



# City of Chattanooga

Mayor Andy Berke

February 25, 2014

VIA CERTIFIED MAIL

Ms. Sara Schiff-Janovitz  
Environmental Engineer  
Clean Water Enforcement Branch  
US EPA-Region 4  
61 Forsyth Street, SW  
Atlanta, GA 30303

**Re: *United States of America et. al. v. City of Chattanooga, No. 1:12-cv-00245*  
Annual Report No. 2 – April, 2014 to December, 2014**

Dear Ms. Schiff-Janovitz:

On behalf of the City of Chattanooga, Tennessee ("City"), and in accordance with the Consent Decree entered by the United States District Court for the Eastern District of Tennessee (Southern Division), on April 24, 2013, in the case styled the United States of America et. al. v. City of Chattanooga, No. 1:12-cv-00245 ("Consent Decree"), we are submitting to both the Environmental Protection Agency ("EPA") and the Tennessee Department of Environment and Conservation ("TDEC") the second annual report required pursuant to paragraph 40 of the Consent Decree. This report is also being submitted in accordance with the letter from Denise Diaz, dated September 16, 2013, establishing the dates for reporting under the Consent Decree.

*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.*

February 25, 2015  
Ms. Sara Schiff-Janovitz  
Page Two

Please let me know if you have any questions regarding our submittal.

Sincerely,

A handwritten signature in blue ink that reads "Michael C. Patrick". The signature is written in a cursive, flowing style.

Michael C. Patrick, P.E.  
Director, Waste Resources Division

Enclosure

cc: Karl Fingerhood, Esq., US DOJ  
Chief, Environmental Enforcement Section, US DOJ  
Chief, Clean Water Enforcement Branch, US EPA Region 4  
Bill Bush, Esq., US EPA  
Phillip Hilliard, Office of the Attorney General  
Enforcement Coordinator, Water Pollution Control, TDEC  
Stephanie Durman Matheny, Esq., TCWN  
Adam Sowatzka, Esq., King & Spalding  
Mike Marino, P.E., Jacobs



# Annual Report No. 2

**January 1 - December 31, 2014**

*Prepared for*

**Environmental Protection Agency and  
Tennessee Department of Environment and  
Conservation**

City of Chattanooga  
Waste Resources Division  
Consent Decree Program  
Case No. 1:12-cv-00245

*Prepared by*

**City of Chattanooga**  
Waste Resources Division

*Submitted by*

**JACOBS**

Jacobs Engineering Group Inc.  
Consent Decree Program Manager

Chattanooga, Tennessee

February 25, 2015

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# Acronyms and Abbreviations

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|       |  |
|-------|--|
| CAP   | Capacity Assurance Program                           |
| CD    | Consent Decree                                       |
| CMOM  | Capacity, Management, Maintenance and Operations     |
| CSOTF | Combined Sewer Overflow Treatment Facility           |
| EPA   | Environmental Protection Agency                      |
| FOG   | Fats, Oils, and Grease                               |
| FSE   | Food Service Establishment                           |
| MG    | Million Gallons                                      |
| MH    | Manhole  |
| N/A   | Not Applicable                                       |
| No.   | Number   |
| NPDES | National Pollutant Discharge Elimination System      |
| O&M   | Operations and Maintenance                           |
| PM    | Preventive Maintenance                               |
| SORP  | Sewer Overflow Response Protocol                     |
| SSO   | Sanitary Sewer Overflow                              |
| TDEC  | Tennessee Department of Environment and Conservation |
| WCTS  | Waste Collection and Transmission System             |

# 1.0 Introduction

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## 1.1 Purpose

On April 24, 2013, the City of Chattanooga (“City”) entered into a consent decree with the United States and the State of Tennessee, in the case styled *United States of America et. al. v. City of Chattanooga, No. 1:12-cv-00245* (“CD”). Pursuant to Section IX of the CD, the City is required to submit annual reports on a yearly basis to the Environmental Protection Agency (“EPA”) and Tennessee Department of Environment and Conservation (“TDEC”). Chattanooga has prepared this report to satisfy the reporting requirements found in Paragraph 40 of the CD.

## 1.2 Requirements

As detailed in Section IX of the CD, the City is required to report a summary of Capacity, Management, Operations and Management (“CMOM”) Programs implemented or modified pursuant to the CD, including a comparison of actual performance with any performance measures that have been established. Additionally, the 1<sup>st</sup> 5 annual reports are to include a trends analysis of the number, volume, duration, and cause of Chattanooga’s Sanitary Sewer Overflow (“SSO”) events for a 24-month rolling period, updated to reflect the SSO events that occurred during the previous 12-month period. Beginning with the 6<sup>th</sup> annual report, this trends analysis will cover SSO events spanning a 5-year rolling period.

## 2.0 CMOM Programs

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The City is developing the CMOM programs pursuant to Paragraph 20 of the CD. As of the end of the second annual reporting period, January 1, 2014 through December 31, 2014, three have been approved by the EPA, one has received conditional approval from the EPA, three are under EPA review, and two are currently in development. All completed CMOM programs have been submitted on or ahead of schedule. Table 2-1 on the following page summarizes the status of the CMOM Programs, including updates related to implementation of those that have received EPA approval.

**Table 2-1  
CMOM Programs**

| January 1, 2014 - December 31, 2014       |                                    |  |                                   |   |  |   |
|---|------------------------------------|--|-----------------------------------|---|--|---|
| CMOM Program                              | CMOM Program Status                | CMOM Program CD Component  | CD Reference                      | CMOM Program Solution   | Established Performance Measure  | Actual Measured Performance   |
| Sewer Overflow Response Protocol ("SORP") | Approved by EPA and TDEC 5/29/2014 | Maintain records of all SSO responses and response times   | Section VI, Paragraph 20(a)(ii)   | Chattanooga has established a standard SSO Report Form for recording all required SSO related information, maintained via 311 calls, Cityworks Work Orders, and daily work activity summaries | Limit SSO response time to be within one hour after notification of event  | Average SSO response time since EPA approval on 5/29/2014 was ~13.5 minutes                         |
| Sewer Overflow Response Protocol ("SORP") | Approved by EPA and TDEC 5/29/2014 | Provide notice to TDEC as required by National Pollutant Discharge Elimination (NPDES) Permit within 24 hours of being made aware of an SSO event          | Section VI, Paragraph 20(a)(vii)  | Chattanooga has identified ISS staff responsible for compiling SSO report and providing required notification   | Notify TDEC of SSO events within 24 hours after being made aware of event  | All 24-hour reports were made to TDEC within the 24-hour time period                                |
| Sewer Overflow Response Protocol ("SORP") | Approved by EPA and TDEC 5/29/2014 | Provide adequate training for Chattanooga employees, contractors, and personnel of other affected agencies to effectively implement the SORP               | Section VI, Paragraph 20(a)(viii) | Chattanooga has identified ISS staff who will train the staff responsible for implementation of SORP, as well as designated a regular annual meeting time to conduct training sessions        | Perform staff training annually during the month of August   | Training has been completed for WRD supervision staff. Non-management staff will be trained in 2015 |
| Inter-Jurisdictional Agreement Program    | Approved by EPA and TDEC 9/16/2014 | Include provisions for renewal or entering of new agreements with municipal satellite sewer systems upon expiration or termination of any such agreements. | Section VI, Paragraph 20(i)       | Renewal of agreements is addressed in paragraph 2(a) of the agreement template  | All agreements entered or renewed pursuant to EPA's approval of the Inter-Jurisdictional Agreement Program will be subject to the terms of the program | Chattanooga initiated renegotiation of 1 agreement pursuant to the program in 2014.                 |



**Table 2-1  
CMOM Programs**

| January 1, 2014 - December 31, 2014               |  |   |                             |   |   |  |
|---|--|---|-----------------------------|---|---|--|
| CMOM Program                                      | CMOM Program Status                          | CMOM Program CD Component   | CD Reference                | CMOM Program Solution   | Established Performance Measure   | Actual Measured Performance              |
| Gravity Line Preventive Maintenance Program       | Approved by EPA and TDEC 12/3/2014           | Develop a preventive hydraulic cleaning component which shall include protocols for implementing the routine hydraulic cleaning of gravity sewer lines.   | Section VI, Paragraph 20(d) | Utilize inspections data, historical SSO locations, work order history, customer complaint history, FOG Program information and flow monitoring and hydraulic modeling results to identify priority areas for hydraulic cleaning. | Achieve an annual hydraulic cleaning preventive maintenance total of 1,000,000 linear feet through combination of City's crews and third-party contractors                  | Performance measurement to begin in 2015 |
| Gravity Line Preventive Maintenance Program       | Approved by EPA and TDEC 12/3/2014           | Develop a preventive mechanical cleaning component which shall include protocols for implementing the routine mechanical cleaning of gravity sewer lines. | Section VI, Paragraph 20(d) | Conduct assessment of 24-inch or larger diameter sewers subject to combined sewer flows or immediately upstream of major pumping stations to identify pipelines requiring mechanical cleaning.                                    | Complete large-diameter sewer assessment within a 5-year planning period (beginning in 2015) and complete required mechanical cleaning within 2 years of initial assessment | Performance measurement to begin in 2015 |
| Gravity Line Preventive Maintenance Program       | Approved by EPA and TDEC 12/3/2014           | Develop a root control component which shall include protocols for implementing root control for gravity sewer lines.                                     | Section VI, Paragraph 20(d) | Utilize inspections data, historical SSO locations, work order history, customer complaint history, FOG Program information and flow monitoring and hydraulic modeling results to identify priority areas for hydraulic cleaning. | Beginning in 2016, achieve annual chemical root control for 50,000 linear feet of pipeline  | Performance measurement to begin in 2016 |
| Fats, Oils, and Grease ("FOG") Management Program | EPA conditional approval received 12/10/2014 | Review enforcement provision of Sewer Use Ordinance, City Code Chapter 31   | Section VI, Paragraph 20(c) | N/A   | Complete by 6/10/2015   | N/A                                      |

**Table 2-1  
CMOM Programs**

| January 1, 2014 - December 31, 2014               |  |  |                             |   |  |  |
|---|--|--|-----------------------------|---|--|--|
| CMOM Program                                      | CMOM Program Status                          | CMOM Program CD Component  | CD Reference                | CMOM Program Solution   | Established Performance Measure  | Actual Measured Performance  |
| Fats, Oils, and Grease ("FOG") Management Program | EPA conditional approval received 12/10/2014 | Establish methods to identify persistent sources of FOG causing problems in the WCTS and the best method or mechanism for addressing those sources | Section VI, Paragraph 20(c) | Inspect all identified Food Service Establishments (FSE's) a minimum of one (1) time per year to confirm compliance with the FOG Management Program | Inspect 100% of identified FSE's annually  | The City conducted 61 FSE inspections since receiving EPA conditional approval in December 2014. |
| Fats, Oils, and Grease ("FOG") Management Program | EPA conditional approval received 12/10/2014 | Establish a public education program directed at reducing the amount of grease entering the WCTS from private residences                           | Section VI, Paragraph 20(c) | Employ a targeted outreach effort as well as a broader community campaign to educate residential customers on FOG management best practices         | Outreach and campaign to be implemented annually with the first program to be implemented by June 2015 | N/A  |
| Fats, Oils, and Grease ("FOG") Management Program | EPA conditional approval received 12/10/2014 | Establish methods to identify persistent sources of FOG causing problems in the WCTS and the best method or mechanism for addressing those sources | Section VI, Paragraph 20(c) | Monitor the number of FOG-related SSOs  | Attain yearly reduction  | 6 FOG-related SSOs were identified in 2014   |
| Fats, Oils, and Grease ("FOG") Management Program | EPA conditional approval received 12/10/2014 | Establish methods to identify persistent sources of FOG causing problems in the WCTS and the best method or mechanism for addressing those sources | Section VI, Paragraph 20(c) | Identify and reduce the amount of sewer that is classified as a FOG hot spot area   | Attain 10% reduction in linear footage   | N/A  |

**Table 2-1  
CMOM Programs**

| January 1, 2014 - December 31, 2014               |  |   |                             |  |   |                             |
|---|--|---|-----------------------------|--|---|-----------------------------|
| CMOM Program                                      | CMOM Program Status                          | CMOM Program CD Component   | CD Reference                | CMOM Program Solution  | Established Performance Measure                                       | Actual Measured Performance |
| Fats, Oils, and Grease ("FOG") Management Program | EPA conditional approval received 12/10/2014 | Establish performance indicators to be used by Chattanooga to measure the effectiveness of the FOG Management Program | Section VI, Paragraph 20(c) | Measure the number of annual Noncompliance Notifications versus the total FSE inspections                  | Attain <15% ratio of noncompliance/inspections                        | N/A                         |
| Fats, Oils, and Grease ("FOG") Management Program | EPA conditional approval received 12/10/2014 | Establish performance indicators to be used by Chattanooga to measure the effectiveness of the FOG Management Program | Section VI, Paragraph 20(c) | Monitor the number of FSE's added to the program annually  | Include every existing FSE in the program, so only new ones are added | N/A                         |
| Fats, Oils, and Grease ("FOG") Management Program | EPA conditional approval received 12/10/2014 | Establish performance indicators to be used by Chattanooga to measure the effectiveness of the FOG Management Program | Section VI, Paragraph 20(c) | Evaluate the effectiveness of the FOG Program and identify new goals and Key Performance Indicators (KPIs) | Complete annually   | N/A                         |
| Fats, Oils, and Grease ("FOG") Management Program | EPA conditional approval received 12/10/2014 | Establish performance indicators to be used by Chattanooga to measure the effectiveness of the FOG Management Program | Section VI, Paragraph 20(c) | Monitor cost of regulatory fines for SSOs due to FOG   | \$0   | N/A                         |

**Table 2-1  
CMOM Programs**

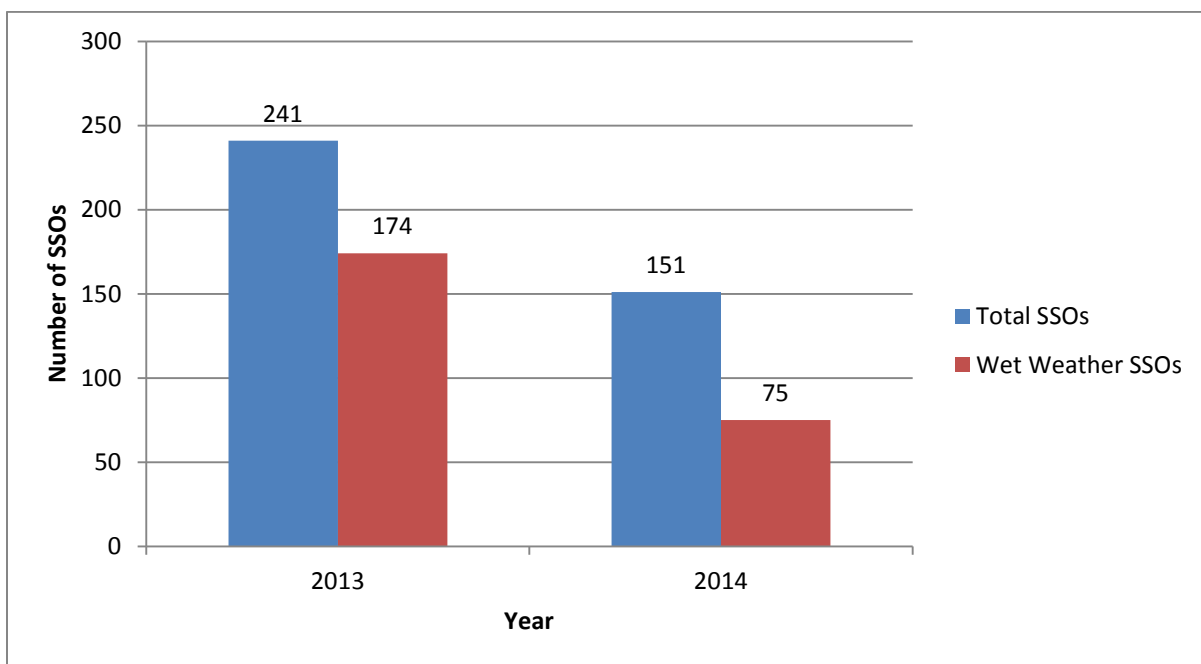
| January 1, 2014 - December 31, 2014               |  |  |                             |  |                                 |                             |
|---|--|--|-----------------------------|--|---------------------------------|-----------------------------|
| CMOM Program                                      | CMOM Program Status                          | CMOM Program CD Component  | CD Reference                | CMOM Program Solution  | Established Performance Measure | Actual Measured Performance |
| Fats, Oils, and Grease ("FOG") Management Program | EPA conditional approval received 12/10/2014 | Establish methods to identify persistent sources of FOG causing problems in the WCTS and the best method or mechanism for addressing those sources | Section VI, Paragraph 20(c) | Monitor the number of Pretreatment Program employees trained on FOG Management Program | Maintain 100% trained staff     | N/A                         |
| Emergency Response Plan                           | Submitted to EPA and TDEC 11/18/2014         | Applicable CD components to be identified upon EPA approval of program   | Section VI, Paragraph 20(b) | N/A  | N/A                             | N/A                         |
| Pump Station Operations Program                   | Submitted to EPA and TDEC 11/18/2014         | Applicable CD components to be identified upon EPA approval of program   | Section VI, Paragraph 20(e) | N/A  | N/A                             | N/A                         |
| Pump Station Preventive Maintenance Program       | Submitted to EPA and TDEC 11/18/2014         | Applicable CD components to be identified upon EPA approval of program   | Section VI, Paragraph 20(f) | N/A  | N/A                             | N/A                         |
| Hydraulic Model Development                       | On schedule to submit in May of 2016         | Applicable CD components to be identified during program development   | Section VI, Paragraph 20(g) | N/A  | N/A                             | N/A                         |
| Capacity Assurance Program ("CAP")                | On schedule to submit in May of 2016         | Applicable CD components to be identified during program development   | Section VI, Paragraph 20(h) | N/A  | N/A                             | N/A                         |

### 3.0 SSO Trends Analysis

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A trends analysis of the cause, duration, and volume of SSO events was conducted for the 24-month period spanning January 1, 2013 through December 31, 2014. Rainfall data collected during the same time period was included in the analysis to illustrate the effects of heavy, sustained rainfall on the occurrence, duration, and volume of the recorded SSO events. Figure 3-1 below provides a summary of SSO events by year for the reporting period:

**Figure 3-1**  
SSO Events by Year



A downward trend in SSO events from 2013 to 2014 has been observed as illustrated in Figure 3-1. The majority of SSO events during the reporting period were wet-weather related. Wet-weather related SSOs were 73% of the total SSOs in 2013 and 50% in 2014. As for SSOs that were not related to wet weather, there were 67 in 2013 and 76 in 2014. While this trend is slightly increasing, it is not significant.

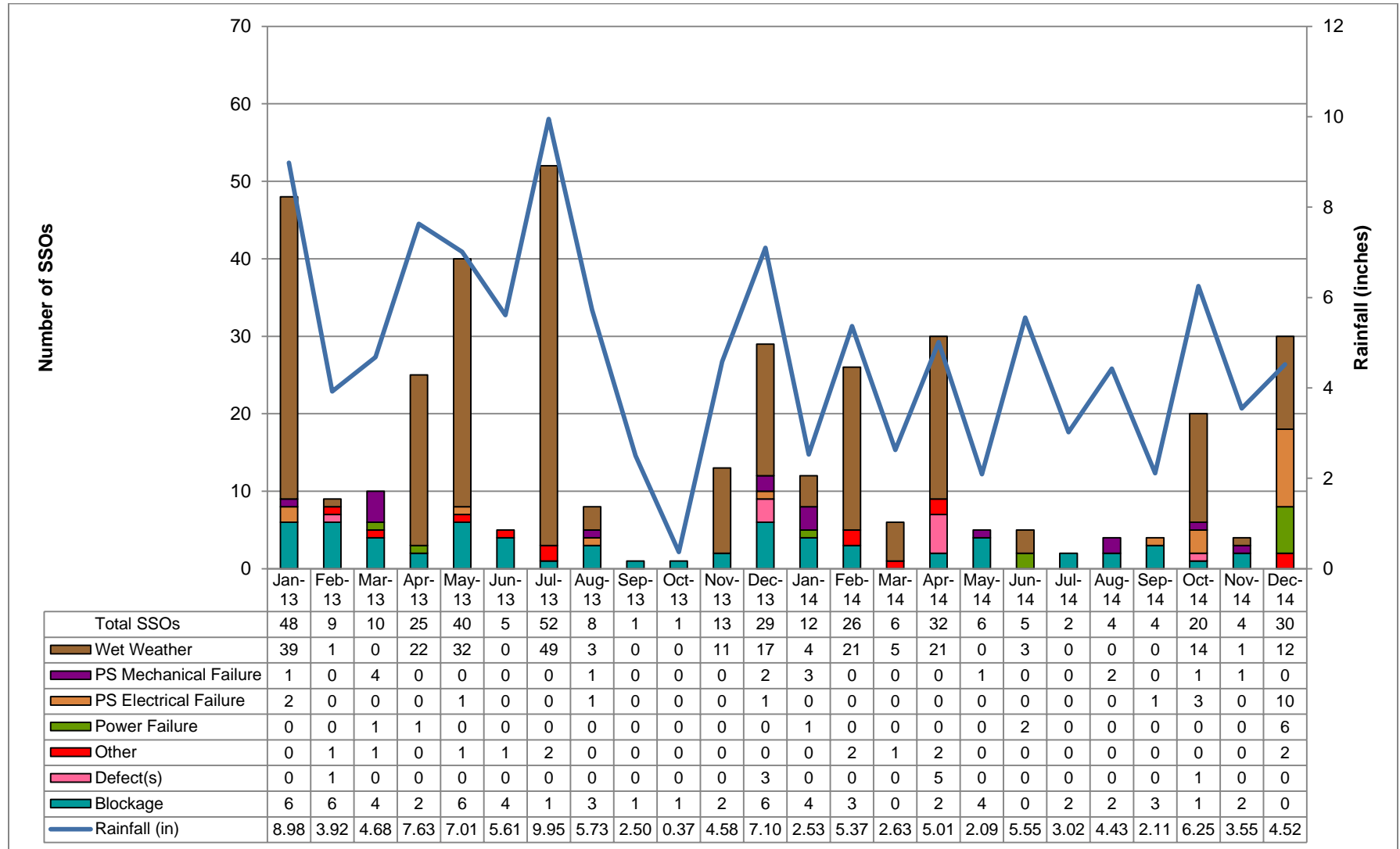
Figure 3-2 presents SSO events by cause per month. Wet weather was the leading cause of SSOs during the reporting period, followed by blockages.

Figure 3-3 presents total SSO events per month. The average number of SSOs per month for the reporting period was approximately 16. Of the months reported, 9 months had more than 16 SSOs reported; January 2013, April 2013, May 2013, July 2013, December 2013, February 2014, April 2014, October 2014 and December 2014. The above average number of SSOs reported for these months correlates to the heavy rain that was sustained during these months.

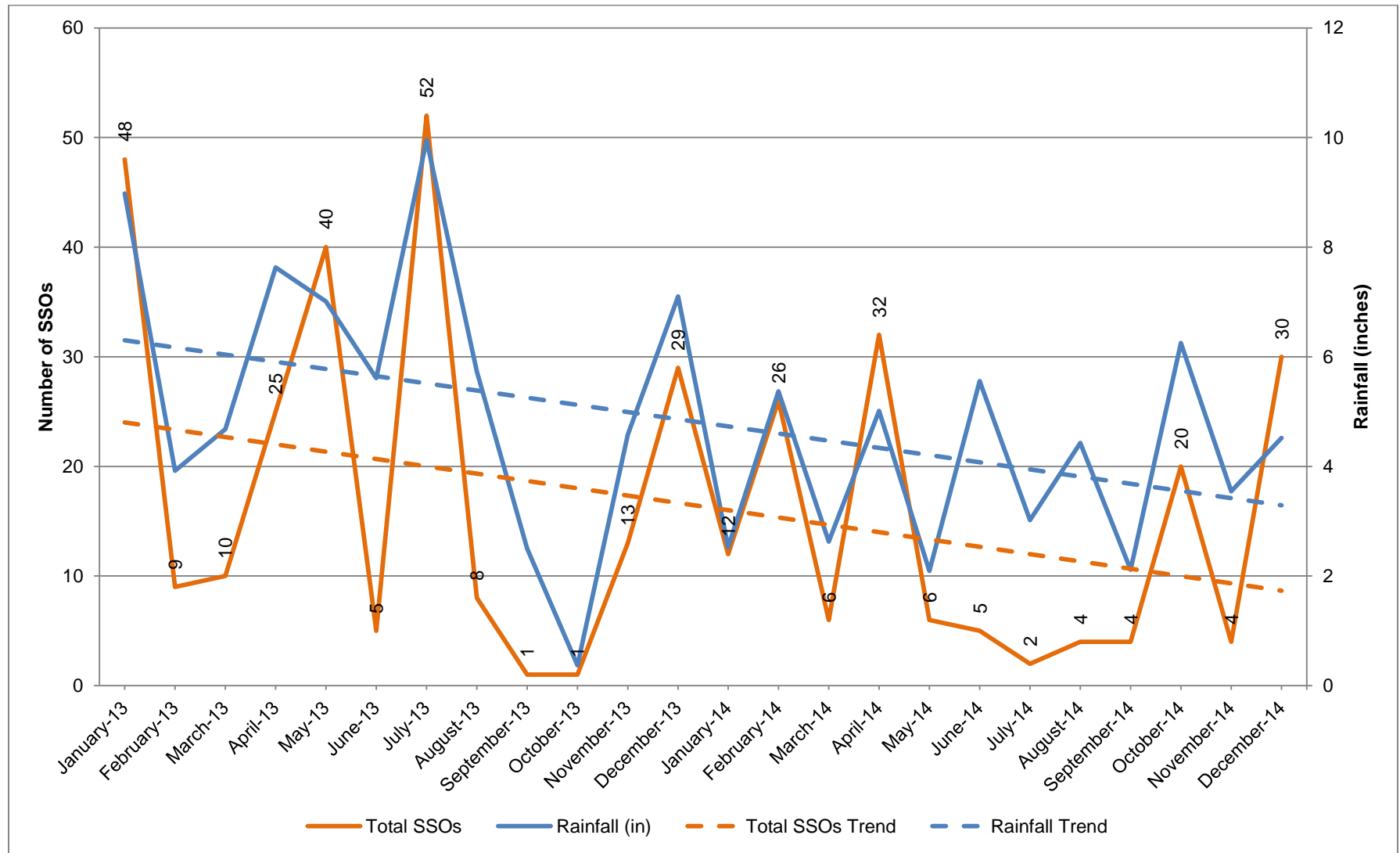
Figure 3-4 presents cumulative SSO duration per month or the sum of the durations of each SSO event that was recorded per month during the reporting period. The average cumulative SSO duration per month was approximately 399 hours. Of the months reported, 7 reported above average cumulative SSO durations; January 2013, April 2013, May 2013, July 2013, December 2013, October 2014 and December 2014. The above average cumulative SSO durations for these months correlate to the heavy rainfall experienced during the months.

Figure 3-5 presents cumulative SSO volume per month or the sum of the volumes of each SSO event that was recorded per month during the reporting period. The average cumulative SSO volume per month for the reporting period was found to be approximately 4 million gallons (MG). Of the months reported, 7 had cumulative SSO volumes that were greater than average; January 2013, May 2013, July 2013, April 2014, August 2014, October 2014 and December 2014. Most of the above average monthly SSO volumes correlate to heavy rainfall during the month. However, despite a downwards trend in monthly rainfall during the reporting period, the average monthly SSO volume was found to trend upwards. This increasing trend is partially due to improved SSO volume estimation per guidance provided by the SORP and better utilization of Chattanooga's existing flow monitoring program.

**Figure 3-2**  
SSO Events by Cause

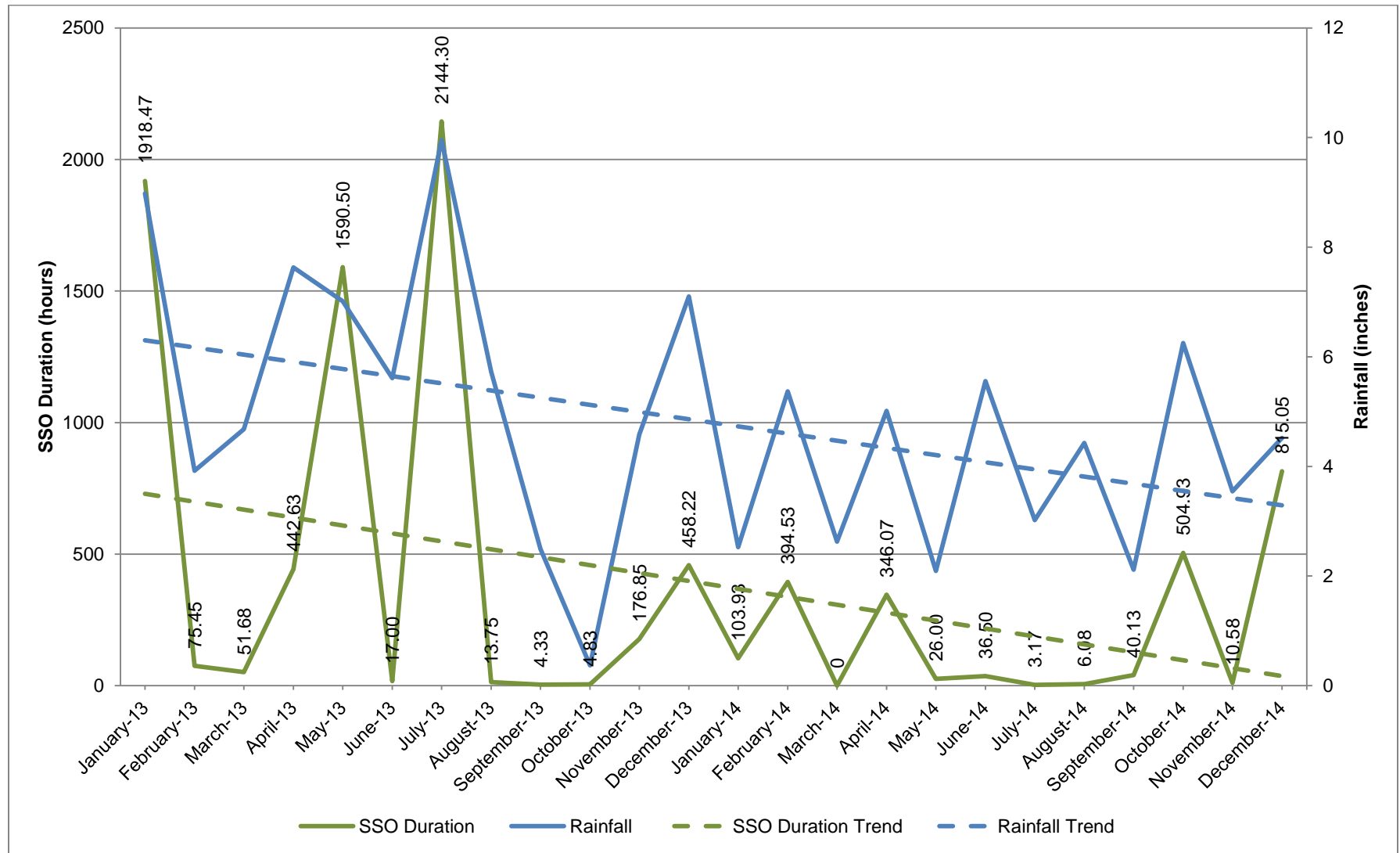


**Figure 3-3**  
Monthly SSO Quantities





**Figure 3-4**  
Monthly SSO Durations



**Figure 3-5**  
Monthly SSO Volume

