

KARL F. DEAN  
MAYOR



## METROPOLITAN GOVERNMENT OF NASHVILLE AND DAVIDSON COUNTY

April 28, 2014

DEPARTMENT OF WATER AND SEWERAGE SERVICES  
1600 SECOND AVENUE, NORTH  
NASHVILLE, TENNESSEE 37208-2206

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

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

Chief, Water Programs Enforcement Branch  
Water Management Division  
U. S. Environmental Protection Agency, Region 4  
Atlanta Federal Center  
61 Forsyth Street, S.W.  
Atlanta, GA 30303

Mr. Barry Turner, Deputy 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  
Division of Water Resources  
William R. Snodgrass Tennessee Tower  
312 Rosa L. Parks Avenue, 2nd Floor  
Nashville, TN 37243

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

Gentlemen and Madam:

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 January 1, 2014 through March 31, 2014.



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



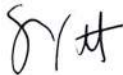
printed on recycled paper

A copy of the 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 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  
Mr. Cyrus Q. Toosi, P.E., Assistant Director / Chief Engineer, Engineering  
Mr. Gregory A. Ballard, P.E., Engineer 3  
Mr. Thomas G. Cross, Associate Director, Metropolitan Department of Law

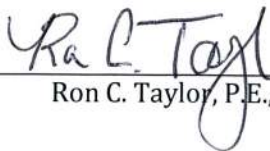
## Clean Water Nashville Overflow Abatement Program

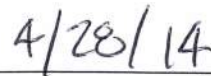
**Metropolitan Government of Nashville and Davidson County  
Department of Water and Sewerage Services**

# **CONSENT DECREE QUARTERLY PROGRESS REPORT**

**January 1 through March 31, 2014**

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

  
\_\_\_\_\_  
Date

# Table of Contents

<b>Section 1</b>	<b>Introduction .....</b>	<b>1-1</b>
1.1	Additional Programs .....	1-1
1.2	Report Organization .....	1-2
<b>Section 2</b>	<b><i>Corrective Action Plan/Engineering Report</i>.....</b>	<b>2-1</b>
2.1	Completed CAP/ER Projects.....	2-1
2.2	CAP/ER Projects under Construction.....	2-2
2.3	CAP/ER Projects under Design.....	2-3
2.4	Upcoming CAP/ER Projects .....	2-5
<b>Section 3</b>	<b><i>Long Term Control Plan</i>.....</b>	<b>3-1</b>
3.1	Completed LTCP Projects.....	3-1
3.2	LTCP Projects under Construction.....	3-2
3.3	LTCP Projects under Design .....	3-2
3.4	Upcoming LTCP Projects .....	3-2
<b>Section 4</b>	<b>Additional Measures to Maintain Consent Decree Compliance .....</b>	<b>4-1</b>
4.1	2013 Annual Sewer Rehabilitation.....	4-1
<b>Section 5</b>	<b>Quarterly SSO and Dry Weather CSO Report.....</b>	<b>5-1</b>

## List of Tables

Table 5-1	Quarterly SSO Report .....	5-2
-----------	----------------------------	-----

## Appendix

Appendix A	Schedule for Current and Upcoming Projects
------------	--

# Section 1

## Introduction

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. To fulfill the reporting requirements defined in Section XIX.A. of the Consent Decree, Metro has prepared this *Quarterly Progress Report*, which includes the following information:

1. Information on sanitary sewer overflows (SSOs) and dry-weather combined sewer system overflows (CSOs) occurring during the reporting period
2. A description of the work conducted during the reporting period to comply with the requirements of the Consent Decree
3. The anticipated work for the upcoming quarter to comply with the requirements of the Consent Decree
4. Any additional information necessary to demonstrate that Metro is adequately implementing the work

Work, as defined in the Consent Decree, includes all activities that Metro is required to perform under the Consent Decree. For the purposes of this *Quarterly Progress Report*, however, the focus will remain on current and upcoming work related to the *Corrective Action Plan/Engineering Report (CAP/ER)*, the *Long Term Control Plan (LTCP)*, and additional activities to address SSOs and CSOs.

### 1.1 Additional Programs

Several additional programs, listed below, were also required to be developed or implemented as part of the Consent Decree. Any modifications or updates to these programs will be identified in Section 4 of this report.

- *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 will be conducted annually with any proposed changes submitted for EPA review and approval by June 1 each year.
- *Inter-jurisdictional Agreement Program (Section VII.C.3)* – All required inter-jurisdictional agreements are now 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 the start of the reporting period.

- Nine Minimum Controls Compliance Plan (Section VII.D.1) – All elements of the Nine Minimum Controls Compliance Plan (NMC) were completed in 2012.
- Supplemental Environmental Projects (Section VIII) – The Supplemental Environmental Projects (SEPs) required in the Consent Decree were completed in 2010.

## 1.2 Report Organization

This *Quarterly Progress Report* is organized as follows:

Section 1 – Introduction

Section 2 – Corrective Action Plan/Engineering Report

Section 3 – Long Term Control Plan

Section 4 – Additional Measures to Maintain Consent Decree Compliance

Section 5 – Quarterly SSO and Dry-Weather CSO Report

## Section 2

### *Corrective Action Plan/Engineering Report*

To address the conditions causing overflows in their sanitary sewer system, Metro developed a *Corrective Action Plan / Engineering Report (CAP/ER)* that was submitted to EPA and TDEC on September 11, 2011.

The CAP/ER development began with a characterization of Metro's sanitary sewer system through extensive monitoring and modeling to understand the existing system's limitations. The need for improvements to address both current and future sewer capacity needs was then assessed, and potential alternatives were evaluated to select efficient and cost effective solutions. These recommended projects, which include infrastructure rehabilitation, additional conveyance capacity, and storage of wet weather flows, are presented in the CAP/ER.

While EPA and TDEC review the report, Metro continues to move forward with the implementation of multiple projects presented in the CAP/ER. These projects are described in the following subsections, and a schedule illustrating current and upcoming work on CAP/ER projects is presented as Appendix A.

#### 2.1 Completed CAP/ER Projects

The following projects, discussed in the CAP/ER, achieved substantial completion prior to the start of the reporting period:

- Dry Creek Wastewater Treatment Plant Optimization
- Smith Springs Equalization Storage
- Barker Road / Omohundro Equalization Storage Phase I
- West Park Equalization Storage Phase I
- Mill Creek 36-inch Trunk Sewer System Rehabilitation
- Rockwood Conveyance Improvements
- Holiday Travel Park Gravity Conversion
- Whites Creek Wastewater Treatment Plant (WWTP) Optimization and Disinfection Project
- Whites Creek Wastewater Pumping Station
- Dodson Chapel Equalization Tank and Wastewater Pumping Station Expansion

## 2.2 CAP/ER Projects under Construction

The following projects, discussed in the CAP/ER, were under construction during the reporting period:

- **Joelton Rehabilitation**

The Joelton Rehabilitation project included the evaluation of approximately 38,700 linear feet of gravity sewer and almost 200 manholes. Condition assessment data obtained in the area indicated that manholes appeared to be the primary source of infiltration and inflow, and, therefore, the resulting design focused on the repair of manholes within the project area. The project consists of the replacement of approximately 17 manholes and curtain grouting, miscellaneous structural enhancements, or other improvements for the remaining manholes in the project area based on their existing condition. Additionally, several service laterals and cleanouts are being repaired.

Design began on January 2, 2013, and was completed in June 2013. Advertisement for construction began on July 1, 2013. Construction activities began on October 28, 2013, and the project is expected to achieve substantial completion during the upcoming quarter.

- **Neely's Bend Rehabilitation**

Based on the condition assessment data collected in the area adjacent to the Neely's Bend Rehabilitation project (as presented in the CAP/ER), the area targeted for rehabilitation was extended to include all gravity sewers that drain directly to the Neely's Bend Pump Station. Approximately 31,400 linear feet of gravity sewer and associated manholes were evaluated during design. The scope for construction consists of cured-in-place pipe lining of approximately 22,000 linear feet of sewer, rehabilitation of more than 110 manholes, and approximately 250 service renewals using cured-in-place pipe lining and open-cut techniques.

Design began on September 27, 2012, and was completed in June 2013. Advertisement for construction began on July 1, 2013, with bids due on August 2, 2013. However, following a protest regarding the bid, the project was re-advertised for bids, and new bids were received on October 14, 2013. Construction activities commenced on December 16, 2013, and are anticipated to continue throughout the upcoming quarter.

- **Shelby Park Rehabilitation – Area 1 – Virginia Avenue**

This rehabilitation project is the first of multiple projects that will be conducted in the Shelby Park Rehabilitation project area. The area evaluated for rehabilitation included approximately 54,400 linear feet of gravity sewer. The resulting construction project consists of cured-in-place pipe lining of over 50,000 linear feet of gravity sewer, rehabilitation of associated manholes, and over 700 service renewals using cured-in-place pipe lining or open cut techniques.

Design began on September 11, 2012, and was completed in June 2013. Advertisement for construction began on August 14, 2013, and the contract was awarded in September 2013. Construction activities began on January 13, 2014, and are expected to continue during the upcoming quarter.



- Lakewood Water and Sewer Replacement

The design of sewer, water, and stormwater improvements in the Lakewood area is complete. Advertisement for a two-step procurement process began during the 2<sup>nd</sup> Quarter of 2013. Bids for construction from the three pre-qualified contractors were received on October 4, 2013, and the Notice of Award was issued on October 17, 2013. Construction activities began on January 27, 2014, and are anticipated to continue during the upcoming quarter.

This project represents the first of two phases of work in the Lakewood area.

- Mill Creek / Opryland Equalization Facility – Phase II

Phase II of the Mill Creek / Opryland Equalization Facility project includes the construction of approximately 19 million gallons of additional storage. Design began on August 10, 2012, and was complete, including obtaining the required permits and approvals, in July 2013. Advertisement for construction began on August 14, 2013, and the contract was awarded in September 2013. Construction activities began on January 8, 2014, and are expected to continue during the upcoming quarter.

- Cowan / Riverside Rehabilitation – Area 1 – Jones Avenue

This rehabilitation project is the first of multiple projects that will be conducted in the Cowan / Riverside Rehabilitation project area. The area evaluated for rehabilitation included approximately 50,200 linear feet of gravity sewer and 270 manholes. The resulting construction project consists of cured-in-place pipe lining of over 40,000 linear feet of gravity sewer, rehabilitation of associated manholes, and over 630 service renewals using cured-in-place pipe lining or open cut techniques.

Design began on February 4, 2013, and was completed during September 2013. Advertisement for construction began on October 7, 2013, and bids were received on November 8, 2013. Construction began on January 29, 2014, and is anticipated to continue during the upcoming quarter.

## 2.3 CAP/ER Projects under Design

The following projects, discussed in the CAP/ER, were under design during the reporting period:

- West Park Equalization Facility Phase II

In order to minimize impacts to the surrounding neighborhood, Phases II and III of the West Park Equalization Facility were combined into a single design and construction project. Design began in May 2012; however, during preliminary design it was determined that potential flood impacts to adjacent properties required an alternate site for the equalization tank. Following additional investigation, Metro selected the adjacent park site to accommodate the required storage volume. Design efforts for the equalization tank were restarted during the 1<sup>st</sup> Quarter of 2013 and are expected to continue in the upcoming quarter.

When constructed, the additional improvements at the West Park Equalization Facility are expected to add 21 million gallons of storage and expanded pumping capacity.

- **Dodson Chapel Pipe Improvements**

Following the completion of the Rockwood Conveyance Improvements project and subsequent updates to the hydraulic model in this area, evaluation of the collection system in the Dodson Chapel Pipe Improvements area indicated that the extents of the proposed project could be reduced while still addressing overflows. The current project consists of increasing the conveyance capacity of approximately 3,400 linear feet of sewer. Design began on October 8, 2012. In mid-2013, an analysis of the 60 percent design and the associated Dodson Chapel Equalization Tank and Wastewater Pumping Station Expansion project indicated that an unacceptable level of surcharging is predicted upstream of the project area. To address this, the existing design was reviewed and modified to replace the proposed inverted siphon with an aerial crossing. It is anticipated that the design will be completed during the upcoming quarter and that permitting and easement acquisition activities will continue throughout the summer.

- **Shelby Park Rehabilitation – Area 2 – Norvel Avenue**

This rehabilitation project is the second of multiple projects that will be conducted in the Shelby Park Rehabilitation project area. The area evaluated for rehabilitation included approximately 57,000 linear feet of gravity sewer and 330 manholes. The resulting construction project consists of cured-in-place pipe lining of approximately 57,000 linear feet of gravity sewer, rehabilitation of associated manholes, and over 700 service renewals using cured-in-place pipe lining or open cut techniques.

Design began on July 3, 2013, and was completed in January 2014. Advertisement for construction began on February 5, 2014, and the contract was awarded in March 2014. Construction activities are anticipated to commence during the upcoming quarter.

- **Brick Church Pike Pipe Improvements**

The Brick Church Pike Pipe Improvements project, as presented in the CAP/ER, consisted of increasing the conveyance capacity of approximately 15,500 linear feet of gravity sewer. Following the analysis of additional flow monitoring conducted in the spring of 2013, the project's scope was revised to include approximately 14,000 linear feet of either increased conveyance capacity or rehabilitation in the project area. Condition assessment activities in the upstream portion of the project area, including the small diameter sewers, will be conducted in anticipation of a future rehabilitation project in the area.

Proposals for design of the pipe improvements project were submitted on January 11, 2013, and design for this project began on July 25, 2013. Design activities are anticipated to continue through the upcoming quarter.

- **Cowan / Riverside Rehabilitation – Area 2 – Dickerson Pike**

This rehabilitation project is the second of multiple projects that will be conducted in the Cowan / Riverside Rehabilitation project area. The area evaluated for rehabilitation included approximately 51,400 linear feet of gravity sewer and 290 manholes. The resulting construction project consists of cured-in-place pipe lining of approximately 42,000 linear feet of gravity sewer, rehabilitation of associated manholes, and over 400 service renewals using cured-in-place pipe lining or open cut techniques.

Design began on July 3, 2013, and was completed in March 2014. Advertisement for construction began on March 14, 2014, and a contract is anticipated to be awarded during the upcoming quarter.

- Highway 100 / Tyne Boulevard – Trimble Rehabilitation

The Highway 100 / Tyne Boulevard Pipe Improvements project, as presented in the CAP/ER, consisted of approximately 18,500 linear feet of conveyance improvements to alleviate overflows and surcharging in the existing gravity sewer. A detailed review of the existing sewer route and flows in the area indicated that rehabilitation to reduce wet weather flows in this area may be a viable option to address overflows. Because of this, the Highway 100 / Tyne Boulevard Pipe Improvements project has been delayed to allow time for the completion of the Highway 100 / Tyne Boulevard – Trimble Rehabilitation project. The area evaluated for rehabilitation included approximately 63,000 linear feet of gravity sewer and 300 manholes. The resulting construction project consists of cured-in-place pipe lining of approximately 32,000 linear feet of gravity sewer, rehabilitation of associated manholes, and approximately 170 service renewals using cured-in-place pipe lining or open cut techniques.

Design began on September 17, 2013, and was completed in March 2014. Advertisement for construction is anticipated to begin during the upcoming quarter.

- Shelby Park Rehabilitation – Area 3 – Greenland Avenue

This rehabilitation project is the third of multiple projects that will be conducted in the Shelby Park Rehabilitation project area. The area to be evaluated for rehabilitation includes approximately 49,000 linear feet of gravity sewer and 260 manholes. Design began on December 5, 2013, and is anticipated to continue through the upcoming quarter.

## 2.4 Upcoming CAP/ER Projects

The following projects, discussed in the CAP/ER, are anticipated to begin procurement for design services during the upcoming quarter:

- Davidson and Brook Hollow Sewer Improvements

The Davidson and Brook Hollow Sewer Improvements project, referred to as 622 Davidson Rehabilitation in the CAP/ER, included the evaluation of approximately 53,800 linear feet of gravity sewer and 300 manholes for rehabilitation. Additional condition assessment data, including flow monitoring and smoke testing data, has also been collected and analyzed. That analysis indicated that approximately 1,900 linear feet of sewer in this area requires upsizing in order to address the associated overflow. The project description was revised to include both the upsizing as well as repair of several adjacent pipe segments. The procurement of design services was initiated during the reporting period. Design is anticipated to begin during the upcoming quarter.

- 28<sup>th</sup> Avenue Rehabilitation – Area 1

The 28<sup>th</sup> Avenue Rehabilitation – Area 1 project is the first of multiple projects that will be conducted in the 28<sup>th</sup> Avenue Rehabilitation project area. The area to be evaluated for rehabilitation includes approximately 44,000 linear feet of gravity sewer and associated

manholes. A preliminary review of the condition assessment data collected in the project area indicated several additional locations that require dye testing and closed-circuit television (CCTV) inspection. Procurement of design services is anticipated to begin in the upcoming quarter following the completion of the additional data collection.

- Davidson Branch Equalization Facility

The Davidson Branch Equalization Facility project includes the relocation of an existing duty station and construction of a wastewater storage tank and wet weather pumping station on a property adjacent to the existing Davidson Branch Pump Station. Property acquisition, which has been ongoing for the previous 24 months, has continued throughout the reporting period. Procurement of design services is anticipated to begin in the upcoming quarter.

In addition to the projects listed above, Metro continues to conduct planning activities for multiple projects including acquiring necessary land to site facilities and collecting sewer condition assessment data.

## Section 3

### *Long Term Control Plan*

To reduce the occurrence and impact of combined sewer overflows into the Cumberland River, Metro developed an update to the *Long Term Control Plan* (LTCP), that was submitted to EPA and TDEC on September 11, 2011.

The LTCP followed EPA's *Combined Sewer Overflow Control Policy* in implementing a rigorous process for identifying and evaluating alternatives to reduce combined sewer overflows. Consideration included financial and engineering analyses to develop recommended improvements in conjunction with four key objectives that were established early in the planning process:

- Improve the water quality of the Cumberland River by reducing impacts from combined sewer overflows
- Provide a level of CSO control that results in improvements in water quality that are consistent with the community's use of the Cumberland River
- Align investment in CSO controls to be commensurate with the contribution of CSOs to water quality relative to other sources
- Consider the impact of the overall program cost on the ratepayers in the current economic climate

These goals and objectives were developed based on feedback provided by representatives from MWS, local government, and the community through a public engagement campaign developed to solicit input from affected stakeholders.

Metro continues to work with EPA and TDEC to address preliminary feedback on the LTCP. Metro has provided additional information pertaining to the proposed LTCP's compliance with Tennessee's water quality criteria, including additional modeling data that assessed the impact of CSO discharges on the Cumberland River. Additional modeling analyses, including updated CORMIX modeling, have been conducted for the Washington CSO location. Discussions have been on-going throughout the reporting period and are expected to continue through the upcoming quarter.

As review of the LTCP continues, Metro continues to move forward with the implementation of several projects presented in the LTCP. These projects are described in the following subsections, and a schedule illustrating current and upcoming work on LTCP projects is presented as Appendix A.

#### 3.1 Completed LTCP Projects

The following projects, discussed in the LTCP, were completed prior to the start of the reporting period:

- Broadway Improvements
- Washington CSO Facility Improvements

- Van Buren Improvements
- Driftwood Equalization Basin Expansion

## 3.2 LTCP Projects under Construction

The following project, discussed in the LTCP, was under construction during the reporting period:

- Apex Sewer Corrections

The Apex Sewer Corrections project consists of the installation of approximately 700 linear feet of new gravity sewer and the rehabilitation of approximately 2,300 linear feet of existing gravity sewer in the Washington CSO basin.

Design began on March 25, 2013, and was completed in September 2013. Advertisement for construction began on October 31, 2013, and the contract was awarded in December 2013. Construction activities began on February 10, 2014, and are anticipated to continue throughout the upcoming quarter.

## 3.3 LTCP Projects under Design

There are currently no LTCP projects under design.

## 3.4 Upcoming LTCP Projects

No additional LTCP projects are anticipated to begin design until comments on the LTCP are received from EPA and TDEC.

Work is nearing completion on the Central Wastewater Treatment Plant Optimization Study which will determine the maximum capacity for secondary treatment that can be achieved without constructing additional aeration basins or clarifiers. In order to achieve the maximum capacity, certain enhancements to the facility will be required, such as replacing the aeration system, modifying the disinfection process, and addressing hydraulic deficiencies. It is anticipated that this study will be completed during the upcoming quarter; however, additional analyses regarding the impacts of this study on the proposed improvements in the LTCP are expected to continue through early 2014.

## Section 4

# Additional Measures to Maintain Consent Decree Compliance

In addition to the CAP/ER and LTCP projects described in the previous sections, the measures described in the following subsections are related to Metro's on-going Consent Decree compliance.

### 4.1 2013 Annual Sewer Rehabilitation

Design of the 2013 Annual Sewer Rehabilitation project commenced on June 23, 2013, and is anticipated to be completed during the upcoming quarter. For this project, which extends throughout the Metro service area, approximately 150 pipe segments have been identified for repair or rehabilitation. These sewers are located in areas outside of CAP/ER rehabilitation areas and are classified as high-priority or medium-priority sewers for evaluation based upon their observed condition as well as their potential consequence of failure.

## Section 5

# Quarterly SSO and Dry Weather CSO Report

During the 1<sup>st</sup> Quarter of 2014, Metro experienced 136 SSOs, as listed in **Table 5-1**.

No dry-weather CSOs occurred during the reporting period.



Table 5-1 Quarterly SSO Report

Quarterly SSO Report January 1 through March 31, 2014									
Event Start Date	Event End Date	Rainfall (inches)	Duration (hours)	Overflow Volume (MG)	Overflow Cause	Location Manhole ID	Location	Unpermitted Discharge	Building Backup
04-Jan-14	04-Jan-14	0.00	1.50	0.0001	Blockage	16106067	509 Tobylynn Dr.	Yes	No
06-Jan-14	06-Jan-14	0.00	2.75	0.0001	Blockage	11709079	14 Foxhall Close	No	No
10-Jan-14	10-Jan-14	0.04	1.50	0.0001	Blockage	14501026	5600 Stanford Ct. S.	No	No
11-Jan-14	11-Jan-14	0.91	1.50	0.005	Rainfall	01416001	Joelton SPS	Yes	No
11-Jan-14	11-Jan-14	0.97	3.67	0.016	Rainfall	10210012	Davidson Branch SPS	Yes	No
11-Jan-14	11-Jan-14	0.97	3.42	0.336	Controller	08410007	149 Barker Rd.	Yes	No
11-Jan-14	11-Jan-14	0.99	1.00	0.0001	Blockage	15005001CO	448 Owendale Dr.	No	No
11-Jan-14	11-Jan-14	1.08	0.58	0.019	Rainfall	07114041	Cowan St. SPS	Yes	No
11-Jan-14	11-Jan-14	1.09	8.00	0.3	Rainfall	05216026	Neely's Bend SPS	Yes	No
12-Jan-14	12-Jan-14	0.00	0.75	0.0001	Blockage	11908012	429 East Thompson Ln.	No	No
12-Jan-14	12-Jan-14	0.00	0.75	0.00001	Blockage	08207120	590 Joseph Ave.	No	No
13-Jan-14	14-Jan-14	0.87	7.75	0.721	Controller	08410007	149 Barker Rd.	Yes	No
13-Jan-14	15-Jan-14	1.17	36.50	1.5	Rainfall	05216026	Neely's Bend SPS	Yes	No
14-Jan-14	14-Jan-14	0.65	0.50	0.05	Other	10203057	Cleeces Ferry SPS	Yes	No
14-Jan-14	14-Jan-14	0.00	0.75	0.001	Blockage	06101025	575 Joyce Ln.	Yes	No
15-Jan-14	16-Jan-14	0.00	2.75	0.001	Blockage	13414039	5000 Harding Pl.	Yes	No
16-Jan-14	16-Jan-14	0.02	2.50	0.001	Blockage	13414039	5000 Harding Pl.	No	No
17-Jan-14	17-Jan-14	0.00	3.00	0.001	Blockage	05303062	505 15th St.	Yes	No
22-Jan-14	22-Jan-14	0.00	0.75	0.001	Blockage	04101021	5001 Cobblestone Creek Dr.	Yes	No
25-Jan-14	25-Jan-14	0.00	1.50	0.001	Blockage	08102062	2233 24th Ave. N.	Yes	No
26-Jan-14	26-Jan-14	0.00	1.50	0.0001	Blockage	13312061	217 Brevard Ct.	Yes	No
30-Jan-14	30-Jan-14	0.00	2.25	0.001	Blockage	09315058	76 Lafayette St.	Yes	No
30-Jan-14	30-Jan-14	0.00	2.00	0.001	Blockage	04312001	0 Rio Vista Dr.	Yes	No
30-Jan-14	30-Jan-14	0.00	0.50	0.001	Blockage	08505108	3534 Central Pk.	No	No
02-Feb-14	02-Feb-14	1.53	0.75	0.001	Blockage	09016043CO	513 Achievement Dr.	No	No
02-Feb-14	02-Feb-14	1.53	0.75	0.001	Blockage	09016043CO	521 Achievement Dr.	No	No
02-Feb-14	03-Feb-14	1.56	2.67	0.013	Rainfall	10210012	Davidson Branch SPS	Yes	No
02-Feb-14	03-Feb-14	1.79	4.17	0.064	Rainfall	07114041	Cowan St. SPS	Yes	No
03-Feb-14	03-Feb-14	1.64	1.92	0.006	Rainfall	03411009	Dry Creek SPS	Yes	No
03-Feb-14	03-Feb-14	1.64	1.00	0.02	Rainfall	05213002	Madison Heights SPS	Yes	No
03-Feb-14	03-Feb-14	1.76	1.92	0.017	Rainfall	08410007	149 Barker Rd.	Yes	No

## Quarterly SSO Report

### January 1 through March 31, 2014

Event Start Date	Event End Date	Rainfall (inches)	Duration (hours)	Overflow Volume (MG)	Overflow Cause	Location Manhole ID	Location	Unpermitted Discharge	Building Backup
03-Feb-14	03-Feb-14	1.87	2.17	0.108	Rainfall	13609002	Smith Springs SPS	Yes	No
04-Feb-14	05-Feb-14	1.87	1.50	0.1	Rainfall	17609035	Hurricane Creek SPS	Yes	No
04-Feb-14	05-Feb-14	1.88	18.91	2.015	Rainfall	13609002	Smith Springs SPS	Yes	No
04-Feb-14	05-Feb-14	2.18	2.50	0.25	Rainfall	06208003	Hidden Acres SPS	Yes	No
04-Feb-14	07-Feb-14	2.21	55.17	10.266	Rainfall	08410007	149 Barker Rd.	Yes	No
04-Feb-14	05-Feb-14	2.22	11.00	0.2	Rainfall	05213002	Madison Heights SPS	Yes	No
04-Feb-14	05-Feb-14	2.22	3.50	0.03	Rainfall	09506004	Mill Creek SPS	Yes	No
04-Feb-14	05-Feb-14	2.24	16.34	4.923	Rainfall	09105090	West Park SPS	Yes	No
04-Feb-14	05-Feb-14	2.24	5.00	0.2	Rainfall	09015045	Sunliner SPS	Yes	No
04-Feb-14	05-Feb-14	2.24	2.75	0.2	Rainfall	16002032	South Oak Hill SPS	Yes	No
04-Feb-14	05-Feb-14	2.24	21.50	1.571	Rainfall	09011002	516 Basswood Dr.	Yes	No
04-Feb-14	04-Feb-14	2.27	4.50	0.1	Rainfall	10203057	Cleeces Ferry SPS	Yes	No
04-Feb-14	04-Feb-14	2.29	11.00	0.5	Rainfall	08709040	Farmingham Woods SPS	Yes	No
04-Feb-14	05-Feb-14	2.30	7.75	0.593	Rainfall	06213035	Williamson Ferry SPS	Yes	No
04-Feb-14	05-Feb-14	2.30	15.50	0.02	Rainfall	14512007	Lakeview SPS	Yes	No
04-Feb-14	05-Feb-14	2.30	24.00	8.506	Rainfall	07114041	Cowan St. SPS	Yes	No
04-Feb-14	04-Feb-14	2.31	7.00	0.15	Rainfall	WLS053A020	Langford Farms SPS	Yes	No
04-Feb-14	04-Feb-14	2.34	1.00	0.00001	Rainfall	03414007	309 Dinwiddie Dr.	No	Yes
04-Feb-14	05-Feb-14	2.34	6.00	1.396	Rainfall	03411009	Dry Creek SPS	Yes	No
04-Feb-14	05-Feb-14	2.34	21.41	1.942	Rainfall	05116016	Loves Branch SPS	Yes	No
04-Feb-14	05-Feb-14	2.34	8.66	1.145	Rainfall	05205001	Gibson Creek SPS	Yes	No
04-Feb-14	04-Feb-14	2.37	5.00	0.2	Rainfall	05216026	Neely's Bend SPS	Yes	No
04-Feb-14	05-Feb-14	2.37	10.00	0.2	Rainfall	05207007	Berwick Trail SPS / Center St.	Yes	No
04-Feb-14	05-Feb-14	2.40	11.00	0.14	Rainfall	09409003	Browns Creek SPS / Visco Dr.	Yes	No
04-Feb-14	05-Feb-14	2.41	2.75	0.029	Electrical	08101015	River Dr. SPS	Yes	No
04-Feb-14	05-Feb-14	2.41	5.75	0.65	Rainfall	09104025	28th Ave. SPS / Centennial Blvd.	Yes	No
04-Feb-14	05-Feb-14	2.44	14.25	0.05	Rainfall	01416001	Joelton SPS	Yes	No
04-Feb-14	05-Feb-14	2.45	13.00	1.262	Rainfall	04312004	Vandiver SPS	Yes	No
05-Feb-14	05-Feb-14	2.14	4.50	0.0001	Blockage	10403054	2420 Vanderbilt Pl.	No	No
05-Feb-14	06-Feb-14	2.22	23.25	0.1	Rainfall	09510050	501 Bismark Dr.	Yes	No
05-Feb-14	06-Feb-14	2.24	22.00	0.001	Rainfall	09004030	6514 Robertson Rd.	Yes	No
05-Feb-14	06-Feb-14	2.24	21.00	0.001	Rainfall	09004005	6601 Centennial Blvd.	Yes	No

## Quarterly SSO Report

### January 1 through March 31, 2014

Event Start Date	Event End Date	Rainfall (inches)	Duration (hours)	Overflow Volume (MG)	Overflow Cause	Location Manhole ID	Location	Unpermitted Discharge	Building Backup
05-Feb-14	06-Feb-14	2.30	26.50	0.001	Rainfall	07309066	2301 Cooper Ter.	Yes	No
05-Feb-14	06-Feb-14	2.30	24.00	0.001	Rainfall	08204006	889 Granada Ave.	Yes	No
05-Feb-14	06-Feb-14	2.30	27.00	0.001	Rainfall	07806012	2800 Cooper Ln.	Yes	No
05-Feb-14	06-Feb-14	2.30	24.00	0.001	Rainfall	08204007	889 Granada Ave.	Yes	No
05-Feb-14	05-Feb-14	2.39	4.75	0.001	Rainfall	05010093	3438 Briley Park Blvd. N.	No	No
05-Feb-14	05-Feb-14	2.39	4.50	0.001	Rainfall	06001013	3258 Brick Church Pk.	Yes	No
05-Feb-14	06-Feb-14	2.39	26.00	0.001	Rainfall	05911027	701 Rowan Dr.	Yes	No
05-Feb-14	06-Feb-14	2.39	26.50	0.001	Rainfall	05910048	751 Rowan Dr.	Yes	No
05-Feb-14	06-Feb-14	2.39	26.50	0.001	Rainfall	05911028	709 Rowan Dr	Yes	No
05-Feb-14	06-Feb-14	2.39	25.75	0.001	Rainfall	05010033	3414 Brick Church Pk.	Yes	No
05-Feb-14	06-Feb-14	2.39	25.75	0.001	Rainfall	05010029	3438 Briley Park Blvd N	No	No
05-Feb-14	06-Feb-14	2.39	25.50	0.001	Rainfall	05013010	3300 Briley Park Blvd S	Yes	No
05-Feb-14	05-Feb-14	2.41	2.50	0.001	Rainfall	10616031	416 Hollydale Dr.	Yes	No
05-Feb-14	05-Feb-14	2.41	0.12	0.0001	Rainfall	06903036	3916 Hydesdale Ln.	No	Yes
05-Feb-14	05-Feb-14	2.41	0.25	0.001	Rainfall	11909113	2803 Foster Ave.	Yes	No
10-Feb-14	10-Feb-14	0.00	2.00	0.0001	Blockage	11915002	2902 Mashburn Rd.	No	No
11-Feb-14	11-Feb-14	0.00	4.50	0.0001	Blockage	09302142	504 3rd Ave. N.	Yes	No
13-Feb-14	13-Feb-14	0.00	2.00	0.001	Blockage	11811023	734 Thompson Ln.	No	No
15-Feb-14	15-Feb-14	0.00	2.50	0.0001	Blockage	05307030	1801 Golf Club Ln.	Yes	No
16-Feb-14	16-Feb-14	0.00	1.50	0.00001	Blockage	09612012	518 Stewarts Ferry Pk.	No	No
16-Feb-14	16-Feb-14	0.00	4.75	0.001	Blockage	07515095	1240 Andrew Donelson Dr.	Yes	No
17-Feb-14	17-Feb-14	0.14	5.50	0.001	Blockage	08601125	3417 Lebanon Pk.	No	No
19-Feb-14	19-Feb-14	0.00	1.00	0.0001	Blockage	05201012	103 Coventry Woods Dr.	No	No
20-Feb-14	20-Feb-14	0.72	4.00	0.00001	Blockage	13515002	2330 Murfreesboro Rd.	No	No
21-Feb-14	21-Feb-14	0.00	1.50	0.00001	Blockage	15007117	3316 Town Village Rd.	Yes	No
21-Feb-14	21-Feb-14	0.00	1.25	0.001	Blockage	13511009	901 Nashboro Blvd.	Yes	No
27-Feb-14	27-Feb-14	0.00	1.15	0.001	Blockage	15005013	445 Cedarcliff Rd	No	No
02-Mar-14	03-Mar-14	2.13	18.08	1.445	Rainfall	05116016	Loves Branch SPS	Yes	No
02-Mar-14	03-Mar-14	2.13	8.00	0.2	Rainfall	05207007	Berwick Trail SPS / Center St.	Yes	No
02-Mar-14	04-Mar-14	2.26	14.00	0.001	Rainfall	09004030	6601 Centennial Blvd.	Yes	No
02-Mar-14	03-Mar-14	2.26	3.75	0.164	Rainfall	09105090	West Park SPS	Yes	No
02-Mar-14	04-Mar-14	2.26	14.00	0.001	Rainfall	09004005	6601 Centennial Blvd.	Yes	No

## Quarterly SSO Report

### January 1 through March 31, 2014

Event Start Date	Event End Date	Rainfall (inches)	Duration (hours)	Overflow Volume (MG)	Overflow Cause	Location Manhole ID	Location	Unpermitted Discharge	Building Backup
02-Mar-14	04-Mar-14	2.26	3.00	0.001	Rainfall	11507059	622 Davidson Rd.	Yes	No
02-Mar-14	03-Mar-14	2.32	8.00	0.025	Rainfall	01416001	Joelton SPS	Yes	No
02-Mar-14	03-Mar-14	2.34	7.25	0.233	Rainfall	04312004	Vandiver SPS	Yes	No
02-Mar-14	03-Mar-14	2.44	3.66	0.077	Rainfall	06213035	Williamson Ferry SPS	Yes	No
02-Mar-14	03-Mar-14	2.44	16.75	0.525	Rainfall	07114041	Cowan St. SPS	Yes	No
02-Mar-14	03-Mar-14	2.60	9.25	0.3	Rainfall	08709041	Farmingham Woods SPS	Yes	No
03-Mar-14	03-Mar-14	2.13	4.58	0.587	Rainfall	05205001	Gibson Creek SPS	Yes	No
03-Mar-14	03-Mar-14	2.13	15.00	0.6	Rainfall	05216026	Neely's Bend SPS	Yes	No
03-Mar-14	03-Mar-14	2.13	7.25	0.2	Rainfall	05213002	Madison Heights SPS	Yes	No
03-Mar-14	03-Mar-14	2.26	2.58	0.007	Rainfall	10210012	Davidson Branch SPS	Yes	No
03-Mar-14	03-Mar-14	2.26	2.50	0.05	Rainfall	10203057	Cleeces Ferry SPS	Yes	No
03-Mar-14	04-Mar-14	2.26	16.34	0.719	Rainfall	09011002	516 Basswood Dr.	Yes	No
03-Mar-14	03-Mar-14	2.44	1.50	0.001	Blockage	07303015	1719 Welcome Ln.	Yes	No
03-Mar-14	03-Mar-14	2.50	3.25	0.001	Blockage	10510005	832 Wedgewood Ave.	No	No
03-Mar-14	03-Mar-14	2.50	2.25	0.037	Rainfall	08101015	River Dr. SPS	Yes	No
03-Mar-14	03-Mar-14	2.50	2.67	0.064	Rainfall	09104025	29th Ave. SPS / Centennial Blvd.	Yes	No
03-Mar-14	03-Mar-14	2.55	2.00	0.2	Rainfall	17609035	Hurricane Creek SPS	Yes	No
03-Mar-14	04-Mar-14	2.60	16.50	0.001	Rainfall	09510050	501 Bismark Dr.	No	No
03-Mar-14	04-Mar-14	2.62	23.00	3.842	Rainfall	08410007	149 Barker Rd.	Yes	No
03-Mar-14	03-Mar-14	2.63	19.75	2.246	Rainfall	13609002	Smith Springs SPS	Yes	No
03-Mar-14	03-Mar-14	2.63	13.00	0.5	Rainfall	15110038	Longhunter Chase SPS	Yes	No
03-Mar-14	03-Mar-14	2.63	2.50	0.01	Rainfall	15008009	Towne Village SPS	Yes	No
05-Mar-14	05-Mar-14	0.00	3.00	0.001	Blockage	07303015	1719 Welcome Ln.	Yes	No
08-Mar-14	08-Mar-14	0.00	2.00	0.001	Blockage	16102005	5013 Meta Dr	Yes	No
09-Mar-14	09-Mar-14	0.00	3.75	0.0001	Blockage	15809031	2101 Old Hickory Blvd.	No	Yes
10-Mar-14	10-Mar-14	0.00	1.00	0.001	Blockage	16212014	1211 Bell Rd.	No	No
10-Mar-14	10-Mar-14	0.00	1.00	0.00001	Blockage	10616030	1086 Murfreesboro Pk.	No	Yes
13-Mar-14	13-Mar-14	0.00	1.00	0.00001	Blockage	14808061	4594 Artelia Dr.	No	Yes
13-Mar-14	13-Mar-14	0.00	3.25	0.001	Blockage	08601125	3453 Central Pk.	Yes	No
14-Mar-14	14-Mar-14	0.00	3.50	0.01	Other	08514005	Munn Rd. SPS	Yes	No
14-Mar-14	14-Mar-14	0.00	1.00	0.0001	Blockage	10507059	405 Humphreys St.	No	No
14-Mar-14	14-Mar-14	0.00	2.00	0.001	Blockage	14815022	4832 Cimarron Way	Yes	No

## Quarterly SSO Report

### January 1 through March 31, 2014

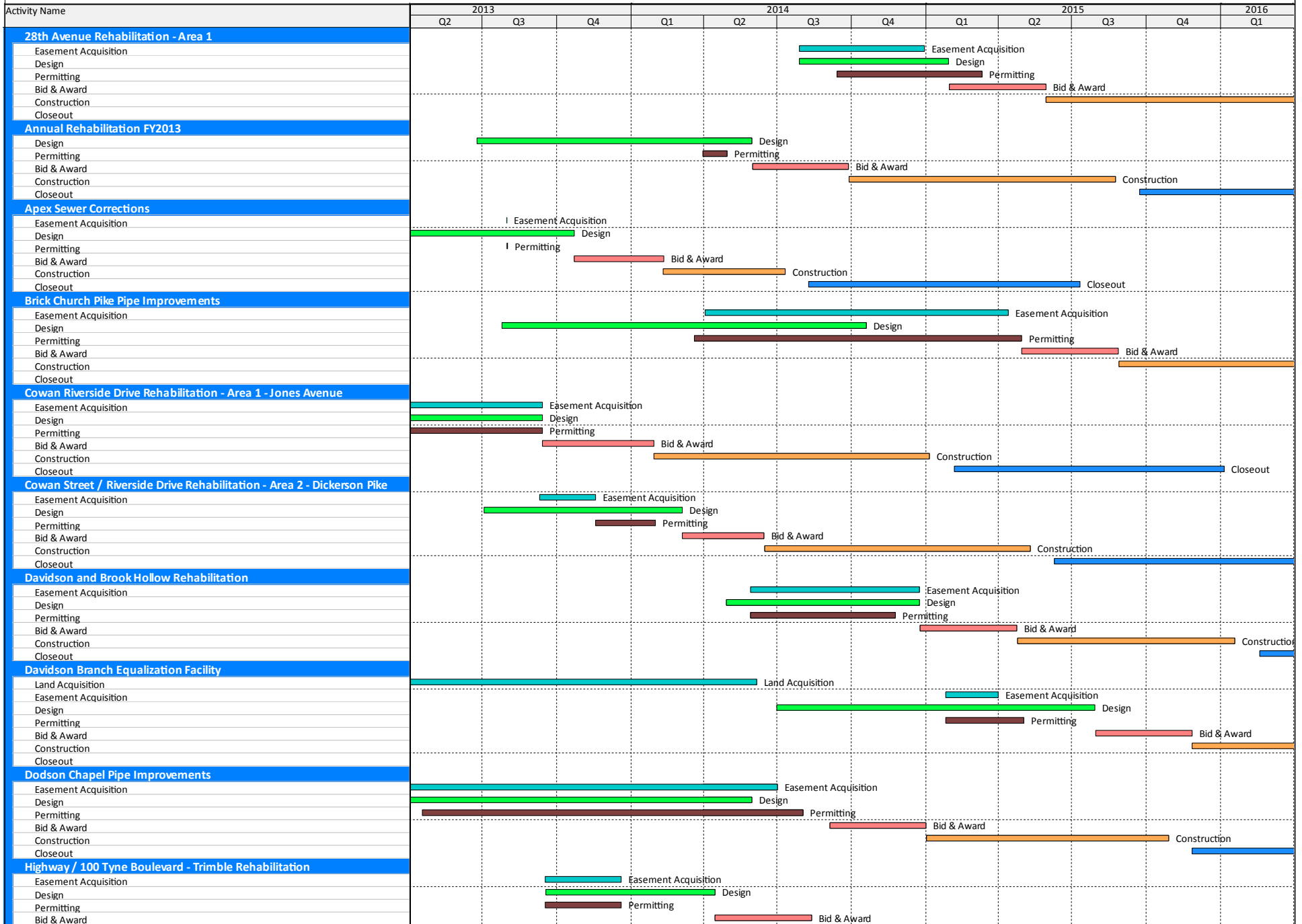
Event Start Date	Event End Date	Rainfall (inches)	Duration (hours)	Overflow Volume (MG)	Overflow Cause	Location Manhole ID	Location	Unpermitted Discharge	Building Backup
18-Mar-14	18-Mar-14	0.00	0.85	0.001	Blockage	10412109	1708 Portland Ave.	Yes	No
24-Mar-14	24-Mar-14	0.00	0.50	0.0001	Blockage	08302003	1606 Douglas Ave.	No	No
24-Mar-14	24-Mar-14	0.00	1.50	0.0001	Blockage	13611005	3644 Anderson Rd.	No	No
25-Mar-14	25-Mar-14	0.00	2.00	0.00001	Blockage	04415039	801 Bryan St.	No	Yes
26-Mar-14	26-Mar-14	0.00	0.50	0.001	Blockage	08106087	2105 26th Ave. N.	Yes	No
27-Mar-14	27-Mar-14	0.00	2.00	0.0001	Blockage	13106116	1 Burton Hills Blvd.	No	No
28-Mar-14	28-Mar-14	0.00	1.50	0.00001	Blockage	06409007	4252 Brackenwood Dr.	No	No
29-Mar-14	29-Mar-14	0.00	0.50	0.0001	Blockage	04202013	832 Fonnice Dr.	No	Yes
30-Mar-14	30-Mar-14	0.00	1.00	0.00001	Blockage	10306075CO	100 Rural Dr.	No	No

# Appendix A

## Schedule for Current and Upcoming Projects

Note: The construction activity shows through substantial completion.

## Nashville Overflow Abatement Program 2014 Quarterly Progress Report - 1st Quarter



Note: The construction activity shows through substantial completion.

## Nashville Overflow Abatement Program 2014 Quarterly Progress Report - 1st Quarter

