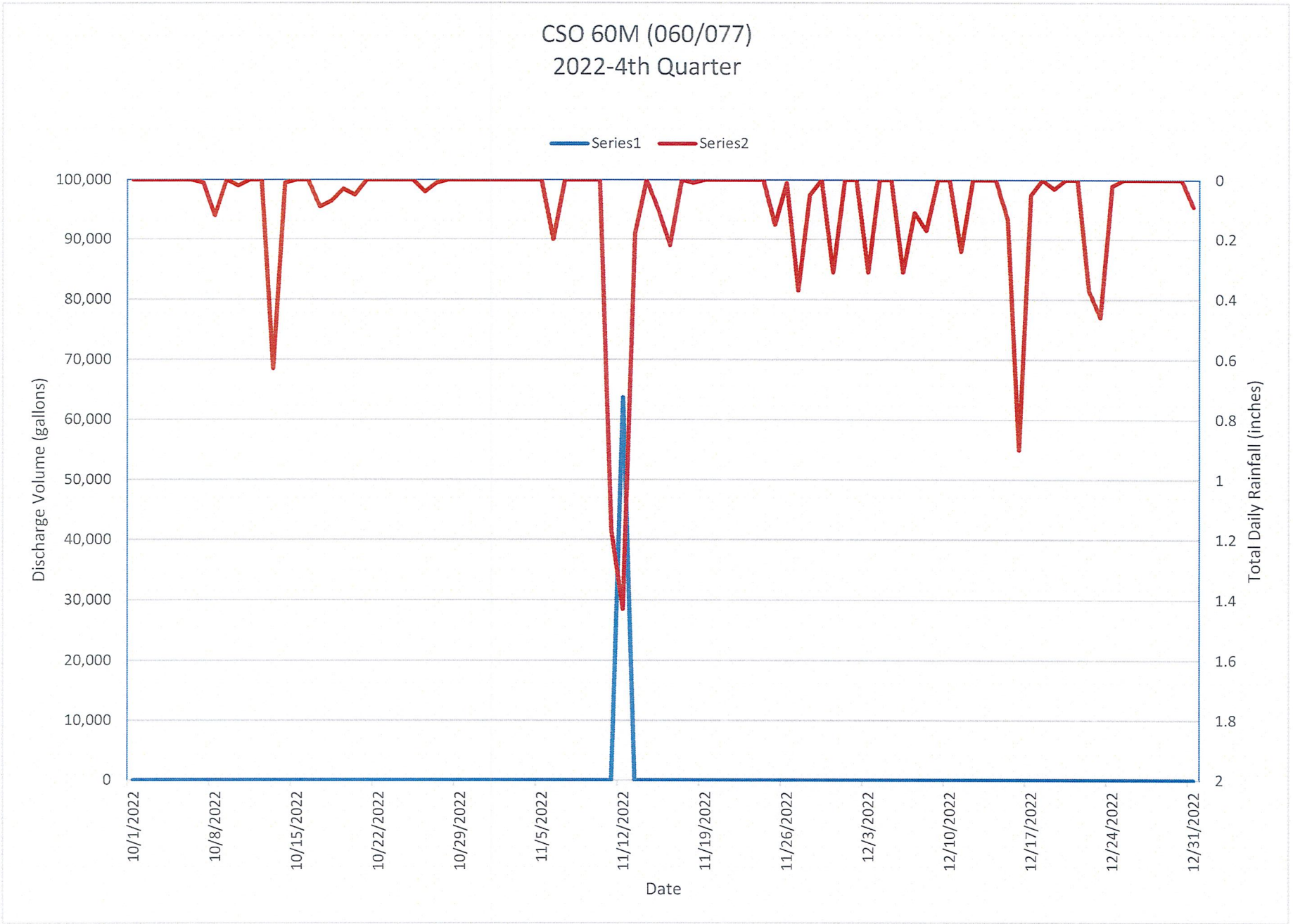
CSO 60M (060/077)
2022

Date	Discharge Volume	Event Duration (mins)	Metro WWTP Rainfall Data (inches)		
			5-Minute Max	1-Hour Max	Daily Total
11/23/2022	0	0	0	0	0
11/24/2022	0	0	0	0	0
11/25/2022	0	0	0.02	0.08	0.15
11/26/2022	0	0	0.01	0.01	0.01
11/27/2022	0	0	0.02	0.1	0.37
11/28/2022	0	0	0.01	0.03	0.05
11/29/2022	0	0	0	0	0
11/30/2022	0	0	0.05	0.14	0.31
November Total	63,809	35			4.20
12/1/2022	0	0	0	0	0
12/2/2022	0	0	0	0	0
12/3/2022	0	0	0.02	0.12	0.31
12/4/2022	0	0	0	0	0
12/5/2022	0	0	0	0	0
12/6/2022	0	0	0.02	0.17	0.31
12/7/2022	0	0	0.01	0.03	0.11
12/8/2022	0	0	0.01	0.06	0.17
12/9/2022	0	0	0	0	0
12/10/2022	0	0	0	0	0
12/11/2022	0	0	0.02	0.06	0.24
12/12/2022	0	0	0	0	0
12/13/2022	0	0	0	0	0
12/14/2022	0	0	0	0	0
12/15/2022	0	0	0.01	0.04	0.13
12/16/2022	0	0	0.01	0.08	0.9
12/17/2022	0	0	0.01	0.02	0.05
12/18/2022	0	0	0	0	0
12/19/2022	0	0	0.01	0.02	0.03
12/20/2022	0	0	0	0	0
12/21/2022	0	0	0	0	0
12/22/2022	0	0	0.02	0.12	0.37
12/23/2022	0	0	0.05	0.1	0.46
12/24/2022	0	0	0.01	0.01	0.02
12/25/2022	0	0	0	0	0
12/26/2022	0	0	0	0	0
12/27/2022	0	0	0	0	0
12/28/2022	0	0	0	0	0
12/29/2022	0	0	0	0	0
12/30/2022	0	0	0	0	0
12/31/2022	0	0	0.01	0.05	0.09
December Total	0	0			3.19


CSO 60M (060/077)
2022-1st Quarter
Discharge Volume (gallons)
Total Daily Rainfall (inches)
100,000
90,000
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
0
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8
2
1/1/2022
1/8/2022
1/15/2022
1/22/2022
1/29/2022
2/5/2022
2/12/2022
2/19/2022
2/26/2022
3/5/2022
3/12/2022
3/19/2022
3/26/2022
Date


CSO 60M (060/077)
2022-2nd Quarter
Discharge Volume (gallons)
Total Daily Rainfall (inches)
450,000
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
0
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8
2
4/1/2022
4/8/2022
4/15/2022
4/22/2022
4/29/2022
5/6/2022
5/13/2022
5/20/2022
5/27/2022
6/3/2022
6/10/2022
6/17/2022
6/24/2022
Date


CSO 60M (060/077)
2022-3rd Quarter
Discharge Volume (gallons)
Total Daily Rainfall (inches)
350,000
300,000
250,000
200,000
150,000
100,000
50,000
0
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8
2
7/1/2022
7/8/2022
7/15/2022
7/22/2022
7/29/2022
8/5/2022
8/12/2022
8/19/2022
8/26/2022
9/2/2022
9/9/2022
9/16/2022
9/23/2022
9/30/2022
Date


CSO 60M (060/077)
2022-4th Quarter
Series1
Series2
Discharge Volume (gallons)
Total Daily Rainfall (inches)
100,000
90,000
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
0
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8
2
10/1/2022
10/8/2022
10/15/2022
10/22/2022
10/29/2022
11/5/2022
11/12/2022
11/19/2022
11/26/2022
12/3/2022
12/10/2022
12/17/2022
12/24/2022
12/31/2022
Date

CSO 078
2022

Date	Discharge Volume	Event Duration (mins)	Metro WWTP Rainfall Data (inches)		
			5-Minute Max	1-Hour Max	Daily Total
1/1/2022	0	0	0.01	0.08	0.31
1/2/2022	0	0	0.01	0.07	0.07
1/3/2022	0	0	0	0	0
1/4/2022	0	0	0	0	0
1/5/2022	0	0	0	0	0
1/6/2022	0	0	0	0	0
1/7/2022	32	5	0.01	0.03	0.11
1/8/2022	0	0	0	0	0
1/9/2022	0	0	0.02	0.07	0.15
1/10/2022	0	0	0.01	0.03	0.03
1/11/2022	0	0	0	0	0
1/12/2022	0	0	0	0	0
1/13/2022	0	0	0.01	0.01	0.02
1/14/2022	0	0	0	0	0
1/15/2022	0	0	0	0	0
1/16/2022	0	0	0.01	0.07	0.12
1/17/2022	0	0	0.02	0.16	0.67
1/18/2022	0	0	0	0	0
1/19/2022	0	0	0	0	0
1/20/2022	0	0	0	0	0
1/21/2022	0	0	0	0	0
1/22/2022	0	0	0	0	0
1/23/2022	0	0	0.01	0.01	0.01
1/24/2022	0	0	0.01	0.01	0.03
1/25/2022	0	0	0.01	0.03	0.06
1/26/2022	0	0	0	0	0
1/27/2022	0	0	0	0	0
1/28/2022	0	0	0.01	0.01	0.01
1/29/2022	0	0	0	0	0
1/30/2022	0	0	0	0	0
1/31/2022	0	0	0	0	0
January Total	32	5			1.59
2/1/2022	0	0	0	0	0
2/2/2022	0	0	0.01	0.04	0.04
2/3/2022	0	0	0.01	0.08	0.65
2/4/2022	0	0	0.01	0.06	0.22
2/5/2022	0	0	0	0	0
2/6/2022	0	0	0.01	0.01	0.01
2/7/2022	0	0	0	0	0
2/8/2022	0	0	0	0	0
2/9/2022	0	0	0	0	0
2/10/2022	0	0	0.01	0.03	0.05
2/11/2022	0	0	0.01	0.09	0.18
2/12/2022	0	0	0.02	0.03	0.03
2/13/2022	0	0	0	0	0
2/14/2022	0	0	0	0	0
2/15/2022	0	0	0	0	0
2/16/2022	0	0	0	0	0

CSO 078
2022

Date	Discharge Volume	Event Duration (mins)	Metro WWTP Rainfall Data (inches)		
			5-Minute Max	1-Hour Max	Daily Total
2/17/2022	0	0	0.02	0.09	0.42
2/18/2022	137,236	110	0.03	0.27	0.55
2/19/2022	0	0	0.01	0.01	0.02
2/20/2022	0	0	0	0	0
2/21/2022	0	0	0	0	0
2/22/2022	566	5	0.03	0.12	0.41
2/23/2022	0	0	0.01	0.05	0.02
2/24/2022	0	0	0	0	0
2/25/2022	0	0	0.02	0.14	0.43
2/26/2022	0	0	0.01	0.01	0.01
2/27/2022	0	0	0.01	0.01	0.01
2/28/2022	0	0	0	0	0
February Total	137,802	115			3.05
3/1/2022	0	0	0.01	0.07	0.09
3/2/2022	0	0	0.01	0.05	0.12
3/3/2022	0	0	0.01	0.03	0.06
3/4/2022	0	0	0	0	0
3/5/2022	0	0	0	0	0
3/6/2022	0	0	0	0	0
3/7/2022	3,316	10	0.05	0.17	0.49
3/8/2022	0	0	0.01	0.01	0.01
3/9/2022	0	0	0.01	0.06	0.2
3/10/2022	0	0	0	0	0
3/11/2022	0	0	0.01	0.03	0.03
3/12/2022	0	0	0.01	0.04	0.27
3/13/2022	0	0	0	0	0
3/14/2022	0	0	0	0	0
3/15/2022	0	0	0.01	0.02	0.05
3/16/2022	0	0	0	0	0
3/17/2022	0	0	0	0	0
3/18/2022	0	0	0	0	0
3/19/2022	55,760	25	0.11	0.21	0.82
3/20/2022	0	0	0.01	0.03	0.09
3/21/2022	0	0	0	0	0
3/22/2022	0	0	0	0	0
3/23/2022	0	0	0.01	0.01	0.01
3/24/2022	0	0	0.01	0.02	0.02
3/25/2022	0	0	0.02	0.1	0.26
3/26/2022	0	0	0.01	0.02	0.02
3/27/2022	0	0	0.01	0.03	0.13
3/28/2022	0	0	0.01	0.03	0.06
3/29/2022	0	0	0	0	0
3/30/2022	0	0	0	0	0
3/31/2022	0	0	0.03	0.04	0.04
March Total	59,076	35			2.77
4/1/2022	0	0	0.01	0.05	0.13
4/2/2022	0	0	0	0	0
4/3/2022	0	0	0.01	0.07	0.34

CSO 078
2022

Date	Discharge Volume	Event Duration (mins)	Metro WWTP Rainfall Data (inches)		
			5-Minute Max	1-Hour Max	Daily Total
4/4/2022	0	0	0	0	0
4/5/2022	0	0	0	0	0
4/6/2022	0	0	0.01	0.05	0.05
4/7/2022	0	0	0.03	0.22	1.33
4/8/2022	0	0	0.01	0.05	0.06
4/9/2022	0	0	0.01	0.01	0.02
4/10/2022	0	0	0.01	0.04	0.06
4/11/2022	0	0	0.01	0.03	0.04
4/12/2022	0	0	0.01	0.06	0.22
4/13/2022	0	0	0	0	0
4/14/2022	42,279	70	0.01	0.06	0.08
4/15/2022	0	0	0	0	0
4/16/2022	0	0	0.03	0.08	0.33
4/17/2022	0	0	0.01	0.03	0.03
4/18/2022	0	0	0.01	0.1	0.34
4/19/2022	0	0	0.05	0.13	0.63
4/20/2022	0	0	0.01	0.05	0.06
4/21/2022	0	0	0.01	0.03	0.03
4/22/2022	0	0	0	0	0
4/23/2022	0	0	0	0	0
4/24/2022	0	0	0	0	0
4/25/2022	0	0	0	0	0
4/26/2022	0	0	0.01	0.02	0.05
4/27/2022	0	0	0.01	0.01	0.01
4/28/2022	0	0	0	0	0
4/29/2022	0	0	0	0	0
4/30/2022	0	0	0	0	0
April Total	42,279	70			3.81
5/1/2022	0	0	0	0	0
5/2/2022	0	0	0.04	0.16	0.27
5/3/2022	0	0	0	0	0
5/4/2022	0	0	0.04	0.31	0.65
5/5/2022	0	0	0	0	0
5/6/2022	0	0	0	0	0
5/7/2022	0	0	0	0	0
5/8/2022	0	0	0	0	0
5/9/2022	0	0	0	0	0
5/10/2022	0	0	0	0	0
5/11/2022	0	0	0	0	0
5/12/2022	0	0	0	0	0
5/13/2022	0	0	0	0	0
5/14/2022	0	0	0.02	0.02	0.02
5/15/2022	0	0	0	0	0
5/16/2022	0	0	0.06	0.14	0.25
5/17/2022	0	0	0.01	0.03	0.03
5/18/2022	0	0	0	0	0
5/19/2022	0	0	0.07	0.11	0.19
5/20/2022	0	0	0.01	0.01	0.01

CSO 078
2022

Date	Discharge Volume	Event Duration (mins)	Metro WWTP Rainfall Data (inches)		
			5-Minute Max	1-Hour Max	Daily Total
5/21/2022	0	0	0.03	0.05	0.05
5/22/2022	16,153	10	0.1	0.29	0.29
5/23/2022	0	0	0	0	0
5/24/2022	0	0	0	0	0
5/25/2022	0	0	0	0	0
5/26/2022	0	0	0	0	0
5/27/2022	29,433	20	0.09	0.28	0.4
5/28/2022	0	0	0.01	0.02	0.04
5/29/2022	0	0	0	0	0
5/30/2022	0	0	0	0	0
5/31/2022	0	0	0	0	0
May Total	45,586	30			2.20
6/1/2022	0	0	0.19	0.82	1.19
6/2/2022	0	0	0	0	0
6/3/2022	0	0	0	0	0
6/4/2022	0	0	0	0	0
6/5/2022	0	0	0	0	0
6/6/2022	0	0	0	0	0
6/7/2022	0	0	0.05	0.18	0.39
6/8/2022	0	0	0.01	0.07	0.01
6/9/2022	0	0	0.05	0.18	0.45
6/10/2022	0	0	0	0	0
6/11/2022	0	0	0	0	0
6/12/2022	47,304	20	0.04	0.14	0.19
6/13/2022	0	0	0	0	0
6/14/2022	0	0	0	0	0
6/15/2022	0	0	0	0	0
6/16/2022	146,179	40	0.32	0.77	0.93
6/17/2022	0	0	0	0	0
6/18/2022	0	0	0.02	0.06	0.06
6/19/2022	0	0	0	0	0
6/20/2022	0	0	0	0	0
6/21/2022	0	0	0	0	0
6/22/2022	0	0	0	0	0
6/23/2022	0	0	0.01	0.04	0.05
6/24/2022	0	0	0	0	0
6/25/2022	0	0	0	0	0
6/26/2022	0	0	0.07	0.16	0.16
6/27/2022	0	0	0.05	0.07	0.13
6/28/2022	0	0	0	0	0
6/29/2022	0	0	0	0	0
6/30/2022	0	0	0	0	0
June Total	193,483	60			3.56
7/1/2022	0	0	0	0	0
7/2/2022	0	0	0.02	0.07	0.11
7/3/2022	0	0	0	0	0
7/4/2022	0	0	0	0	0
7/5/2022	0	0	0.02	0.09	0.11

CSO 078
2022

Date	Discharge Volume	Event Duration (mins)	Metro WWTP Rainfall Data (inches)		
			5-Minute Max	1-Hour Max	Daily Total
7/6/2022	0	0	0.01	0.01	0.01
7/7/2022	0	0	0	0	0
7/8/2022	0	0	0	0	0
7/9/2022	0	0	0	0	0
7/10/2022	0	0	0	0	0
7/11/2022	0	0	0	0	0
7/12/2022	0	0	0.03	0.07	0.07
7/13/2022	37,520	15	0.36	0.54	0.54
7/14/2022	0	0	0	0	0
7/15/2022	0	0	0	0	0
7/16/2022	0	0	0	0	0
7/17/2022	0	0	0	0	0
7/18/2022	0	0	0.03	0.13	0.49
7/19/2022	0	0	0	0	0
7/20/2022	0	0	0	0	0
7/21/2022	0	0	0.01	0.01	0.03
7/22/2022	0	0	0	0	0
7/23/2022	0	0	0	0	0
7/24/2022	43,304	20	0.16	0.44	0.89
7/25/2022	14,740	10	0.13	0.43	0.57
7/26/2022	0	0	0	0	0
7/27/2022	0	0	0	0	0
7/28/2022	0	0	0.01	0.01	0.02
7/29/2022	0	0	0	0	0
7/30/2022	0	0	0	0	0
7/31/2022	0	0	0	0	0
July Total	95,564	45			2.84
8/1/2022	0	0	0	0	0
8/2/2022	0	0	0	0	0
8/3/2022	0	0	0	0	0
8/4/2022	0	0	0.02	0.03	0.03
8/5/2022	13,351	5	0.31	0.83	0.83
8/6/2022	0	0	0	0	0
8/7/2022	0	0	0.01	0.01	0.02
8/8/2022	32,673	15	0.21	0.4	0.54
8/9/2022	0	0	0.04	0.12	0.11
8/10/2022	0	0	0.01	0.01	0.01
8/11/2022	0	0	0	0	0
8/12/2022	0	0	0	0	0
8/13/2022	0	0	0	0	0
8/14/2022	0	0	0	0	0
8/15/2022	0	0	0	0	0
8/16/2022	0	0	0	0	0
8/17/2022	0	0	0.03	0.06	0.06
8/18/2022	0	0	0	0	0
8/19/2022	0	0	0	0	0
8/20/2022	0	0	0.09	0.16	0.16
8/21/2022	330,176	85	0.18	0.72	1.47

CSO 078
2022

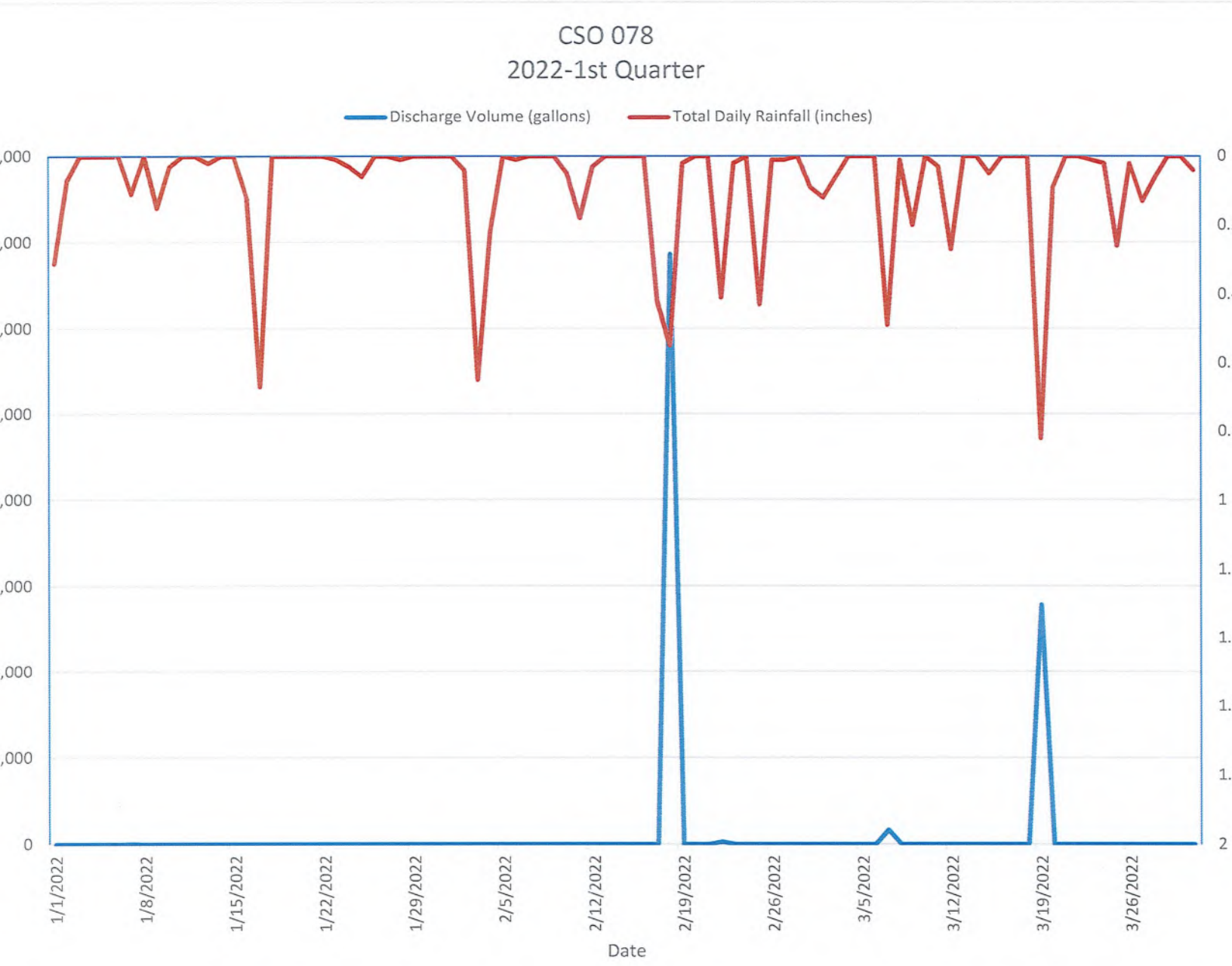
Date	Discharge Volume	Event Duration (mins)	Metro WWTP Rainfall Data (inches)		
			5-Minute Max	1-Hour Max	Daily Total
8/22/2022	55,913	20	0.14	0.36	0.94
8/23/2022	4,402	5	0.01	0.02	0.04
8/24/2022	0	0	0	0	0
8/25/2022	15,836	10	0.08	0.18	0.18
8/26/2022	0	0	0.01	0.01	0.01
8/27/2022	0	0	0	0	0
8/28/2022	0	0	0	0	0
8/29/2022	0	0	0.01	0.01	0.01
8/30/2022	41,384	20	0.21	0.65	0.9
8/31/2022	0	0	0.01	0.01	0.01
August Total	493,735	160			5.32
9/1/2022	0	0	0.01	0.03	0.03
9/2/2022	0	0	0	0	0
9/3/2022	0	0	0	0	0
9/4/2022	0	0	0.01	0.07	0.08
9/5/2022	0	0	0.01	0.08	0.26
9/6/2022	0	0	0.01	0.01	0.03
9/7/2022	0	0	0.02	0.09	0.31
9/8/2022	57,963	45	0.01	0.05	0.08
9/9/2022	0	0	0	0	0
9/10/2022	0	0	0	0	0
9/11/2022	0	0	0.01	0.02	0.03
9/12/2022	0	0	0.01	0.01	0.01
9/13/2022	0	0	0.04	0.08	0.17
9/14/2022	0	0	0	0	0
9/15/2022	0	0	0	0	0
9/16/2022	0	0	0	0	0
9/17/2022	0	0	0	0	0
9/18/2022	0	0	0.01	0.01	0.01
9/19/2022	293,269	75	0.36	0.76	1.74
9/20/2022	0	0	0.02	0.03	0.04
9/21/2022	0	0	0	0	0
9/22/2022	0	0	0.02	0.15	0.36
9/23/2022	0	0	0.01	0.02	0.03
9/24/2022	0	0	0	0	0
9/25/2022	0	0	0.01	0.06	0.12
9/26/2022	0	0	0.02	0.04	0.09
9/27/2022	49,497	25	0.07	0.18	0.53
9/28/2022	0	0	0.04	0.14	0.48
9/29/2022	0	0	0	0	0
9/30/2022	0	0	0	0	0
September Total	400,729	145			4.40
10/1/2022	0	0	0	0	0
10/2/2022	0	0	0	0	0
10/3/2022	0	0	0	0	0
10/4/2022	0	0	0	0	0
10/5/2022	0	0	0	0	0
10/6/2022	0	0	0	0	0

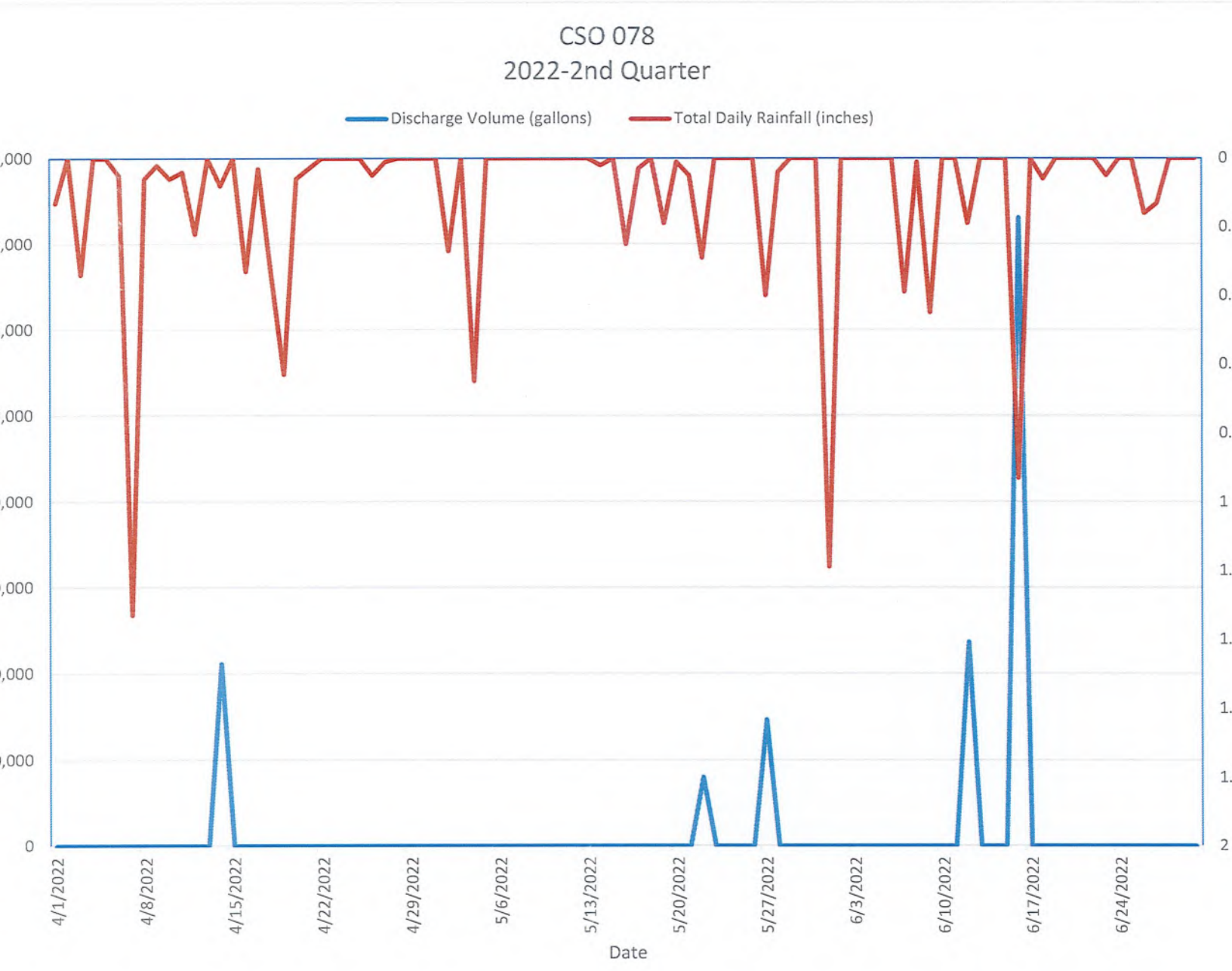
CSO 078
2022

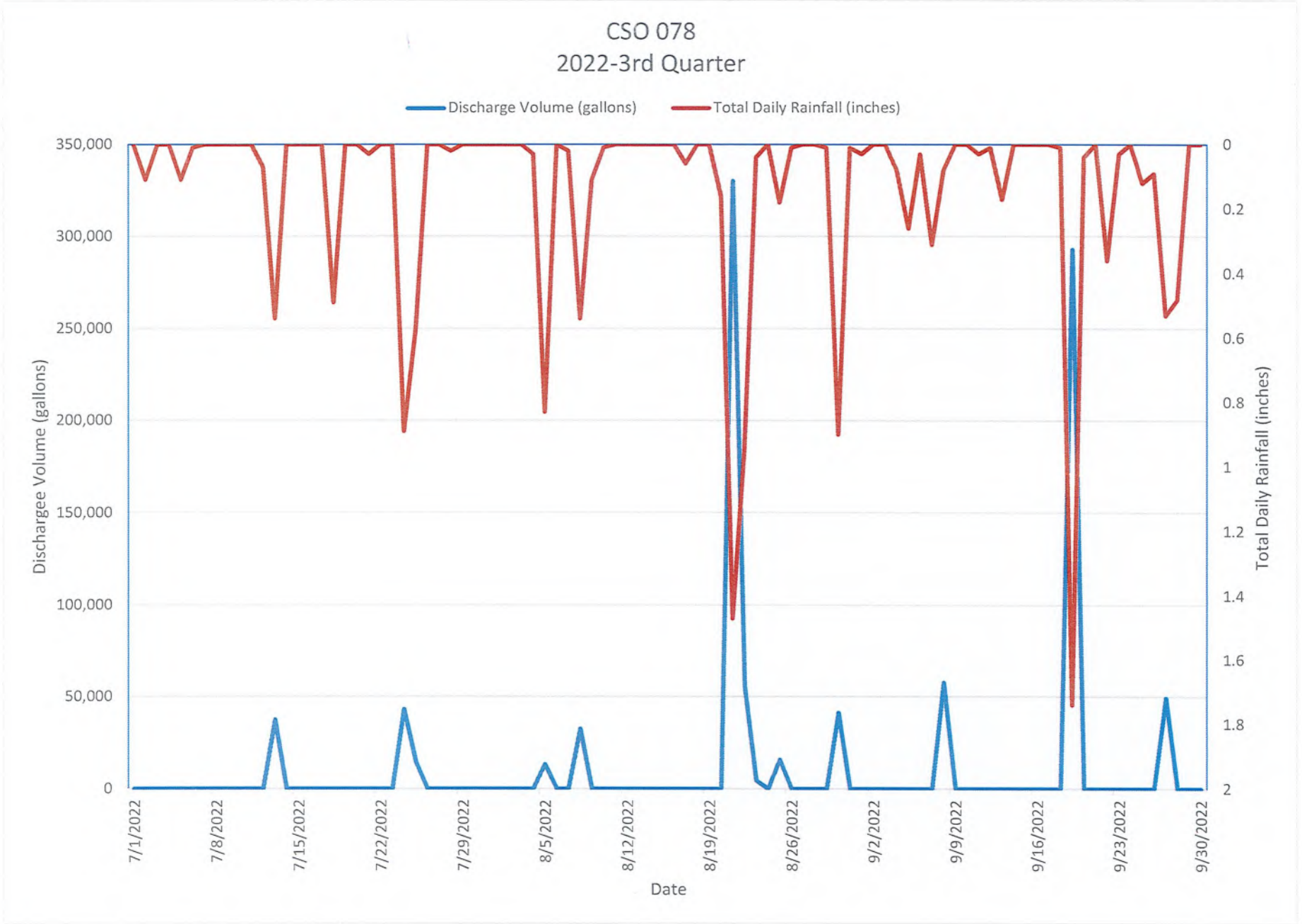
Date	Discharge Volume	Event Duration (mins)	Metro WWTP Rainfall Data (inches)		
			5-Minute Max	1-Hour Max	Daily Total
10/7/2022	0	0	0.01	0.01	0.01
10/8/2022	0	0	0.01	0.04	0.12
10/9/2022	0	0	0	0	0
10/10/2022	0	0	0.01	0.02	0.02
10/11/2022	0	0	0	0	0
10/12/2022	0	0	0	0	0
10/13/2022	0	0	0.07	0.25	0.63
10/14/2022	0	0	0.01	0.02	0.01
10/15/2022	0	0	0	0	0
10/16/2022	0	0	0	0	0
10/17/2022	0	0	0.01	0.06	0.09
10/18/2022	0	0	0.02	0.04	0.07
10/19/2022	0	0	0.01	0.01	0.03
10/20/2022	0	0	0.01	0.02	0.05
10/21/2022	0	0	0	0	0
10/22/2022	0	0	0	0	0
10/23/2022	0	0	0	0	0
10/24/2022	0	0	0	0	0
10/25/2022	0	0	0	0	0
10/26/2022	0	0	0.01	0.04	0.04
10/27/2022	0	0	0.01	0.01	0.01
10/28/2022	0	0	0	0	0
10/29/2022	0	0	0	0	0
10/30/2022	0	0	0	0	0
10/31/2022	0	0	0	0	0
October Total	0	0			1.08
11/1/2022	0	0	0	0	0
11/2/2022	0	0	0	0	0
11/3/2022	0	0	0	0	0
11/4/2022	0	0	0	0	0
11/5/2022	0	0	0	0	0
11/6/2022	0	0	0.03	0.14	0.2
11/7/2022	0	0	0	0	0
11/8/2022	0	0	0	0	0
11/9/2022	0	0	0	0	0
11/10/2022	0	0	0	0	0
11/11/2022	7,618	15	0.09	0.41	1.17
11/12/2022	228,853	180	0.07	0.69	1.43
11/13/2022	0	0	0.01	0.07	0.18
11/14/2022	0	0	0	0.01	0
11/15/2022	0	0	0.02	0.07	0.1
11/16/2022	0	0	0.02	0.04	0.22
11/17/2022	0	0	0	0	0
11/18/2022	0	0	0.01	0.01	0.01
11/19/2022	0	0	0	0	0
11/20/2022	0	0	0	0	0
11/21/2022	0	0	0	0	0
11/22/2022	0	0	0	0	0

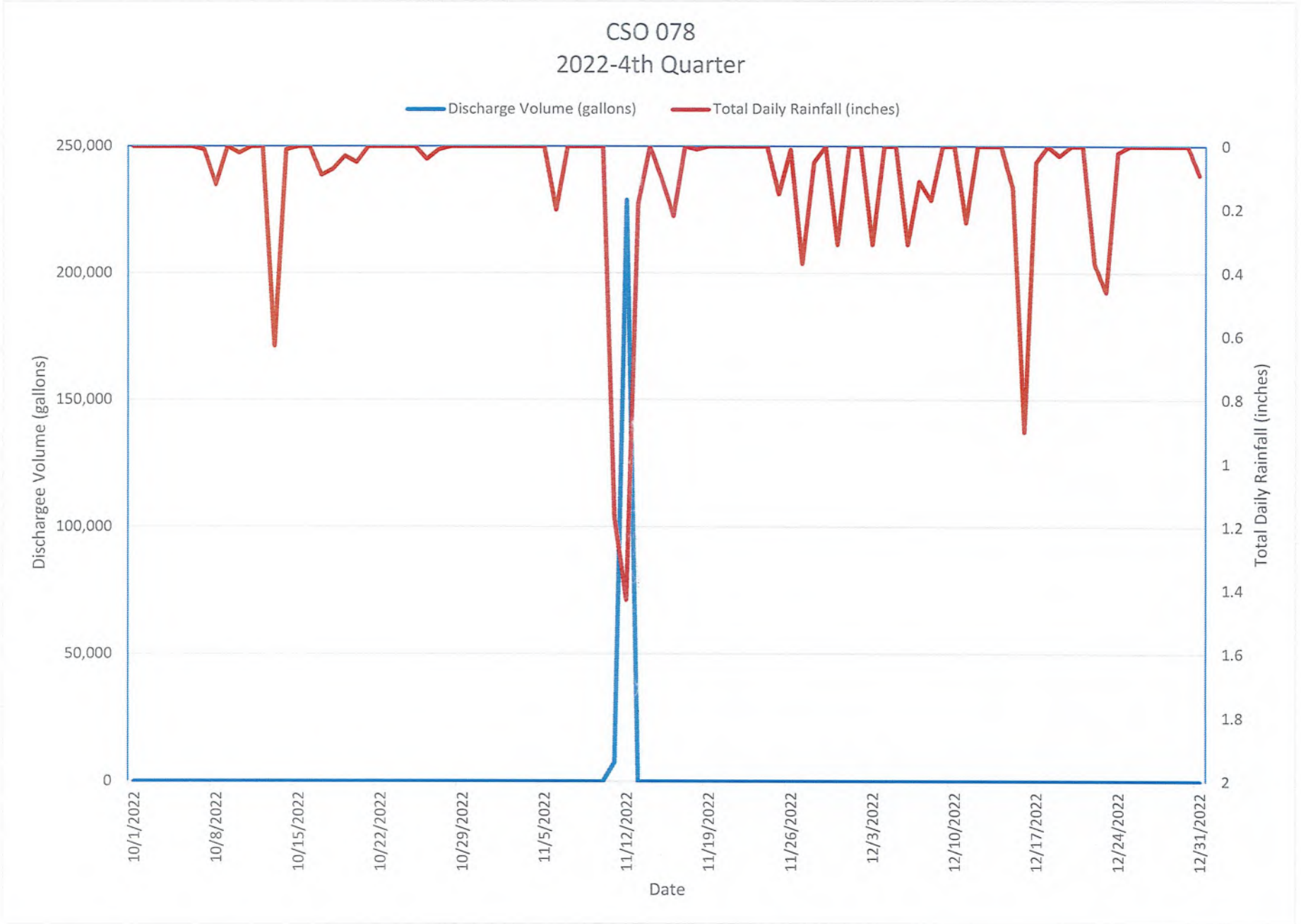
CSO 078
2022

Date	Discharge Volume	Event Duration (mins)	Metro WWTP Rainfall Data (inches)		
			5-Minute Max	1-Hour Max	Daily Total
11/23/2022	0	0	0	0	0
11/24/2022	0	0	0	0	0
11/25/2022	0	0	0.02	0.08	0.15
11/26/2022	0	0	0.01	0.01	0.01
11/27/2022	0	0	0.02	0.1	0.37
11/28/2022	0	0	0.01	0.03	0.05
11/29/2022	0	0	0	0	0
11/30/2022	0	0	0.05	0.14	0.31
November Total	236,471	195			4.20
12/1/2022	0	0	0	0	0
12/2/2022	0	0	0	0	0
12/3/2022	0	0	0.02	0.12	0.31
12/4/2022	0	0	0	0	0
12/5/2022	0	0	0	0	0
12/6/2022	0	0	0.02	0.17	0.31
12/7/2022	0	0	0.01	0.03	0.11
12/8/2022	0	0	0.01	0.06	0.17
12/9/2022	0	0	0	0	0
12/10/2022	0	0	0	0	0
12/11/2022	0	0	0.02	0.06	0.24
12/12/2022	0	0	0	0	0
12/13/2022	0	0	0	0	0
12/14/2022	0	0	0	0	0
12/15/2022	0	0	0.01	0.04	0.13
12/16/2022	13	5	0.01	0.08	0.9
12/17/2022	0	0	0.01	0.02	0.05
12/18/2022	0	0	0	0	0
12/19/2022	0	0	0.01	0.02	0.03
12/20/2022	0	0	0	0	0
12/21/2022	0	0	0	0	0
12/22/2022	0	0	0.02	0.12	0.37
12/23/2022	0	0	0.05	0.1	0.46
12/24/2022	0	0	0.01	0.01	0.02
12/25/2022	0	0	0	0	0
12/26/2022	0	0	0	0	0
12/27/2022	0	0	0	0	0
12/28/2022	0	0	0	0	0
12/29/2022	0	0	0	0	0
12/30/2022	0	0	0	0	0
12/31/2022	0	0	0.01	0.05	0.09
December Total	13	5			3.19


CSO 078
2022-1st Quarter
Discharge Volume (gallons)
Total Daily Rainfall (inches)
,000
,000
,000
,000
,000
,000
,000
0
0
0.
0.
0.
0.
1
1.
1.
1.
2
1/1/2022
1/8/2022
1/15/2022
1/22/2022
1/29/2022
2/5/2022
2/12/2022
2/19/2022
2/26/2022
3/5/2022
3/12/2022
3/19/2022
3/26/2022
Date


CSO 078
2022-2nd Quarter
Discharge Volume (gallons)
Total Daily Rainfall (inches)
,000
,000
,000
,000
,000
,000
,000
0
0
0.
0.
0.
0.
1
1.
1.
1.
1.
2
4/1/2022
4/8/2022
4/15/2022
4/22/2022
4/29/2022
5/6/2022
5/13/2022
5/20/2022
5/27/2022
6/3/2022
6/10/2022
6/17/2022
6/24/2022
Date


CSO 078
2022-3rd Quarter
Discharge Volume (gallons)
Total Daily Rainfall (inches)
350,000
300,000
250,000
200,000
150,000
100,000
50,000
0
Discharge Volume (gallons)
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8
2
Total Daily Rainfall (inches)
7/1/2022
7/8/2022
7/15/2022
7/22/2022
7/29/2022
8/5/2022
8/12/2022
8/19/2022
8/26/2022
9/2/2022
9/9/2022
9/16/2022
9/23/2022
9/30/2022
Date


CSO 078
2022-4th Quarter
Discharge Volume (gallons)
Total Daily Rainfall (inches)
250,000
200,000
150,000
100,000
50,000
0
Dischargee Volume (gallons)
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8
2
Total Daily Rainfall (inches)
10/1/2022
10/8/2022
10/15/2022
10/22/2022
10/29/2022
11/5/2022
11/12/2022
11/19/2022
11/26/2022
12/3/2022
12/10/2022
12/17/2022
12/24/2022
12/31/2022
Date

CSO 080
2022

Date	Discharge Volume	Event Duration (mins)	Metro WWTP Rainfall Data (inches)		
			5-Minute Max	1-Hour Max	Daily Total
1/1/2022	0	0	0.01	0.08	0.31
1/2/2022	0	0	0.01	0.07	0.07
1/3/2022	0	0	0	0	0
1/4/2022	0	0	0	0	0
1/5/2022	0	0	0	0	0
1/6/2022	0	0	0	0	0
1/7/2022	0	0	0.01	0.03	0.11
1/8/2022	0	0	0	0	0
1/9/2022	0	0	0.02	0.07	0.15
1/10/2022	0	0	0.01	0.03	0.03
1/11/2022	0	0	0	0	0
1/12/2022	0	0	0	0	0
1/13/2022	0	0	0.01	0.01	0.02
1/14/2022	0	0	0	0	0
1/15/2022	0	0	0	0	0
1/16/2022	0	0	0.01	0.07	0.12
1/17/2022	0	0	0.02	0.16	0.67
1/18/2022	0	0	0	0	0
1/19/2022	0	0	0	0	0
1/20/2022	0	0	0	0	0
1/21/2022	0	0	0	0	0
1/22/2022	0	0	0	0	0
1/23/2022	0	0	0.01	0.01	0.01
1/24/2022	0	0	0.01	0.01	0.03
1/25/2022	0	0	0.01	0.03	0.06
1/26/2022	0	0	0	0	0
1/27/2022	0	0	0	0	0
1/28/2022	0	0	0.01	0.01	0.01
1/29/2022	0	0	0	0	0
1/30/2022	0	0	0	0	0
1/31/2022	0	0	0	0	0
January Total	0	0			1.59
2/1/2022	0	0	0	0	0
2/2/2022	0	0	0.01	0.04	0.04
2/3/2022	0	0	0.01	0.08	0.65
2/4/2022	0	0	0.01	0.06	0.22
2/5/2022	0	0	0	0	0
2/6/2022	0	0	0.01	0.01	0.01
2/7/2022	0	0	0	0	0
2/8/2022	0	0	0	0	0
2/9/2022	0	0	0	0	0
2/10/2022	0	0	0.01	0.03	0.05
2/11/2022	0	0	0.01	0.09	0.18
2/12/2022	0	0	0.02	0.03	0.03
2/13/2022	0	0	0	0	0
2/14/2022	0	0	0	0	0
2/15/2022	0	0	0	0	0
2/16/2022	0	0	0	0	0

CSO 080
2022

Date	Discharge Volume	Event Duration (mins)	Metro WWTP Rainfall Data (inches)		
			5-Minute Max	1-Hour Max	Daily Total
2/17/2022	0	0	0.02	0.09	0.42
2/18/2022	3,433,127	77	0.03	0.27	0.55
2/19/2022	0	0	0.01	0.01	0.02
2/20/2022	0	0	0	0	0
2/21/2022	0	0	0	0	0
2/22/2022	0	0	0.03	0.12	0.41
2/23/2022	0	0	0.01	0.05	0.02
2/24/2022	0	0	0	0	0
2/25/2022	0	0	0.02	0.14	0.43
2/26/2022	0	0	0.01	0.01	0.01
2/27/2022	0	0	0.01	0.01	0.01
2/28/2022	0	0	0	0	0
February Total	3,433,127	77			3.05
3/1/2022	0	0	0.01	0.07	0.09
3/2/2022	0	0	0.01	0.05	0.12
3/3/2022	0	0	0.01	0.03	0.06
3/4/2022	0	0	0	0	0
3/5/2022	0	0	0	0	0
3/6/2022	0	0	0	0	0
3/7/2022	0	0	0.05	0.17	0.49
3/8/2022	0	0	0.01	0.01	0.01
3/9/2022	0	0	0.01	0.06	0.2
3/10/2022	0	0	0	0	0
3/11/2022	0	0	0.01	0.03	0.03
3/12/2022	0	0	0.01	0.04	0.27
3/13/2022	0	0	0	0	0
3/14/2022	0	0	0	0	0
3/15/2022	0	0	0.01	0.02	0.05
3/16/2022	0	0	0	0	0
3/17/2022	0	0	0	0	0
3/18/2022	0	0	0	0	0
3/19/2022	0	0	0.11	0.21	0.82
3/20/2022	0	0	0.01	0.03	0.09
3/21/2022	0	0	0	0	0
3/22/2022	0	0	0	0	0
3/23/2022	0	0	0.01	0.01	0.01
3/24/2022	0	0	0.01	0.02	0.02
3/25/2022	0	0	0.02	0.1	0.26
3/26/2022	0	0	0.01	0.02	0.02
3/27/2022	0	0	0.01	0.03	0.13
3/28/2022	0	0	0.01	0.03	0.06
3/29/2022	0	0	0	0	0
3/30/2022	0	0	0	0	0
3/31/2022	0	0	0.03	0.04	0.04
March Total	0	0			2.77
4/1/2022	0	0	0.01	0.05	0.13
4/2/2022	0	0	0	0	0
4/3/2022	0	0	0.01	0.07	0.34

CSO 080
2022

Date	Discharge Volume	Event Duration (mins)	Metro WWTP Rainfall Data (inches)		
			5-Minute Max	1-Hour Max	Daily Total
4/4/2022	0	0	0	0	0
4/5/2022	0	0	0	0	0
4/6/2022	0	0	0.01	0.05	0.05
4/7/2022	0	0	0.03	0.22	1.33
4/8/2022	0	0	0.01	0.05	0.06
4/9/2022	0	0	0.01	0.01	0.02
4/10/2022	0	0	0.01	0.04	0.06
4/11/2022	0	0	0.01	0.03	0.04
4/12/2022	0	0	0.01	0.06	0.22
4/13/2022	0	0	0	0	0
4/14/2022	0	0	0.01	0.06	0.08
4/15/2022	0	0	0	0	0
4/16/2022	0	0	0.03	0.08	0.33
4/17/2022	0	0	0.01	0.03	0.03
4/18/2022	0	0	0.01	0.1	0.34
4/19/2022	0	0	0.05	0.13	0.63
4/20/2022	0	0	0.01	0.05	0.06
4/21/2022	0	0	0.01	0.03	0.03
4/22/2022	0	0	0	0	0
4/23/2022	0	0	0	0	0
4/24/2022	0	0	0	0	0
4/25/2022	0	0	0	0	0
4/26/2022	0	0	0.01	0.02	0.05
4/27/2022	0	0	0.01	0.01	0.01
4/28/2022	0	0	0	0	0
4/29/2022	0	0	0	0	0
4/30/2022	0	0	0	0	0
April Total	0	0			3.81
5/1/2022	0	0	0	0	0
5/2/2022	0	0	0.04	0.16	0.27
5/3/2022	0	0	0	0	0
5/4/2022	0	0	0.04	0.31	0.65
5/5/2022	0	0	0	0	0
5/6/2022	0	0	0	0	0
5/7/2022	0	0	0	0	0
5/8/2022	0	0	0	0	0
5/9/2022	0	0	0	0	0
5/10/2022	0	0	0	0	0
5/11/2022	0	0	0	0	0
5/12/2022	0	0	0	0	0
5/13/2022	0	0	0	0	0
5/14/2022	0	0	0.02	0.02	0.02
5/15/2022	0	0	0	0	0
5/16/2022	0	0	0.06	0.14	0.25
5/17/2022	0	0	0.01	0.03	0.03
5/18/2022	0	0	0	0	0
5/19/2022	0	0	0.07	0.11	0.19
5/20/2022	0	0	0.01	0.01	0.01

CSO 080
2022

Date	Discharge Volume	Event Duration (mins)	Metro WWTP Rainfall Data (inches)		
			5-Minute Max	1-Hour Max	Daily Total
5/21/2022	0	0	0.03	0.05	0.05
5/22/2022	0	0	0.1	0.29	0.29
5/23/2022	0	0	0	0	0
5/24/2022	0	0	0	0	0
5/25/2022	0	0	0	0	0
5/26/2022	0	0	0	0	0
5/27/2022	0	0	0.09	0.28	0.4
5/28/2022	0	0	0.01	0.02	0.04
5/29/2022	0	0	0	0	0
5/30/2022	0	0	0	0	0
5/31/2022	0	0	0	0	0
May Total	0	0			2.20
6/1/2022	750,758	38	0.19	0.82	1.19
6/2/2022	0	0	0	0	0
6/3/2022	0	0	0	0	0
6/4/2022	0	0	0	0	0
6/5/2022	0	0	0	0	0
6/6/2022	0	0	0	0	0
6/7/2022	0	0	0.05	0.18	0.39
6/8/2022	0	0	0.01	0.07	0.01
6/9/2022	0	0	0.05	0.18	0.45
6/10/2022	0	0	0	0	0
6/11/2022	0	0	0	0	0
6/12/2022	0	0	0.04	0.14	0.19
6/13/2022	0	0	0	0	0
6/14/2022	0	0	0	0	0
6/15/2022	0	0	0	0	0
6/16/2022	375,640	27	0.32	0.77	0.93
6/17/2022	0	0	0	0	0
6/18/2022	0	0	0.02	0.06	0.06
6/19/2022	0	0	0	0	0
6/20/2022	0	0	0	0	0
6/21/2022	0	0	0	0	0
6/22/2022	0	0	0	0	0
6/23/2022	0	0	0.01	0.04	0.05
6/24/2022	0	0	0	0	0
6/25/2022	0	0	0	0	0
6/26/2022	0	0	0.07	0.16	0.16
6/27/2022	0	0	0.05	0.07	0.13
6/28/2022	0	0	0	0	0
6/29/2022	0	0	0	0	0
6/30/2022	0	0	0	0	0
June Total	1,126,398	65			3.56
7/1/2022	0	0	0	0	0
7/2/2022	0	0	0.02	0.07	0.11
7/3/2022	0	0	0	0	0
7/4/2022	0	0	0	0	0
7/5/2022	0	0	0.02	0.09	0.11

CSO 080
2022

Date	Discharge Volume	Event Duration (mins)	Metro WWTP Rainfall Data (inches)		
			5-Minute Max	1-Hour Max	Daily Total
7/6/2022	0	0	0.01	0.01	0.01
7/7/2022	0	0	0	0	0
7/8/2022	0	0	0	0	0
7/9/2022	0	0	0	0	0
7/10/2022	0	0	0	0	0
7/11/2022	0	0	0	0	0
7/12/2022	0	0	0.03	0.07	0.07
7/13/2022	0	0	0.36	0.54	0.54
7/14/2022	0	0	0	0	0
7/15/2022	0	0	0	0	0
7/16/2022	0	0	0	0	0
7/17/2022	0	0	0	0	0
7/18/2022	0	0	0.03	0.13	0.49
7/19/2022	0	0	0	0	0
7/20/2022	0	0	0	0	0
7/21/2022	0	0	0.01	0.01	0.03
7/22/2022	0	0	0	0	0
7/23/2022	0	0	0	0	0
7/24/2022	0	0	0.16	0.44	0.89
7/25/2022	0	0	0.13	0.43	0.57
7/26/2022	0	0	0	0	0
7/27/2022	0	0	0	0	0
7/28/2022	0	0	0.01	0.01	0.02
7/29/2022	0	0	0	0	0
7/30/2022	0	0	0	0	0
7/31/2022	0	0	0	0	0
July Total	0	0			2.84
8/1/2022	0	0	0	0	0
8/2/2022	0	0	0	0	0
8/3/2022	0	0	0	0	0
8/4/2022	0	0	0.02	0.03	0.03
8/5/2022	0	0	0.31	0.83	0.83
8/6/2022	0	0	0	0	0
8/7/2022	0	0	0.01	0.01	0.02
8/8/2022	0	0	0.21	0.4	0.54
8/9/2022	0	0	0.04	0.12	0.11
8/10/2022	0	0	0.01	0.01	0.01
8/11/2022	0	0	0	0	0
8/12/2022	0	0	0	0	0
8/13/2022	0	0	0	0	0
8/14/2022	0	0	0	0	0
8/15/2022	0	0	0	0	0
8/16/2022	0	0	0	0	0
8/17/2022	0	0	0.03	0.06	0.06
8/18/2022	0	0	0	0	0
8/19/2022	0	0	0	0	0
8/20/2022	0	0	0.09	0.16	0.16
8/21/2022	110,431	11	0.18	0.72	1.47

CSO 080
2022

Date	Discharge Volume	Event Duration (mins)	Metro WWTP Rainfall Data (inches)		
			5-Minute Max	1-Hour Max	Daily Total
8/22/2022	0	0	0.14	0.36	0.94
8/23/2022	0	0	0.01	0.02	0.04
8/24/2022	0	0	0	0	0
8/25/2022	645		0.08	0.18	0.18
8/26/2022	0	0	0.01	0.01	0.01
8/27/2022	0	0	0	0	0
8/28/2022	0	0	0	0	0
8/29/2022	0	0	0.01	0.01	0.01
8/30/2022	0	0	0.21	0.65	0.9
8/31/2022	0	0	0.01	0.01	0.01
August Total	111,076	11			5.32
9/1/2022	0	0	0.01	0.03	0.03
9/2/2022	0	0	0	0	0
9/3/2022	0	0	0	0	0
9/4/2022	0	0	0.01	0.07	0.08
9/5/2022	0	0	0.01	0.08	0.26
9/6/2022	0	0	0.01	0.01	0.03
9/7/2022	0	0	0.02	0.09	0.31
9/8/2022	0	0	0.01	0.05	0.08
9/9/2022	0	0	0	0	0
9/10/2022	0	0	0	0	0
9/11/2022	0	0	0.01	0.02	0.03
9/12/2022	0	0	0.01	0.01	0.01
9/13/2022	0	0	0.04	0.08	0.17
9/14/2022	0	0	0	0	0
9/15/2022	0	0	0	0	0
9/16/2022	0	0	0	0	0
9/17/2022	0	0	0	0	0
9/18/2022	0	0	0.01	0.01	0.01
9/19/2022	1,799,907	49	0.36	0.76	1.74
9/20/2022	0	0	0.02	0.03	0.04
9/21/2022	0	0	0	0	0
9/22/2022	0	0	0.02	0.15	0.36
9/23/2022	0	0	0.01	0.02	0.03
9/24/2022	0	0	0	0	0
9/25/2022	0	0	0.01	0.06	0.12
9/26/2022	0	0	0.02	0.04	0.09
9/27/2022	0	0	0.07	0.18	0.53
9/28/2022	0	0	0.04	0.14	0.48
9/29/2022	0	0	0	0	0
9/30/2022	0	0	0	0	0
September Total	1,799,907	49			4.40
10/1/2022	0	0	0	0	0
10/2/2022	0	0	0	0	0
10/3/2022	0	0	0	0	0
10/4/2022	0	0	0	0	0
10/5/2022	0	0	0	0	0
10/6/2022	0	0	0	0	0

CSO 080
2022

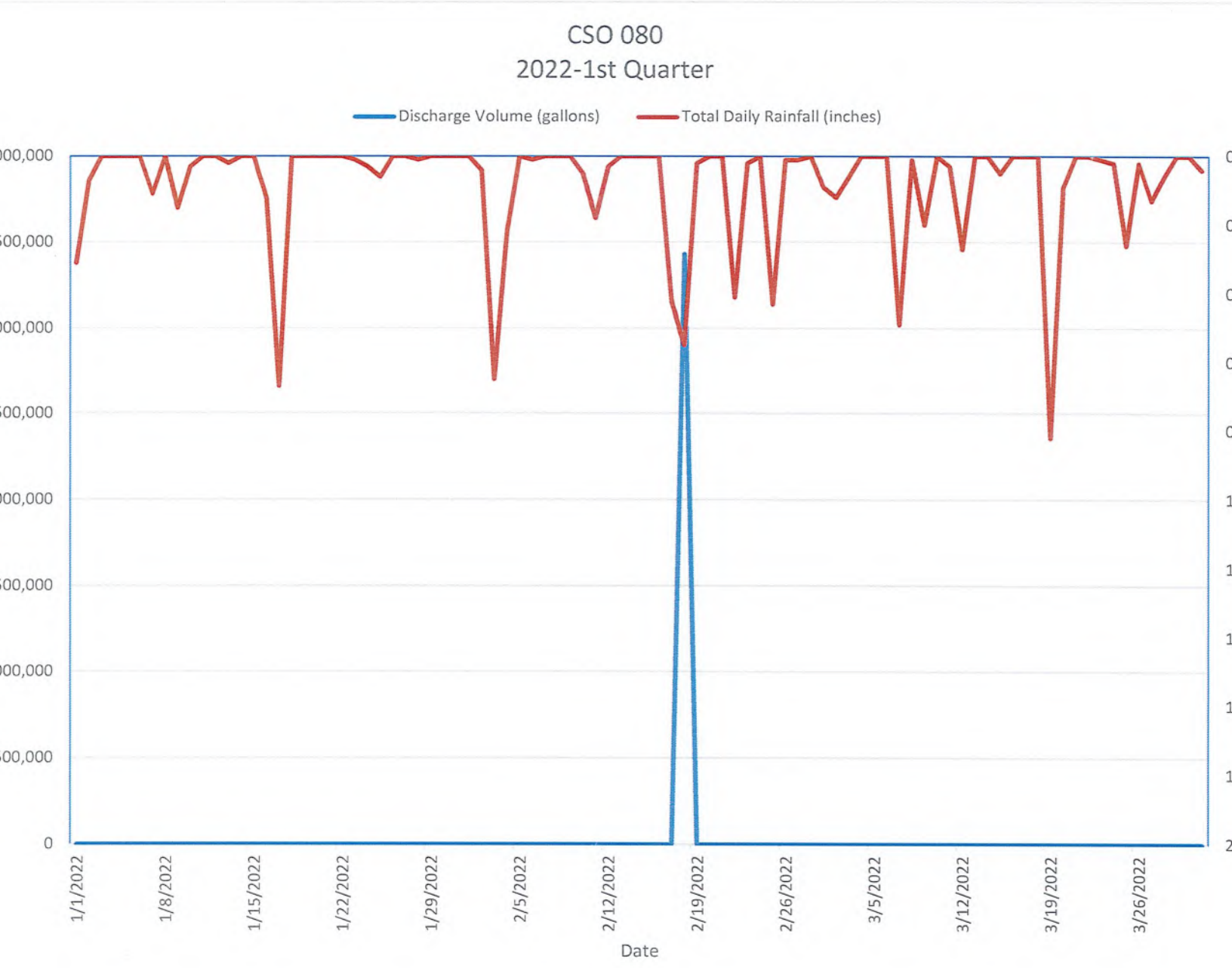
Date	Discharge Volume	Event Duration (mins)	Metro WWTP Rainfall Data (inches)		
			5-Minute Max	1-Hour Max	Daily Total
10/7/2022	0	0	0.01	0.01	0.01
10/8/2022	0	0	0.01	0.04	0.12
10/9/2022	0	0	0	0	0
10/10/2022	0	0	0.01	0.02	0.02
10/11/2022	0	0	0	0	0
10/12/2022	0	0	0	0	0
10/13/2022	0	0	0.07	0.25	0.63
10/14/2022	0	0	0.01	0.02	0.01
10/15/2022	0	0	0	0	0
10/16/2022	0	0	0	0	0
10/17/2022	0	0	0.01	0.06	0.09
10/18/2022	0	0	0.02	0.04	0.07
10/19/2022	0	0	0.01	0.01	0.03
10/20/2022	0	0	0.01	0.02	0.05
10/21/2022	0	0	0	0	0
10/22/2022	0	0	0	0	0
10/23/2022	0	0	0	0	0
10/24/2022	0	0	0	0	0
10/25/2022	0	0	0	0	0
10/26/2022	0	0	0.01	0.04	0.04
10/27/2022	0	0	0.01	0.01	0.01
10/28/2022	0	0	0	0	0
10/29/2022	0	0	0	0	0
10/30/2022	0	0	0	0	0
10/31/2022	0	0	0	0	0
October Total	0	0			1.08
11/1/2022	0	0	0	0	0
11/2/2022	0	0	0	0	0
11/3/2022	0	0	0	0	0
11/4/2022	0	0	0	0	0
11/5/2022	0	0	0	0	0
11/6/2022	0	0	0.03	0.14	0.2
11/7/2022	0	0	0	0	0
11/8/2022	0	0	0	0	0
11/9/2022	0	0	0	0	0
11/10/2022	0	0	0	0	0
11/11/2022	0	0	0.09	0.41	1.17
11/12/2022	4,789,913	175	0.07	0.69	1.43
11/13/2022	0	0	0.01	0.07	0.18
11/14/2022	0	0	0	0.01	0
11/15/2022	0	0	0.02	0.07	0.1
11/16/2022	0	0	0.02	0.04	0.22
11/17/2022	0	0	0	0	0
11/18/2022	0	0	0.01	0.01	0.01
11/19/2022	0	0	0	0	0
11/20/2022	0	0	0	0	0
11/21/2022	0	0	0	0	0
11/22/2022	0	0	0	0	0

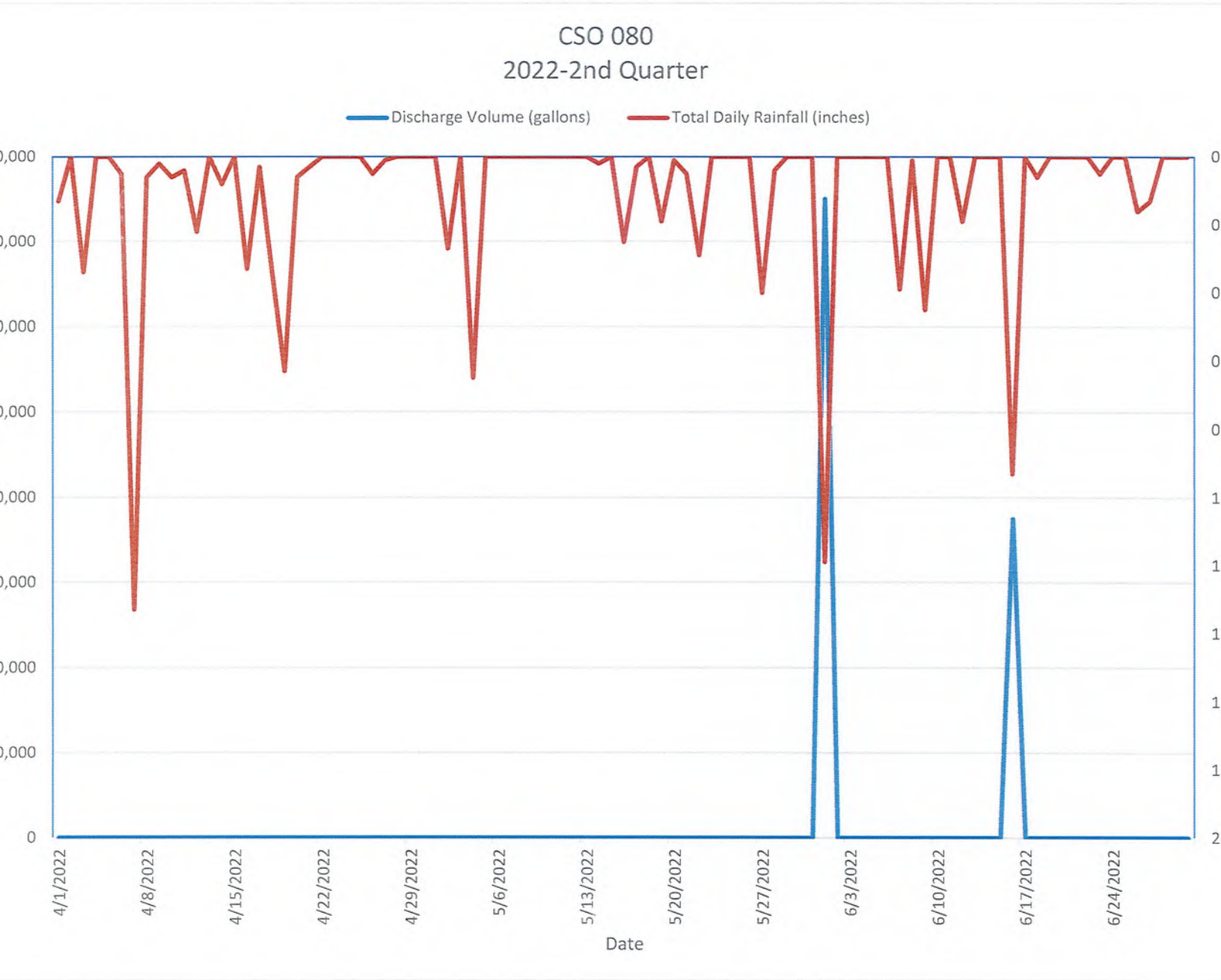
CSO 080
2022

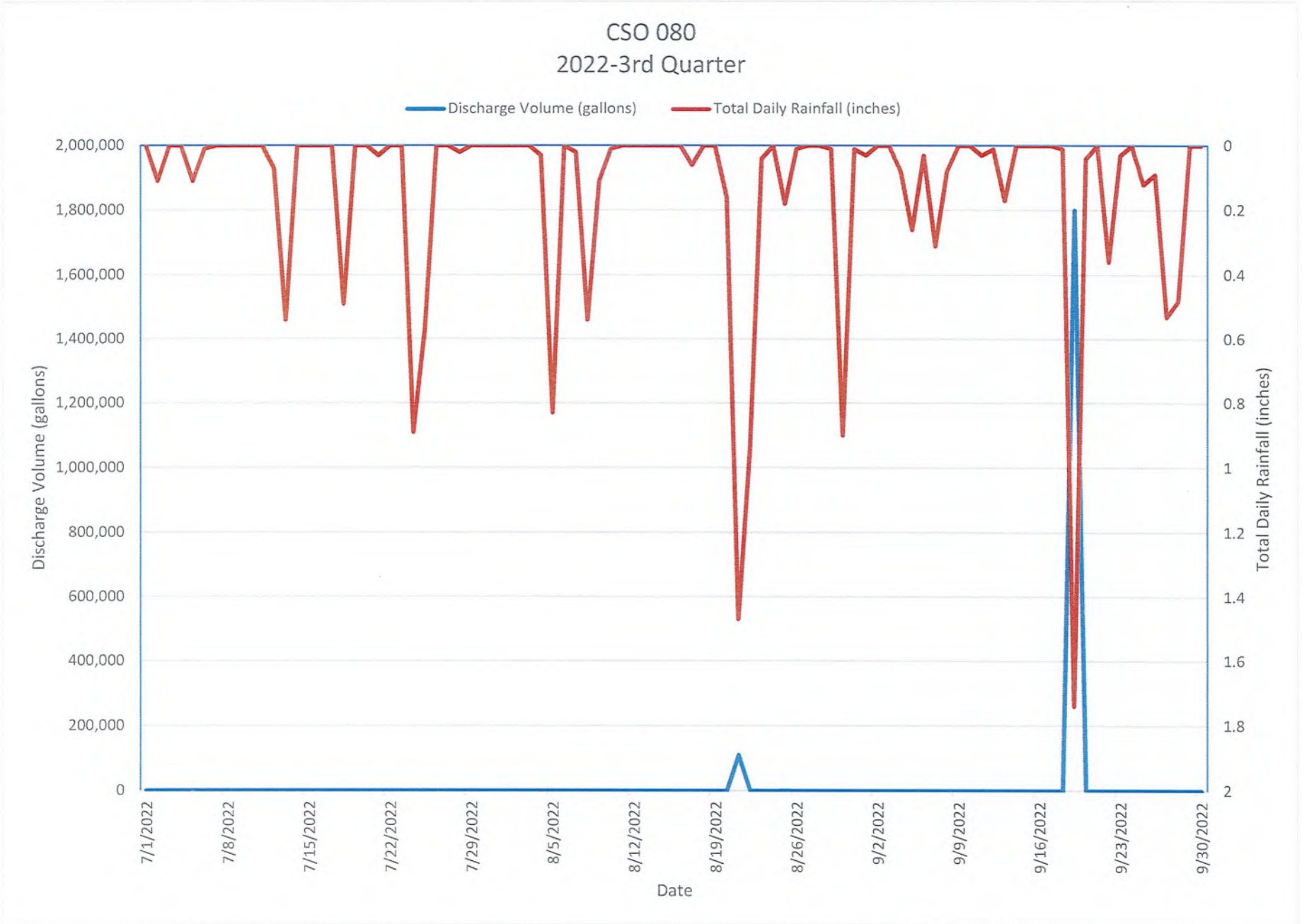
Date	Discharge Volume	Event Duration (mins)	Metro WWTP Rainfall Data (inches)		
			5-Minute Max	1-Hour Max	Daily Total
11/23/2022	0	0	0	0	0
11/24/2022	0	0	0	0	0
11/25/2022	0	0	0.02	0.08	0.15
11/26/2022	0	0	0.01	0.01	0.01
11/27/2022	0	0	0.02	0.1	0.37
11/28/2022	0	0	0.01	0.03	0.05
11/29/2022	0	0	0	0	0
11/30/2022	0	0	0.05	0.14	0.31
November Total	4,789,913	175			4.20
12/1/2022	0	0	0	0	0
12/2/2022	0	0	0	0	0
12/3/2022	0	0	0.02	0.12	0.31
12/4/2022	0	0	0	0	0
12/5/2022	0	0	0	0	0
12/6/2022	0	0	0.02	0.17	0.31
12/7/2022	0	0	0.01	0.03	0.11
12/8/2022	0	0	0.01	0.06	0.17
12/9/2022	0	0	0	0	0
12/10/2022	0	0	0	0	0
12/11/2022	0	0	0.02	0.06	0.24
12/12/2022	0	0	0	0	0
12/13/2022	0	0	0	0	0
12/14/2022	0	0	0	0	0
12/15/2022	0	0	0.01	0.04	0.13
12/16/2022	0	0	0.01	0.08	0.9
12/17/2022	0	0	0.01	0.02	0.05
12/18/2022	0	0	0	0	0
12/19/2022	0	0	0.01	0.02	0.03
12/20/2022	0	0	0	0	0
12/21/2022	0	0	0	0	0
12/22/2022	0	0	0.02	0.12	0.37
12/23/2022	0	0	0.05	0.1	0.46
12/24/2022	0	0	0.01	0.01	0.02
12/25/2022	0	0	0	0	0
12/26/2022	0	0	0	0	0
12/27/2022	0	0	0	0	0
12/28/2022	0	0	0	0	0
12/29/2022	0	0	0	0	0
12/30/2022	0	0	0	0	0
12/31/2022	0	0	0.01	0.05	0.09
December Total	0	0			3.19

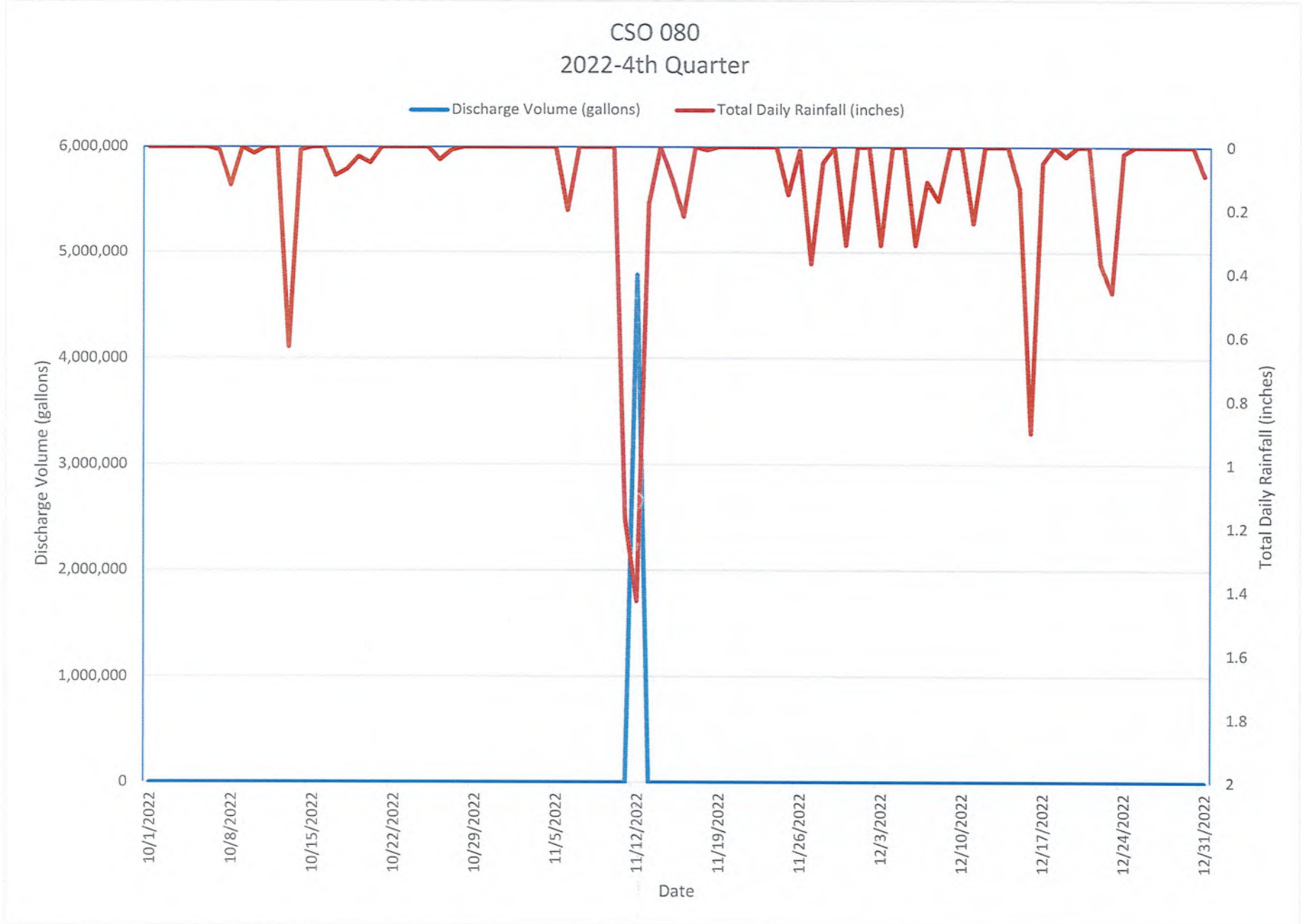
On 2/18/22, flowmeter data was impacted by high creek levels.
On 11/12/22, flowmeter data impacted by high creek levels.

On 8/25-8/26/22 level transducer controlling gate #1 "failed" resulting in gate #1 opening.


CSO 080
2022-1st Quarter
Discharge Volume (gallons)
Total Daily Rainfall (inches)
000,000
500,000
000,000
500,000
000,000
500,000
000,000
500,000
0
1/1/2022
1/8/2022
1/15/2022
1/22/2022
1/29/2022
2/5/2022
2/12/2022
2/19/2022
2/26/2022
3/5/2022
3/12/2022
3/19/2022
3/26/2022
Date


CSO 080
2022-2nd Quarter
Discharge Volume (gallons)
Total Daily Rainfall (inches)
,000
,000
,000
,000
,000
,000
,000
0
0
0
0
0
1
1
1
1
2
4/1/2022
4/8/2022
4/15/2022
4/22/2022
4/29/2022
5/6/2022
5/13/2022
5/20/2022
5/27/2022
6/3/2022
6/10/2022
6/17/2022
6/24/2022
Date


CSO 080
2022-3rd Quarter
Discharge Volume (gallons)
Total Daily Rainfall (inches)
2,000,000
1,800,000
1,600,000
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
0
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8
2
7/1/2022
7/8/2022
7/15/2022
7/22/2022
7/29/2022
8/5/2022
8/12/2022
8/19/2022
8/26/2022
9/2/2022
9/9/2022
9/16/2022
9/23/2022
9/30/2022
Date


CSO 080
2022-4th Quarter
Discharge Volume (gallons)
Total Daily Rainfall (inches)
6,000,000
5,000,000
4,000,000
3,000,000
2,000,000
1,000,000
0
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8
2
10/1/2022
10/8/2022
10/15/2022
10/22/2022
10/29/2022
11/5/2022
11/12/2022
11/19/2022
11/26/2022
12/3/2022
12/10/2022
12/17/2022
12/24/2022
12/31/2022
Date

Appendix B

Appendix B is provided electronically on the enclosed flash drive.