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METROPOLITAN GOVERNMENT OF NASHVILLE AND DAVIDSON COUNTY

January 28, 2014

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

Gentlemen and Madam:

In accordance with the provisions of the Consent Decree, Section XIX (Reporting Requirements), Subsection B, herewith we are transmitting the 2013 Annual Report, which covers the time period from January 1, 2013 through December 31, 2013.



If you need assistance or accommodations, please contact Metro Water Services,
William E. Coleman, Jr., at (615) 862-4862, 1600 Second Avenue North, Nashville, TN 37208



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In addition, in accordance with the provisions of the Consent Decree, Section XIX (Reporting Requirements), Subsection A, herewith we are transmitting the Quarterly Progress report which covers the time period from October 1, 2013 through December 31, 2013.

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

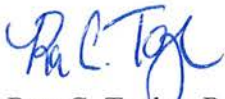
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage 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 please contact me.

Sincerely,



Scott A. Potter, P.E.
Director



Ron C. Taylor, P.E.
Overflow Abatement Program Director
Engineering Division

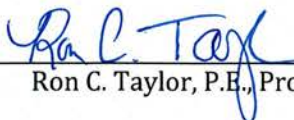
Cc: Mr. David Tucker, Assistant Director, Operations
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Mr. Gregory A. Ballard, P.E., Engineer 3
Mr. Thomas G. Cross, Associate Director, Metropolitan Department of Law

Clean Water Nashville Overflow Abatement Program

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

CONSENT DECREE 2013 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

1/29/14

Date

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Consent Decree 2013 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, 2013, 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 2012 and 2013
4. Trend analysis of dry weather Combined Sewer Overflows (CSOs) for 2012 and 2013

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) – Metro 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 for EPA review and approval by June 1 each year. No changes were requested in 2013.
- 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 2012 excluding the Munn Road pumping station. Property rights required to allow the installation of the permanent generator were obtained in December 2012, and the permanent generator was operationally complete in April 2013.

In addition to these programs, Metro's CMOM Self-Assessment established multiple recommendations and performance measures that Metro continues to track. A summary of these activities, including a review of the actual performance over the previous year, is included in **Table 1**.

2. Project Updates

Milestone dates for projects and activities associated with the *Nine Minimum Controls Compliance Plan* (NMC Compliance Plan), the *Corrective Action Plan / Engineering Report* (CAP/ER), and the *Long Term Control Plan* (LTCP) achieved during 2013 and those anticipated to occur during 2014 are shown in **Table 2**.

Metro continues to move forward with the implementation of projects identified in the CAP/ER and LTCP. However, the schedules presented herein are subject to the approval of the documents by the Environmental Protection Agency and the Tennessee Department of Environment and Conservation.

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: January 2012, July 2012, January 2013, April 2013, August 2013, and December 2013. In each of these months, 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 2012 through 2013 reported in million gallons (MG), while **Figure 3** shows monthly SSO durations within the system from 2012 through 2013. 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.

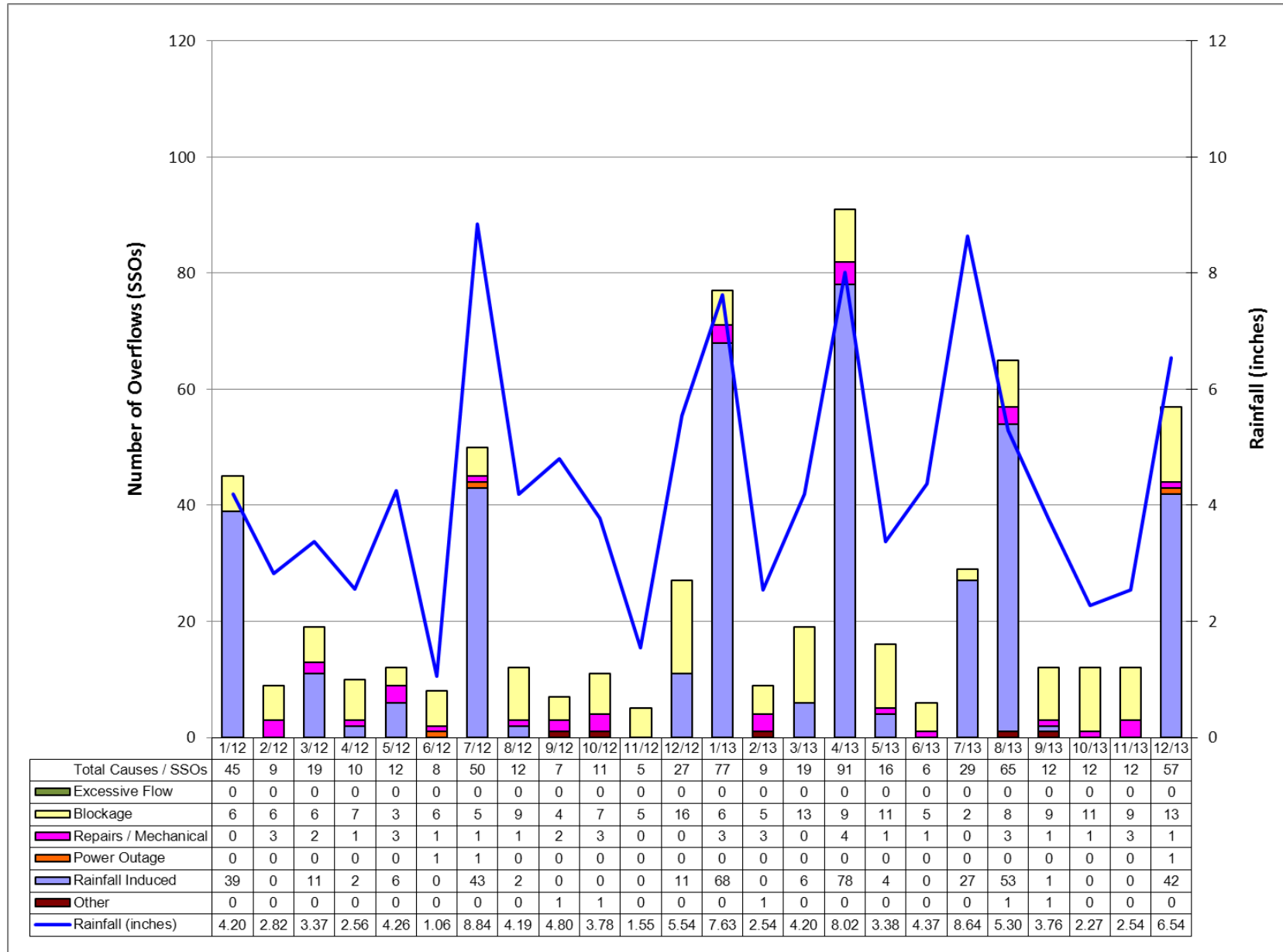


Figure 1 – SSO Events by Cause

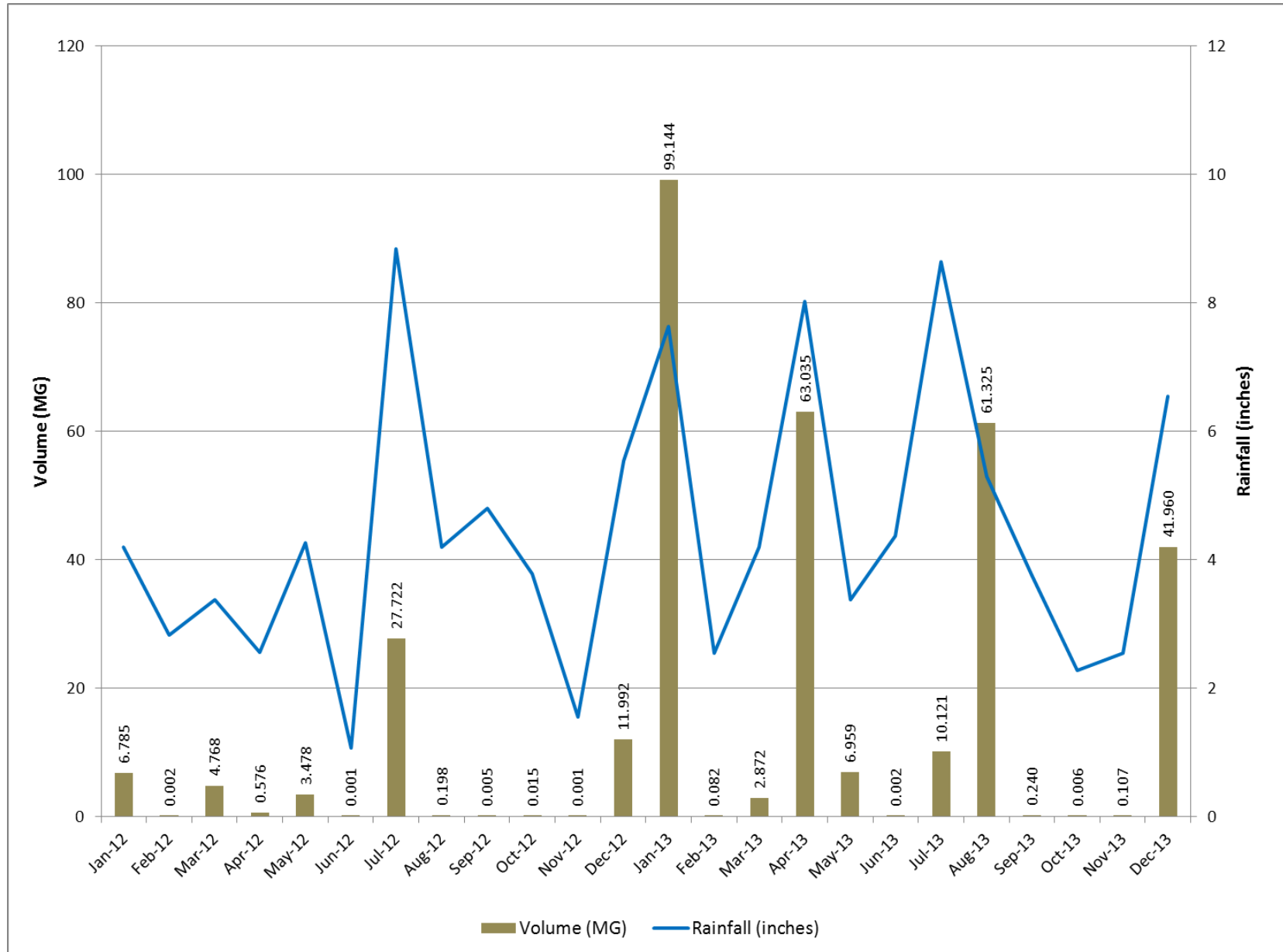


Figure 2 – Monthly SSO Volumes

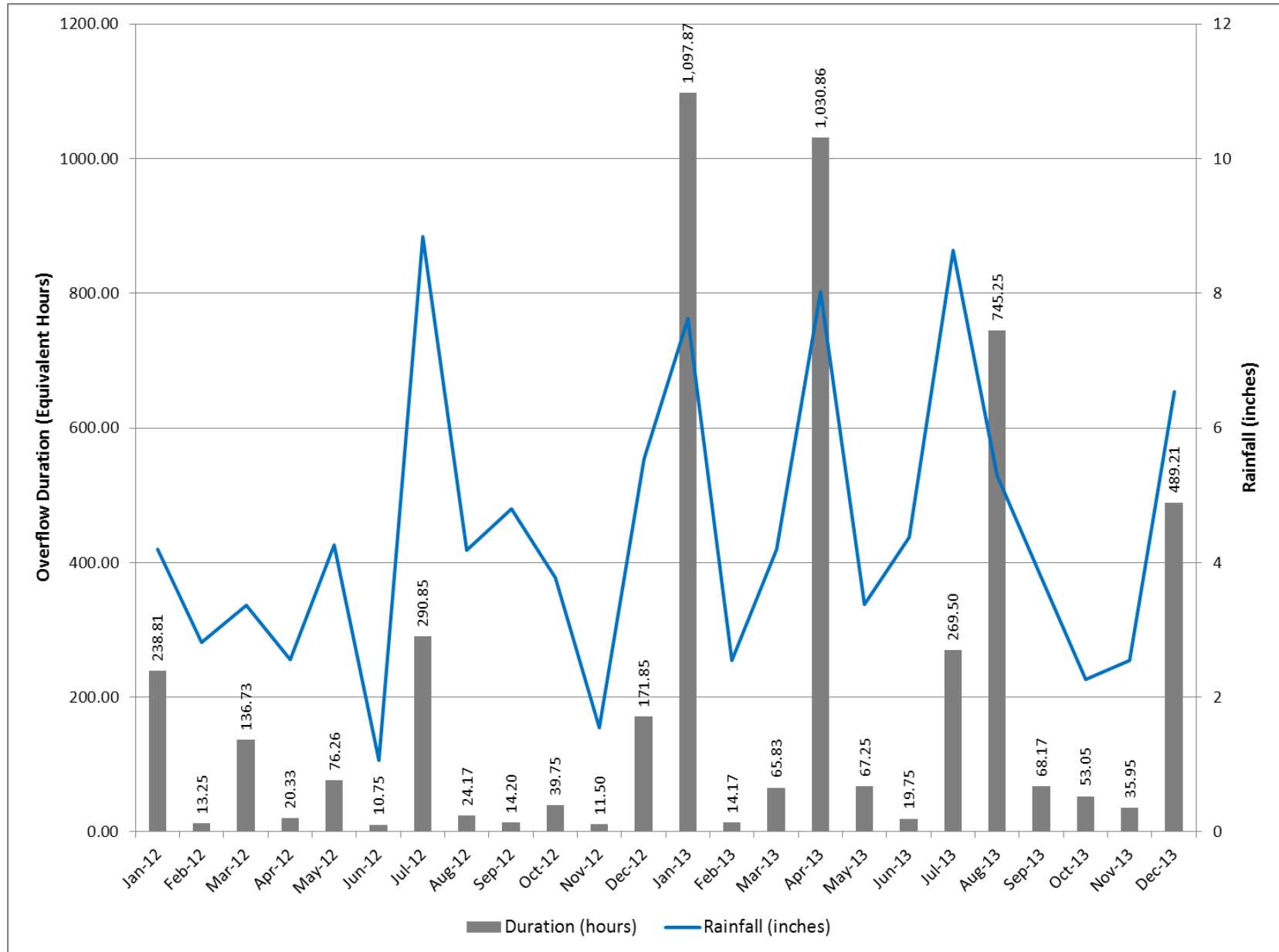


Figure 3 – Monthly SSO Durations

4. Combined Sewer Overflow Trends

There is not a trend analysis in this report for the dry weather combined sewer overflows (CSOs). No dry weather CSOs occurred in 2012 and 2013.

Table 1 – Summary of CMOM Programs

CMOM Report Section	CMOM Program	Recommendation	Implementation Deadline	Status	Performance Measure	Actual Performance
Section 4, II.b.	Skills Training	MWS will conduct periodic testing, drills and demonstrations of competency of skills.	7/08	Ongoing. Metro is tracking all required training for skills needed to perform duties related to CMOM. Reviewed the Spill and Overflow Response Plan (SORP) and determined no changes were needed.	In 2013, MWS targeted 25 employees for promotion if competencies demonstrated.	All 25 employees were promoted. Rotated staff for broadening functional capability of repair crews to assist with other assignments.
Section 4, IV.	Information Management System	MWS will develop and implement a process for reviewing all inspection, maintenance, operations, and customer complaint records to identify recurring problems. A Corrective Action Plan to address recurring problems that develop will be included.	1/08	Sewer Service Requests (customer calls concerning sewer service problems) have been reviewed and corrected as planned. During response to customer request, MWS educates customers on how MWS may assist them with private sewer service line problems. Also, conducted monthly review of sewer problems and strategy to correct sewer deficiencies. Continued to use information sheet for customers regarding property damage and 48-hour checklist for use of supervisors in the event of property damage. MWS also utilizes complaints and/or discoveries of system irregularities (from CCTV) as a basis for preventive and scheduled maintenance activities.	Number of service requests received and reviewed and number resolved.	100% received, reviewed, and resolved. MWS has revised the sewer service line brochure to change focus to assist customers in understanding how MWS can assist them in correcting private sewer problems, It also helps educate customers on how to prevent toilet and drain clogs. (For more information: http://www.nashville.gov/Water-Services/Customers/Services.aspx)
Section 4, V.d.	New Construction and Rehabilitation Inspection	MWS will develop standard operating procedures for conducting construction inspections that include methods for documenting inspections and maintaining the documentation. Include training requirements for all inspectors. Other means for managing data to closeout projects will be evaluated.	6/08	Handbook is developed and will be regularly updated.	No update necessary at this time.	Handbook in use.
Section 4, V.e.	Acquisition Considerations	MWS will develop and implement a standard policy for the acquisition of existing sewer systems. This policy will include a plan for bringing sewer systems to MWS's requirements, standards that must be met of the design of the existing sewer before acceptance by MWS, and the criteria that will be used for the determination of the financial aspects of the acquisition.	1/08	Policy has been developed. Implementation is pending acquisition activity.	N/A	In 2013, MWS acquired the Old Hickory Utility District.

CMOM Report Section	CMOM Program	Recommendation	Implementation Deadline	Status	Performance Measure	Actual Performance
Section 4, V.f.x.	Continuous Sewer System Assessment	MWS will develop and implement standard operating procedures for all assessment practices including technical procedures for carrying out each practice and a means to ensure follow-up on information that is documented during any of the assessment practices. All current forms will be reviewed that are used to determine if the appropriate information is obtained and develop new forms as necessary. A written standard method of prioritization of all assessment practices will be developed.	1/08	Continued monthly meetings to discuss chronic or newly identified sewer defects. Continued to utilize the calibrated MIKE URBAN (SWMM) sewer system model to better evaluate observed overflows as needed.	Review Standard Operating Procedures (SOPs) annually.	<p>2013 SOPs review completed. Also reviewed and updated list of sewers to check for overflows during wet weather.</p> <p>MWS began using new acoustic technology to make rapid assessments of sewers for potential blockages in sewer line segments. The tool called Sewer Line – Rapid Assessment Tool (SL-RAT) has assisted MWS to find potential blockages and reduce overflows. Based on scoring system, follow-up TV inspections were done on identified segments and then cleaned as needed.</p> <p>Reviewed with staff the new MS4 BMPs for protection of streams during pit pumping/dewatering, material collection/disposal, and work in or around creeks and drainage ditches.</p> <p>Audited our spill kit supplies on the cleaning trucks and restocked, as needed. Added some new items to contain spills.</p> <p>Improved the Sewer Overflow Notification Forms for clarity and accuracy of information. Reviewed Building Backup procedures and SORP (Spill and Overflow Response Plan).</p>
Section 4, V.g.	Infrastructure Rehabilitation Program (OAP)	MWS will develop and implement a management plan to address wet weather conditions once the sewer model is completed.	12/08* *will be updated by CAP/ER	Complete	CAP/ER must be completed by September 12, 2011.	<p>CAP/ER was submitted on September 9, 2011.</p> <p>As part of the Clean Water Nashville Overflow Abatement Program, a methodology to prioritize sewers (outside of CAP/ER rehabilitation areas) for repair has been established. Design of the first project under this Annual Rehabilitation Program was initiated in 2013 and additional work is expected in 2014.</p>

CMOM Report Section	CMOM Program	Recommendation	Implementation Deadline	Status	Performance Measure	Actual Performance
Section 4, V.h.	System Capacity Assurance	MWS will complete the conversion of the sewer model into MIKE URBAN software.	4/07	Complete	Number of model runs since date of entry.	There were 131 model runs for capacity analysis for January 1 through December 31, 2013.
Section 4, V.h.	System Capacity Assurance	The Master Sewer Growth Plan will be renewed and updated every five years.	12/08	Complete	Update every 5 years.	An intermediate population update was complete in 2008, and growth projections were included in the CAP/ER completed in 2011. The next formal update to the Master Sewer Growth Plan is expected in 2016.
Section 5	Operations	MWS will develop and implement Standard Operating Procedures for critical operations programs. The SOPs shall include a means for follow-up on any items noted.	12/08	Complete	Review SOP's annually.	2013 review completed.
Section 5, I.a.i.	Pump Station Monitoring	The integration of HSQ and Intrac into a consolidated system will be completed.	10/07	Citect SCADA system in operation. All pump station telemetry is now consolidated into one system.	Receive 100% information on all data points.	All critical data points are being received. The current system will continue to be reviewed and improved, as needed.
Section 5, I.a.iii.	Operation and Maintenance Manuals	The feasibility of implementing electronic O & M manuals will be investigated. If it is determined that this is feasible, a new goal will be established for implementation.	12/07	All new facility O&M manuals will be electronic. Operating parameters and equipment at all facilities are updated as modifications are made electronically.	Require all new O&M manuals to be submitted in electronic format. All modifications to be updated electronically.	All new O&M manuals are received in electronic format. Modifications have been updated.
Section 5, I.b.i.	Reactive Operations	MWS will develop and implement an SOP for tracking the inventory of spare pumps for the smaller pump stations. It will be determined if tracking through CMMS is possible.	12/07	Tracking through CMMS was determined to be impractical. A new spreadsheet-based system for tracking the inventory of spare parts for smaller pump stations has been developed.	Review SOP's annually.	2013 review complete.
Section 5, IV.	Fats, Oils and Grease Control	A mailing system will be implemented to distribute a notification to all residential customers in a specific area where fats, oils, and grease (FOG) interference has been a problem. An English/Spanish notification is being developed currently.	2/07	Use Integrated Voice Response outbound calling for notification in problem areas, where warranted. Written notifications are provided in English and Spanish. Improvements are under review for the follow up letter, which is distributed after the outbound calling for FOG notifications.	Notifications mailed, distributed, and/or called out as needed.	In 2013, 1230 notifications were distributed due to grease blockages and/or overflows of the sanitary sewer.
Section 6, II.a.	Gravity Line Preventative Maintenance	MWS will develop a method to track the actual footage cleaned from manhole to manhole that does not include footage from multiple passes. This will provide a more accurate measure of the actual footage of the system being cleaned each year.	10/07	Modified cleaning goals based on cleaning as a result of discovered debris or locations on chronic grease/roots lists. Resources are focusing more on inspection.	16,250 LF/month and 750 LF/day (actual footage)	In 2013, MWS and/or contractors cleaned 604,601 LF which included the removal of 2015 tons of debris. Continue to periodically inspect and clean sewer segments with previous problems with roots or grease and update lists. Currently have 280 sewer segments on roots list and 310 sewer segments on grease list for periodic inspection and cleaning.

CMOM Report Section	CMOM Program	Recommendation	Implementation Deadline	Status	Performance Measure	Actual Performance
Section 6, II.a.	Gravity Line Preventative Maintenance	MWS will develop goals of the actual footage to be cleaned that reflect an analysis of past CMMS cleaning data to determine the actual footage of sewers cleaned.	11/07	New goals established to emphasize quality and investigative cleaning and de-emphasize non-directed cleaning.	See above for performance measure under first recommendation for this program.	See above for actual performance under first recommendation for this program.
Section 6, II.a.	Gravity Line Preventative Maintenance	MWS will evaluate daily goals based on 210 working days per year or 17.5 days/month, which includes estimates for the many reasons crew members would not be available. Goals will be reviewed to reflect potential improvements in planning, scheduling, and record keeping, along with fundamentals of continuous improvement. Also, goals will consider that there are certain segments that require more frequent cleaning.	1/08	New goals established to optimize use of resources.	See above for performance measure under first recommendation for this program.	See above for actual performance under first recommendation for this program.
Section 6, II.a.	Gravity Line Preventative Maintenance	MWS will evaluate ways to set priority on how often various groupings of sewer categories should be inspected with television. Examples, new PVC or recently lined sewers may not be inspected for another 5 to 10 years. However, clay or sewers older than 20 years or large diameter brick sewers would have priority to inspect them within the next five years.	12/07	<p>Investigations are based on priorities for directing cleaning (restricted flow due to nonstructural issues), complaints, NPDES needs, flow monitoring irregularities, etc. In 2013, inspections were focused on needs of CAP/ER for Consent Decree work. In non-CAP/ER areas, inspections were focused on older pipe and pipe material such as clay.</p> <p>Utilizing GIS mapping, areas were selected for inspection based on being within 50 feet of streams or not having been inspected within previous 5 years.</p> <p>MWS began using a new acoustic technology to make rapid assessments for potential blockages or pipe defects in sewer line segments. The tool called Sewer Line – Rapid Assessment Tool (SL-RAT) has assisted MWS in assessing additional footage of sewers to detect potential blockages or defects for reducing overflows.</p> <p>In 2010, MWS contracted with two firms to conduct inspections and cleaning of sewers affected by the May 2010 flood. In 2013, continued contractor inspections and cleaning in other areas of the system.</p> <p>Continued using Mobile Dispatch and Hansen Planning (Group Work Orders). This allows for a standardization of processes and reduced the risk of missing locations under review/report.</p>	Original CMOM Self-Assessment established a goal for inspection of 360,000 LF per year per crew.	<p>A total of 1.5 million feet of sewer was inspected in 2013, and 1.25 million feet of sewer was assessed by SL-RAT, including approximately 35 percent in easements and other difficult to access areas. Based on the scoring system, follow up TV inspections were done on approximately 5 percent of segments, and cleaning was conducted as needed.</p> <p>This includes inspections completed by MWS and contractors.</p> <p>Based on structural deficiencies discovered, projects will be initiated to correct defects.</p>

CMOM Report Section	CMOM Program	Recommendation	Implementation Deadline	Status	Performance Measure	Actual Performance
Section 6, II.a.	Gravity Line Preventative Maintenance	MWS has recently purchased three new CCTV cameras to inspect and to televise the 224 miles of CSO lines and the other large diameter sewers. Three crews began using the cameras in August 2006. As experience is gained and the process refined of using these cameras, MWS will develop a plan and standard operating procedures (SOP) to inspect a certain amount of large diameter sewers over a projected period of time. The CSO and large diameter sewer televising will be incorporated into the goals for sewer televising for the entire system.	1/08	Large diameter sewer inspection contract established. In 2010, contracted with two national firms to conduct inspections and cleaning of sewers affected by the May 2010 flood. In 2013, continued contractor inspections and cleaning in additional areas of the system. Our contractors have better equipment to inspect all sizes of sewer.	Complete inspection of large diameter sewers in the next 5 years.	A total of 1.5 million feet of sewer was inspected in 2013. Of this, 45,333 feet of sewers 24-inch or greater in diameter were inspected. This includes inspections completed by MWS and contractors.
Section 6, II.b.	Root Control	MWS will consider development of a policy for resolving root intrusion in service lines with a customer	10/07	Updated in SORP. Submitted on May 27, 2009, to TDEC/EPA. Approved on August 18, 2009. When, during inspections of the main, roots are observed in service lines, MWS sends the customer a letter with photo of the inspection, a sewer map, and an illustrated copy of the Private Sewer Service line policy that includes information about the customer's responsibility and how MWS will assist in removing the roots, if requested.	N/A	Over 32 "Roots Letters" were sent to customers in 2013.
Section 6, III.	Air Valve Preventative Maintenance	MWS will develop standard operating procedures for inspection and replacement of air/vacuum valves.	12/07	Complete	Review SOPs annually.	Review of the Air Release Valve (ARV) Program was completed in November 2013.
General	All	MWS will develop performance measures for all programs that do not have current measures in place.	12/07	Ongoing; pertinent items developed for all items above.	N/A	No new performance measures implemented in 2013.

Table 2 – Design/Construction Project Updates

Project Update 2013 Annual Report					
Project Number	Project Name	Design Start Date	Design End Date	Construction Start Date	Construction Substantial Completion
93-SC-34T	Whites Creek Pump Station Improvements	11/2009	3/2011	2/2012	11/2013
10-SG-83	Lakewood Water and Sewer Replacement	4/2010	8/2013	1/2014	4/2015
11-SG-0078	2011 Collection System Structural Defect Repair	6/2011	9/2012	2/2013	8/2013
11-SC-067	Driftwood Equalization Facility	8/2011	4/2012	7/2012	6/2013
99-SC-009L	Dodson Chapel Equalization Facility	9/2011	1/2012	5/2012	11/2013
11-SC-0101	West Park Equalization Facility Phase II	5/2012	4/2014	10/2014	8/2016
11-SC-0102	Mill Creek / Opryland Equalization Facility - Phase II	8/2012	5/2013	1/2014	3/2015
11-SC-0106	Neelys Bend Rehabilitation	9/2012	6/2013	12/2013	9/2016
11-SC-0104	Dodson Chapel Pipe Improvements	10/2012	4/2014	11/2015	11/2016
11-SC-105A	Shelby Park Rehabilitation - Area 1 - Virginia Avenue	10/2012	6/2013	1/2014	12/2014
11-SC-0148	Joelton Rehabilitation	1/2013	6/2013	10/2013	7/2014
11-SC-103A	Cowan Riverside Rehabilitation - Area 1 - Jones Avenue	2/2013	9/2013	1/2014	1/2015
11-SC-0121	Apex Sewer Corrections	3/2013	10/2013	4/2014	9/2014
13-SC-0001	Annual Rehabilitation FY2013	6/2013	4/2014	9/2014	8/2015
11-SC-103B	Cowan Riverside Rehabilitation - Area 2 - Dickerson Pike	7/2013	2/2014	8/2014	7/2015
11-SC-105B	Shelby Park Rehabilitation - Area 2 - Norvel Avenue	7/2013	1/2014	6/2014	5/2015
11-SC-0144	Brick Church Pike Pipe Improvements	7/2013	10/2014	5/2017	11/2018
11-SC-147A	Highway 100 / Tyne Boulevard - Trimble Rehabilitation	9/2013	4/2014	8/2014	6/2015
11-SC-105C	Shelby Park Rehabilitation - Area 3 - Greenland Avenue	12/2013	7/2014	1/2015	11/2015
11-SC-0111	Davidson and Brook Hollow Rehabilitation	4/2014	10/2014	4/2015	7/2016
11-SC-135A	28th Avenue Rehabilitation - Area 1	5/2014	11/2014	8/2015	11/2016
14-SC-xxxx	Annual Rehabilitation FY2014	5/2014	11/2014	8/2015	11/2016
11-SC-0111	Davidson Branch Equalization Facility	9/2014	9/2015	6/2016	12/2017
11-SC-0140	Gibson Creek Rehabilitation	9/2014	4/2015	12/2015	4/2017
11-SC-103C	Cowan Riverside Drive Rehabilitation - Area 3	9/2014	4/2015	1/2016	4/2017
11-SC-120A	Smith Springs Rehabilitation - Area 1	10/2014	4/2015	1/2016	4/2017