

JOHN COOPER
MAYOR



METROPOLITAN GOVERNMENT OF NASHVILLE AND DAVIDSON COUNTY

DEPARTMENT OF WATER AND SEWERAGE SERVICES
ENGINEERING DIVISION
1600 SECOND AVENUE NORTH
NASHVILLE, TENNESSEE 37208

January 27, 2021

Chief, Environmental Enforcement Section
Environmental and Natural Resources Division
U.S. Department of Justice
Post Office Box 7611
Washington, D.C. 20044-7611

Director, Enforcement and Compliance Assurance Division
U.S. Environmental Protection Agency, Region 4
Atlanta Federal Center
61 Forsyth Street, S.W.
Atlanta, Georgia 30303

United States Attorney
Middle District of Tennessee
110 Ninth Avenue, South, Suite A961
Nashville, TN 37203

Mr. Wilson Buntin
Assistant Attorney General
Office of the Tennessee Attorney General
Environmental Division
P.O. Box 20207
Nashville, TN 37202

Mr. Patrick Parker
Assistant General Counsel
Tennessee Department of Environment and Conservation
312 Rosa Parks Avenue
Nashville, TN 37243

Re: DOJ Case No. 90-5-1-1-09000
Submittal of Annual Report and Quarterly Progress Report

Dear Colleagues,

In accordance with the provisions of the Consent Decree, Section XIX (Reporting Requirements), Subsection A, herewith we are transmitting the Annual Report for 2020 and the Quarterly Progress Report which covers the period from October 1 through December 31, 2020.

A copy of each report is concurrently being placed in the Public Document Repository (PDR).

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 gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering such 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.

If you have any questions concerning this report, do not hesitate to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Ron C. Taylor". The signature is written in a cursive style with a large initial "R" and "T".

Ron C. Taylor, P.E.

Clean Water Nashville Overflow Abatement Program Director

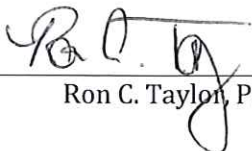
cc: Mr. Scott A. Potter, P.E., Director
Mr. David Tucker, Deputy Director
Mr. Cyrus Q. Toosi, P.E., Assistant Director / Chief Engineer, Engineering
Mr. Thomas G. Cross, Associate Director, Metropolitan Department of Law

Clean Water Nashville Overflow Abatement Program

**Metropolitan Government of Nashville and Davidson County
Department of Water and Sewerage Services**

CONSENT DECREE 2020 ANNUAL REPORT

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 gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering such 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.



Ron C. Taylor, P.E., Program Director

1/22/21

Date

Table of Contents

Consent Decree 2020 Annual Report.....	1
1. CMOM Programs.....	1
2. Project Updates.....	2
3. Sanitary Sewer Overflow Trends	6
4. Combined Sewer Overflow Trends	10

List of Figures

Figure 1 – SSO Events by Cause	7
Figure 2 – Monthly SSO Volumes	8
Figure 3 – Monthly SSO Durations.....	9

List of Tables

Table 1 – CMOM Reporting Items, Benchmarks, and 2020 Summary	2
Table 2 – Design/Construction Project Updates	4

Consent Decree 2020 Annual Report

On March 12, 2009, the Metropolitan Government of Nashville and Davidson County, Tennessee (Metro), entered into a Consent Decree with the United States and the State of Tennessee. As required by Section XIX.B. of the Consent Decree, Metro has prepared this *Annual Report* covering the period from January 1 through December 31, 2020, which includes the following information:

1. Summary of the Capacity, Management, Operation, and Maintenance (CMOM) programs implemented
2. List of projects required by the Consent Decree
3. Trend analysis of Sanitary Sewer Overflows (SSOs) for 2019 and 2020
4. Trend analysis of dry weather Combined Sewer Overflows (CSOs) for 2019 and 2020

Each of these items is discussed in the following sections.

1. CMOM Programs

As described in the Consent Decree, in addition to items identified through Metro's CMOM Self-Assessment, the following programs are elements of Metro's CMOM program:

- *Spill and Overflow Response Plan* (Section VII.C.2) – MWS continues to operate under the current *Spill and Overflow Response Plan* (SORP). A review of the SORP is conducted annually with any proposed changes submitted to EPA prior to June 1 each year. No changes were requested in 2020.
- *Inter-jurisdictional Agreement Program* (Section VII.C.3) – All required inter-jurisdictional agreements are in place, and Metro will continue to operate under these agreements, including monitoring peak flows received.
- *Capacity Assurance Plan* (Section VII.C.4) – The *Capacity Assurance Plan* will continue to be applied as a tracking/approval tool for new development/flow in the sanitary sewer system (SSS).
- *Pump Station Operation Plan for Power Outages* (Section VII.C.5) – All projects identified in the *Pump Station Operation Plan for Power Outages* were completed prior to 2020.

In addition to these programs, Metro's *CMOM Self-Assessment Report* established multiple recommendations and performance measures that Metro continues to track. In 2019, Metro conducted a review of their CMOM requirements to determine what aspects of their CMOM should be updated or augmented to better meet the goal of reducing overflows. That effort established the reporting items listed in **Table 1** which are used to illustrate Metro's on-going CMOM implementation.

Table 1 – CMOM Reporting Items, Benchmarks, and 2020 Summary

Reporting Item	Annual Benchmark	2020 Results
Monthly summary of overflows, including cause, volume, and duration	Tracking only	Completed
Review SORP and update as needed	1/year	Completed
Conduct Quarterly Compliance Meetings	4/year	4
Pump station capacity evaluations / drawdown testing	100%/year	96% ¹
Review pump station procedures and update as needed	1/year	Completed
Inspection of ARVs	100%/year	100%
Number of force mains cleaned	Tracking only	2
Length of gravity sewer inspected	10%/year	98.1 miles
Length of gravity sewer cleaned	Tracking only	40.1 miles
Number of manholes inspected	Tracking only	6,946 ²
Length of stream walks completed	Tracking only	20.25 miles
Review gravity sewer procedures and update as needed	1/year	Completed
Inspection of permitted food service establishments with grease control equipment	75%/year	63% ³
Number of new permits for food service establishments	Tracking only	1,287
Volume of FOG removed from the system	Tracking only	7.27 million gallons ³
Number of FOG-related notifications mailed, distributed, or called out to customers	Tracking only	3,535
Review FOG control procedures and update as needed	1/year	Completed
Number of sewer point repairs completed	Tracking only	91
Length of pipe replaced or new pipe installed (excluding extension of service)	Tracking only	56 feet
Length of sewer rehabilitated such as via CIPP lining	Tracking only	0.04 miles
Number of manholes rehabilitated	Tracking only	361
Number of service connections replaced or rehabilitated	Tracking only	309
Review of <i>Capacity Assurance Plan</i> and update as needed	1/year	Completed

¹ Drawdown tests could not be completed at five stations due to the station configuration or inadequate flow rates.

² Manhole inspection count does not include incidental observations of manhole condition such as during sewer cleaning.

³ COVID-19 impacts resulted in decreased FSE inspection rates relative to typical years. Lower FOG generation rates during COVID-19 also resulted in a reduced volume of FOG removed in 2020.

2. Project Updates

Approval of the *Corrective Action Plan / Engineering Report* (CAP/ER) was granted by the U.S. Environmental Protection Agency (EPA) on August 10, 2017, with the Tennessee Department of Environment and Conservation (TDEC) copied on the approval. Since submittal of the CAP/ER in 2011, information from additional flow monitoring data collection, constructability reviews, and hydraulic analysis has resulted in adjustments to several CAP/ER projects, as well as the identification of additional projects to remediate SSOs. A summary of those changes was presented to EPA and TDEC in the *Addendum to the CAP/ER*, dated September 27, 2017. Through ongoing efforts to maintain the system, Metro identified several overflow locations, outside of those identified in the CAP/ER, that warrant additional field investigations and/or improvements. As requested by TDEC in a letter dated July 15, 2019, Metro prepared *Addendum #2 to the CAP/ER*, which was submitted on August 30, 2019.

That Addendum describes those overflow locations, summarizes actions taken, and presents Metro's plan for identifying and addressing conditions causing those overflows.

Metro submitted the *Long Term Control Plan (LTCP)* to EPA and TDEC on September 11, 2011. On June 18, 2018, Metro presented to EPA and TDEC an *Addendum to the LTCP* which summarizes the updates and modifications to projects described in the LTCP since its submittal. In a February 11, 2019, letter, EPA provided review comments to Metro on the LTCP and *Addendum to the LTCP*. On March 6, 2019, Metro provided a letter in response to those comments.

On February 18, 2020, Metro met with representatives from EPA, TDEC, the U.S. Department of Justice, and the Tennessee Attorney General's office to discuss compliance with the Consent Decree. A follow-up conference call with all parties was held on April 4, 2020, with informal clarifications between parties continuing over the following months. On July 24, 2020, Metro submitted the *Addendum #2 to the LTCP* clarifying and updating the proposed CSO abatement projects.

On December 7, 2020, Metro received a letter from EPA providing partial conditional approval to the LTCP and addenda. The letter approves the proposed control measures at the Benedict & Crutcher, Boscobel, Driftwood, and Schrader CSOs and approves the Central Wastewater Treatment Plant Capacity and CSO Reduction project. The letter requires that Metro, within four years, submit a revised LTCP that describes the control measures designed to bring the Kerrigan and Washington CSOs into compliance with Tennessee's water quality standards at the time of submittal. (TDEC is currently reviewing the existing water quality standards.) The letter was agreed to and countersigned by Metro on December 8, 2020.

The December 2020 letter also expands the Consent Decree's list of sanitary sewer overflows to be addressed (Appendix A of the Consent Decree). Additionally, Metro is required to submit an update to the CAP/ER by June 8, 2021, identifying corrective actions that have been or will be taken to address those overflows.

Due to the ongoing potential impacts of the COVID-19 epidemic, timelines for some work may require schedule adjustments. In an April 1, 2020, letter, Metro notified EPA and TDEC of the potential need for time extensions due to the force majeure event of the COVID-19 epidemic. On June 26, 2020, Metro received a response from EPA which indicated that Metro, TDEC, and EPA will need additional communication as more information about the potential impacts of the COVID-19 epidemic on Metro's Consent Decree compliance are known.

Milestone dates for projects and activities associated with the CAP/ER and the LTCP achieved during 2020 and those anticipated to occur during 2021 are shown in **Table 2**.

Table 2 – Design/Construction Project Updates

Project Number	Project Name	Design Start Date	Design End Date ¹	Construction Start Date	Construction Substantial Completion
93-SC-34T	Whites Creek Pump Station Improvements	Nov-09	Mar-11	Feb-12	Nov-13
11-SG-0078	2011 Collection System Structural Defect Repair	Jun-11	Sep-12	Feb-13	Aug-13
10-SG-0083	Lakewood Rehabilitation - Area 1 - Sewer	Jul-11	Aug-13	Jan-14	Mar-16
11-SC-0067	Driftwood Equalization Facility	Aug-11	Apr-12	Jul-12	Jun-13
99-SC-009L	Dodson Chapel Equalization Facility	Sep-11	Jan-12	May-12	Nov-13
11-SC-0101	West Park Equalization Facility Phase II	May-12	Dec-14	Apr-15	Aug-18
11-SC-0102	Mill Creek / Opryland Equalization Facility - Phase II	Aug-12	May-13	Jan-14	May-15
11-SC-0106	Neely's Bend Rehabilitation	Sep-12	Jun-13	Dec-13	Dec-14
11-SC-105A	Shelby Park Rehabilitation - Area 1 - Virginia Avenue	Oct-12	Jun-13	Jan-14	Apr-15
11-SC-0104	Dodson Chapel Pipe Improvements	Oct-12	Oct-14	Jan-15	Nov-15
11-SC-0148	Joelton Rehabilitation	Jan-13	Jun-13	Oct-13	Jun-14
11-SC-103A	Cowan Riverside Rehabilitation - Area 1 - Jones Avenue	Feb-13	Sep-13	Jan-14	Apr-15
11-SC-0121	Apex Sewer Corrections	Mar-13	Oct-13	Feb-14	Jul-14
13-SC-0001	Annual Rehabilitation FY2013	Jun-13	Jun-14	Oct-14	Jan-16
11-SC-105B	Shelby Park Rehabilitation - Area 2 - Norvel Avenue	Jul-13	Jan-14	May-14	Oct-15
11-SC-103B	Cowan Riverside Rehabilitation - Area 2 - Dickerson Pike	Jul-13	Mar-14	Jul-14	Sep-15
11-SC-144C	Westchester Drive Rehabilitation	Jul-13	Mar-15	Jul-15	Nov-15
11-SC-144A	Brick Church Pike Pipe Improvements	Jul-13	Apr-16	Aug-16	Feb-18
11-SC-147A	Highway 100 / Tyne Boulevard - Trimble Rehabilitation	Sep-13	Apr-14	Aug-14	Sep-15
11-SC-105C	Shelby Park Rehabilitation - Area 3 - Greenland Avenue	Dec-13	Aug-14	Feb-15	Apr-16
11-SC-0143	Davidson and Brook Hollow Sewer Improvements	Apr-14	Jun-15	Oct-15	Aug-16
14-SC-0041	Annual Rehabilitation FY2014 - Whites Creek Trunk	Oct-14	Aug-15	Jan-16	Nov-17
11-SC-105D	Shelby Park Rehabilitation - Area 4 - Brush Hill Road	Oct-14	Apr-15	Jul-15	Jun-16
11-SC-103C	Cowan Riverside Rehabilitation - Area 3 - West Trinity Lane	Nov-14	May-15	Oct-15	Sep-16
11-SC-103D	Cowan Riverside Rehabilitation - Area 4 - Pages Branch	Jan-15	Feb-16	Aug-16	Dec-17
11-SC-120A	Smith Springs Rehabilitation - Area 1 - Priest Lake Meadows	Feb-15	Oct-15	Feb-16	Jan-17
11-SC-135A	28th Avenue Rehabilitation - Area 1 - Clifton Avenue	Feb-15	Dec-15	Apr-16	Mar-17
11-SC-0111	Davidson Branch Pump Station and Equalization Facility	May-15	Dec-17	Oct-20	Oct-22
11-SC-0140	Gibson Creek Rehabilitation - Area 1 - Dupont Avenue	Jul-15	Apr-16	Sep-16	Oct-17
11-SC-0110	Ewing Creek – Brick Church Pike Equalization Facility	Aug-15	Dec-16	May-17	Dec-18

Project Number	Project Name	Design Start Date	Design End Date ¹	Construction Start Date	Construction Substantial Completion
14-SC-153A	Central WWTP – Headworks ²	Sep-15	May-20	Sep-20	Nov-23
14-SC-153B	Central WWTP – Balance of Plant ²	Sep-15	Jun-19	Jul-20	Aug-23
11-SC-0117	Langford Farms - Madison Heights Rehabilitation	Feb-16	Sep-16	Feb-17	Dec-17
11-SC-120B	Smith Springs Rehabilitation - Area 2 - Castlegate	Feb-16	Aug-16	Jan-17	Jun-18
16-SC-0009	Annual Rehabilitation FY2016 - South Hurricane Creek	Mar-16	Dec-16	May-17	Dec-17
11-SC-105E	Shelby Park Rehabilitation - Area 5 - Cooper Lane	Jun-16	Mar-17	Aug-17	Nov-18
11-SC-0116	Hurricane Creek Pipe Improvements	Jul-16	Mar-21	Oct-21	Jun-23
11-SC-0139	Gibson Creek Equalization Facility	Sep-16	Dec-20	Jun-21	Nov-22
11-SC-108A	Loves Branch Rehabilitation	Oct-16	Jun-17	Dec-17	Feb-19
11-SC-141A	Hidden Acres Rehabilitation	Oct-16	Aug-17	Apr-18	Nov-18
11-SC-109A	Vandiver Rehabilitation	Dec-16	Aug-17	Mar-18	Nov-19
11-SC-105F	Shelby Park Rehabilitation - Area 6 - Shelby Trunk	Feb-17	Oct-17	May-21	Aug-22
17-SC-017A	Annual Rehabilitation FY2017 - Dry Creek	Mar-17	Sep-17	Jun-21	Jun-22
11-SC-120B	Smith Springs Rehabilitation - Area 3 - Harbour Town	Jun-17	Nov-17	Dec-21	Dec-22
11-SC-017B	Annual Rehabilitation FY2017 - Shepherd Hills	Aug-17	Oct-17	Aug-21	Jun-22
11-SC-118A	Sevenmile Creek Rehabilitation - Area 1	Jul-18	Mar-19	Oct-21	Dec-22
11-SC-135B	28th Avenue Rehabilitation - Area 2 - Batavia Street	May-20	Jan-21	Dec-21	Dec-22
11-SC-145A	Cleeces Ferry Rehabilitation - Area 1 - Summerly Drive	Aug-20	Feb-21	Mar-22	Mar-23
Not Established	Annual Rehabilitation FY2020	Jan-21	Jul-21	Mar-22	May-23
11-SC-0151	Mill Creek Trunk Improvements and Equalization Facility	Feb-21	Jan-25	May-25	Oct-28
11-SC-0153	Lakewood Rehabilitation - Area 2 - Pitts Avenue	Feb-21	Aug-21	Jul-22	Sep-23
11-SC-0150	Bandywood - Green Hills Rehabilitation (SU03A)	Apr-21	Oct-21	Apr-22	Jun-23
11-SC-118B	Mill Creek Rehabilitation - Area 2	Jun-21	Dec-21	Jul-22	Sep-23
11-SC-0146	Henry Ford Drive Pipe Improvements	Jul-21	Apr-23	Sep-23	Nov-24
Not Established	Annual Rehabilitation FY2021	Sep-21	Mar-22	Oct-22	Dec-23
11-SC-135C	28th Avenue Rehabilitation - Area 3	Oct-21	Apr-22	Nov-22	Jan-24

Notes:

- Design phase shown includes activities associated with permitting and easement acquisition.
- Metro is completing the Central WWTP Capacity Improvements and CSO Reduction project via a Construction Manager at Risk. Headworks and Balance of Plant are the two largest construction packages.

3. Sanitary Sewer Overflow Trends

The trend analysis for SSOs includes three graphs, each with the average rainfall from all the Metro rain gauges included. **Figure 1** shows monthly SSO events in the system as a result of the following causes:

- Excessive flow
- Blockage
- Repairs/Mechanical Problems
- Power Outage
- Rainfall Induced
- Other

The following months each experienced more than 40 SSO events: February 2019, December 2019, February 2020, and March 2020. In each of the months experiencing more than 40 events, the majority of SSOs were the result of significant rainfall events. The majority of non-rainfall induced SSOs were caused by blockages from roots, grease, and debris.

Figure 2 shows monthly SSO volumes within the system from 2019 through 2020 reported in million gallons (MG), while **Figure 3** shows monthly SSO durations within the system from 2019 through 2020. The durations shown are a summation of the total amount of time overflows were occurring within the system at all overflow locations. This data is provided in the units of overflow equivalent hours, meaning that, for any month, the total number of hours for the duration of overflows could exceed the actual number of hours in a given month. For instance, if a rainfall event results in three overflows that occur concurrently for two hours each, the overflow duration for that day is six overflow equivalent hours.

The data in **Figures 2** and **3** indicates large overflow volumes and durations during months with significant rainfall events. The average rainfall, as measured within the Metro system, is included on both graphs to show the relationship between rainfall and overflow events

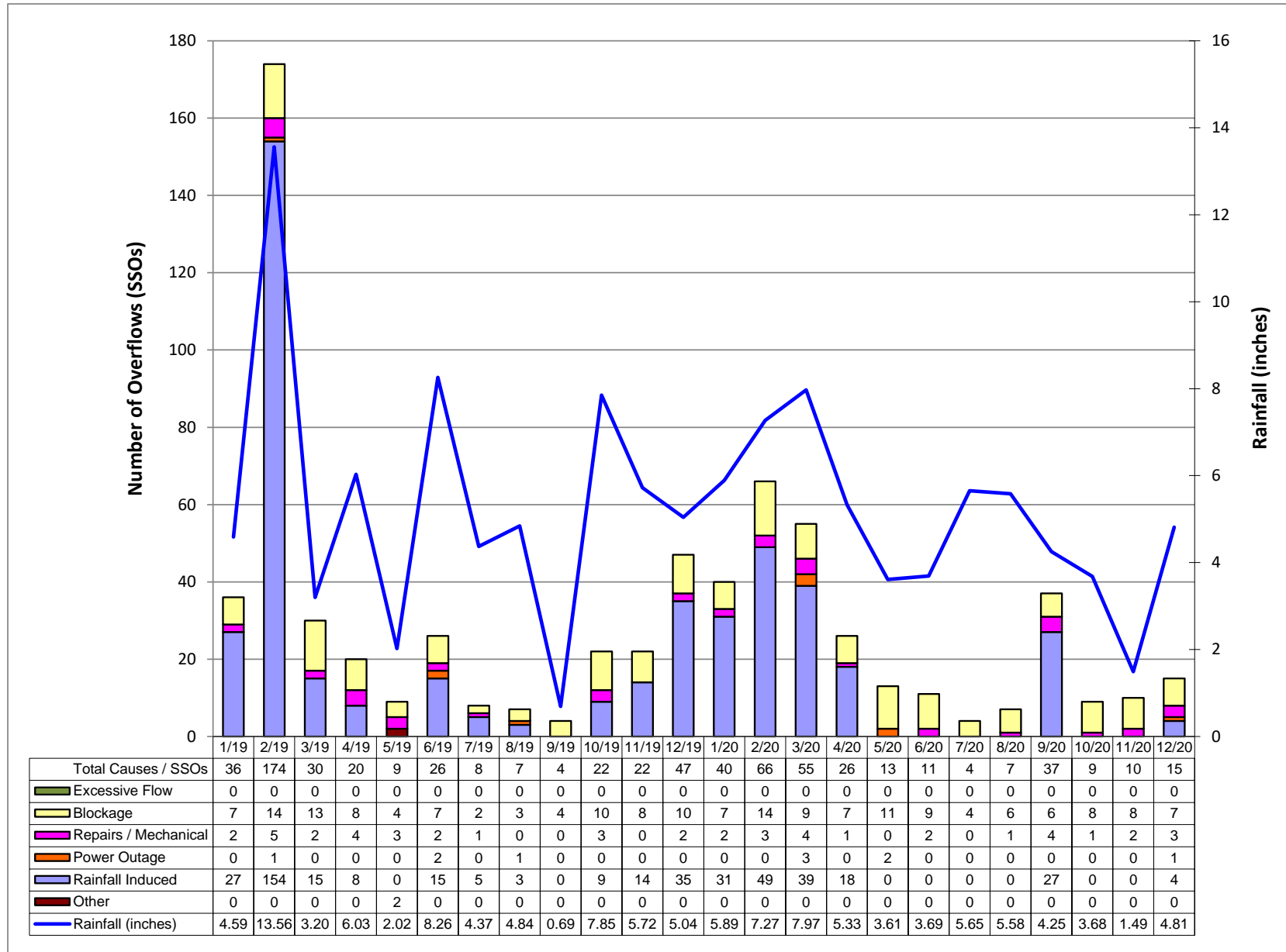


Figure 1 – SSO Events by Cause

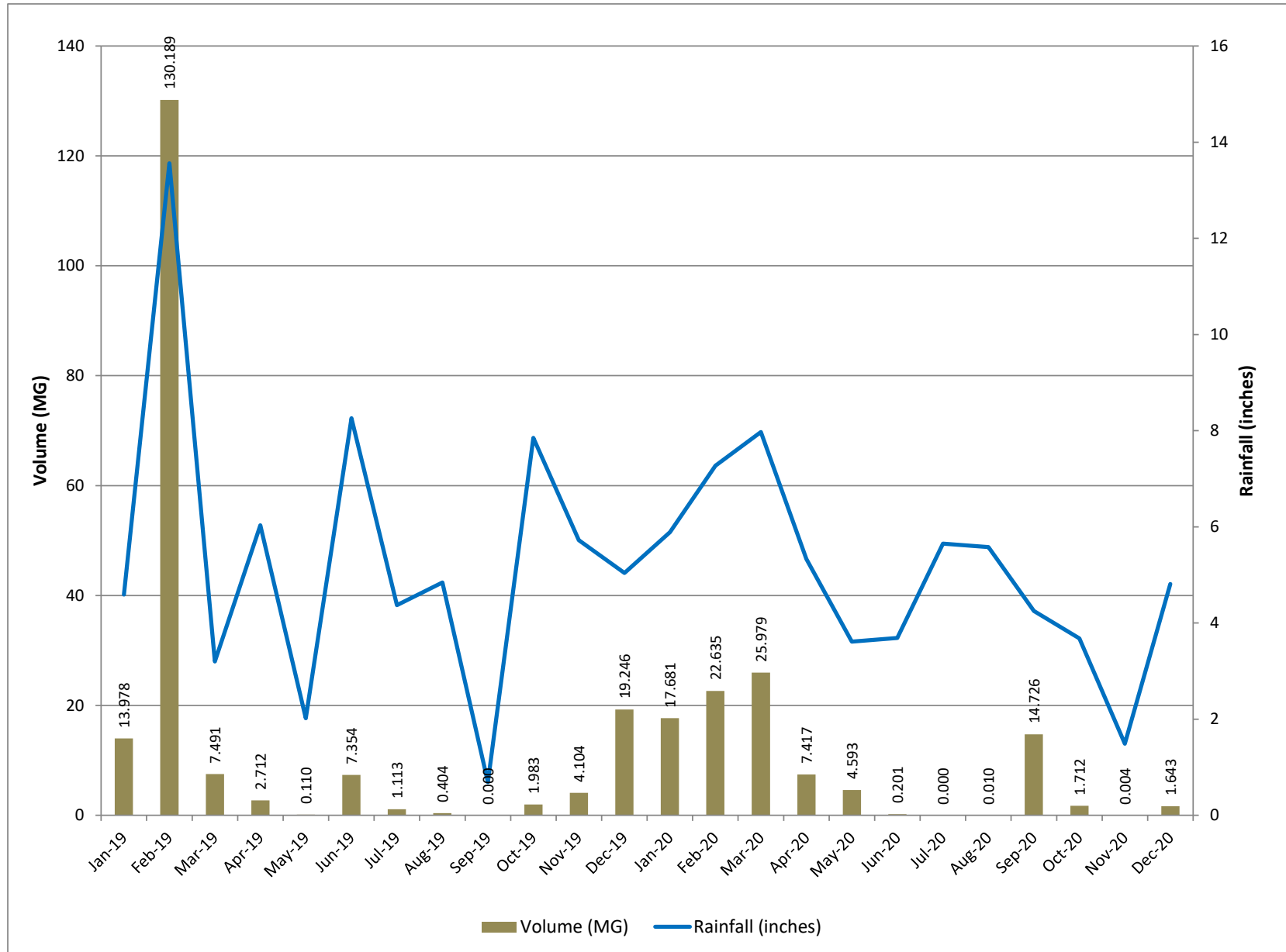


Figure 2 – Monthly SSO Volumes

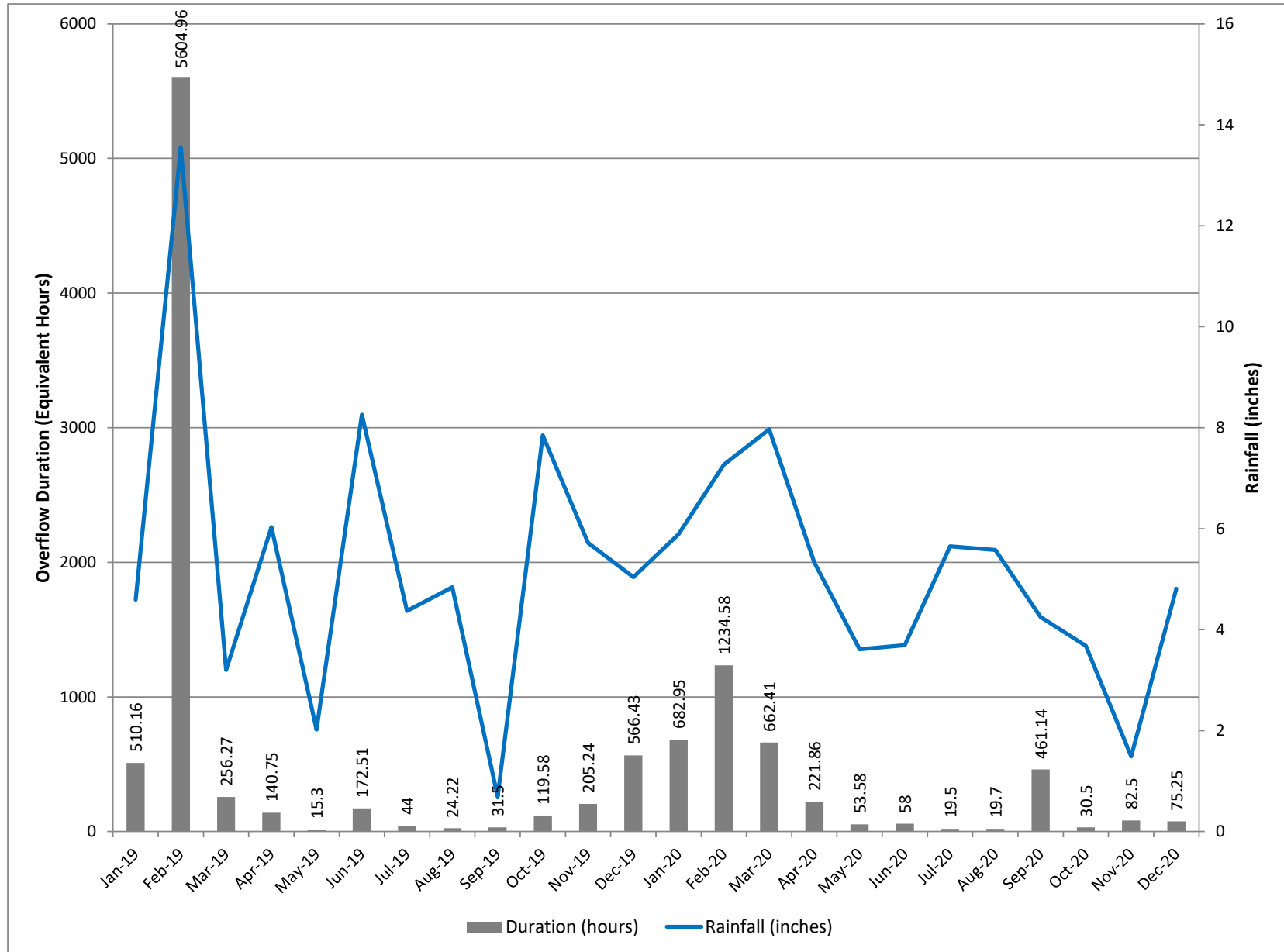


Figure 3 – Monthly SSO Durations

4. Combined Sewer Overflow Trends

There is not a trend analysis in this report for the dry weather combined sewer overflows (CSOs). Two dry-weather CSOs occurred in August 2019 during a partial shutdown of the Central Wastewater Treatment Plant. Additional information on those events is presented in the *Quarterly Progress Report* for the 3rd Quarter of 2019. No dry weather CSOs occurred in 2020.