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MAYOR



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April 28, 2016

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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 for the first Quarter of 2016, which covers the time period from January 1, 2016 through March 31, 2016.



If you need assistance or an accommodation, please contact Metro Water Services,  
at 615-862-4862, 1600 Second Avenue North, Nashville, Tennessee 37208.

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

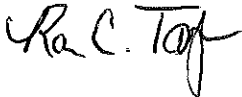
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage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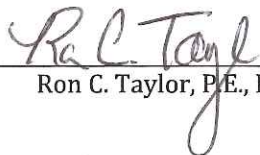
## Clean Water Nashville Overflow Abatement Program

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

# CONSENT DECREE QUARTERLY PROGRESS REPORT

**January 1 through March 31, 2016**

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

4/26/16

Date

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# 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 U.S. Environmental Protection Agency (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 conditions causing overflows in their sanitary sewer system, Metro developed a *Corrective Action Plan/Engineering Report (CAP/ER)* that was submitted to EPA and the Tennessee Department of Environment and Conservation (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
- Joelton Rehabilitation
- Neely's Bend Rehabilitation
- Shelby Park Rehabilitation – Area 1 – Virginia Avenue

- Mill Creek / Opryland Equalization Facility – Phase II
- Cowan / Riverside Rehabilitation – Area 1 – Jones Avenue
- Cowan / Riverside Rehabilitation – Area 2 – Dickerson Pike
- Highway 100 / Tyne Boulevard – Trimble Rehabilitation
- Shelby Park Rehabilitation – Area 2 – Norvel Avenue
- Dodson Chapel Pipe Improvements
- Westchester Drive Rehabilitation

## 2.2 CAP/ER Projects under Construction

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

- Lakewood Water and Sewer Replacement

This project represents the first of two phases of work in the Lakewood area. The project includes improvements to the sewer, water, and stormwater infrastructure in the Lakewood area. 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 were substantially complete on March 24, 2016.

- Shelby Park Rehabilitation – Area 3 – Greenland Avenue

This rehabilitation project is the third of multiple projects to be conducted in the Shelby Park Rehabilitation project area. The area evaluated for rehabilitation included approximately 49,000 linear feet of gravity sewer and 265 manholes. The resulting construction project consists of cured-in-place pipe lining of gravity sewer, rehabilitation of associated manholes, and renewal of more than 520 services using cured-in-place pipe lining or open-cut techniques.

Design began on December 5, 2013, and was completed in May 2014. Advertisement for construction began on August 27, 2014, and bids were received on September 25, 2014. However, a bid protest delayed award of the contract until January 22, 2015. Construction activities began on February 23, 2015, and are anticipated to be substantially complete during the upcoming quarter.

- West Park Equalization Facility Phase II

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. After additional investigation, Metro selected the adjacent park site to accommodate the required storage volume.



Design efforts for the equalization tank were restarted in the 1st Quarter of 2013. Advertisement for construction began on January 5, 2015, and the contract was awarded in April 2015. Construction activities began on April 27, 2015, and are anticipated to continue through the upcoming quarter.

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

- **Shelby Park Rehabilitation – Area 4 – Brush Hill Road**

This rehabilitation project is the fourth of multiple projects to be conducted in the Shelby Park Rehabilitation project area. The area evaluated for rehabilitation included approximately 47,400 linear feet of gravity sewer and 260 manholes. The resulting construction project consists of cured-in-place pipe lining of approximately 38,000 linear feet of gravity sewer, rehabilitation of associated manholes, and renewal of approximately 275 services using cured-in-place pipe lining or open-cut techniques.

Design began on October 27, 2014, and was completed in March 2015. Advertisement for construction began on April 28, 2015, and the contract was awarded in July 2015. Construction activities began on July 27, 2015, and are anticipated to continue through the upcoming quarter.

- **Davidson and Brook Hollow Sewer Improvements**

The Davidson and Brook Hollow Sewer Improvements project, referred to as the 622 Davidson Rehabilitation in the CAP/ER, included the evaluation for rehabilitation of approximately 53,800 linear feet of gravity sewer and 300 manholes. 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. This project now includes both the upsizing as well as the rehabilitation of approximately 400 linear feet of adjacent sewer lines.

Design began on April 24, 2014, and was completed in December 2014. Permitting and easement activities have also been completed. Advertisement for construction began on July 7, 2015, and the contract was awarded in September 2015. Construction activities began on October 5, 2015, and are anticipated to continue through the upcoming quarter.

- **Cowan / Riverside Rehabilitation – Area 3 – West Trinity Lane**

This rehabilitation project is the third of multiple projects to be conducted in the Cowan / Riverside Rehabilitation project area. The area evaluated for rehabilitation included approximately 48,100 linear feet of gravity sewer and 260 manholes. The resulting construction project consists of cured-in-place pipe lining of approximately 34,000 linear feet of gravity sewer, rehabilitation of associated manholes, and renewal of approximately 350 services using cured-in-place pipe lining or open-cut techniques.

Design began on November 17, 2014, and was completed in April 2015. Advertisement for construction began on July 20, 2015. Construction activities began on October 6, 2015, and are anticipated to continue through the upcoming quarter.

- Smith Springs Rehabilitation – Area 1 – Priest Lake Meadows

The Smith Springs Rehabilitation – Area 1 – Priest Lake Meadows project is the first of multiple rehabilitation projects to be conducted upstream of the Smith Springs Pump Station. Based on additional flow monitoring data, the boundary of the project area, as presented in the CAP/ER, has been adjusted to target areas that are believed to contribute to higher wet weather flows. The area evaluated for rehabilitation included approximately 63,800 linear feet of gravity sewer and associated manholes. The resulting construction project consists of cured-in-place pipe lining of approximately 33,000 linear feet of gravity sewer, the rehabilitation of associated manholes, and the renewal of approximately 490 services using cured-in-place pipe lining or open-cut techniques.

Design began on February 2, 2015, and was completed in September 2015. Advertisement for construction began on October 22, 2015, and the contract was awarded in January 2016. Construction activities began on February 8, 2016, and are anticipated to continue through 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:

- 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 10,000 linear feet of pipe replacement to increase the sewer's conveyance capacity and approximately 3,800 linear feet of rehabilitation of the existing sewer. The rehabilitation portion was advertised as a separate construction project, the Westchester Drive Rehabilitation project described in the previous section.

Proposals for design of the Brick Church Pipe Improvements project were submitted on January 11, 2013, and design for this project began on July 25, 2013. Design activities for the Brick Church Pipe Improvements are complete, pending final easement activities. Advertisement for construction is scheduled to begin during the upcoming quarter; however, this is dependent upon obtaining the necessary easements.

- Cowan / Riverside Rehabilitation – Area 4 – Pages Branch

This rehabilitation project is the fourth of multiple projects to be conducted in the Cowan / Riverside Rehabilitation project area. The area evaluated for rehabilitation originally included approximately 54,200 linear feet of gravity sewer. Design began on January 26, 2015, and was completed in August 2015.

Please note that, for the construction phase, this project has merged with the Cowan / Riverside Rehabilitation – Area 5 – Youngs Lane project, which consisted of the evaluation of approximately 57,800 linear feet of gravity sewer. The resulting construction project consists of the rehabilitation of approximately 44,550 linear feet of 8- to 30-inch gravity sewer, associated manholes, and service connections. The merged project will retain the Cowan / Riverside Rehabilitation – Area 4 – Pages Branch name. Advertisement for

construction began on February 25, 2016, and the bid and award period is anticipated to continue during the upcoming quarter. Construction is anticipated to begin during the 3<sup>rd</sup> Quarter.

- 28th Avenue Rehabilitation – Area 1 – Clifton Avenue

The 28th Avenue Rehabilitation – Area 1 – Clifton Avenue project is the first of multiple projects to be conducted in the 28th Avenue Rehabilitation project area. The area evaluated for rehabilitation included 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 locations that required dye testing and closed-circuit television (CCTV) inspection, which was completed prior to design. The resulting construction project consists of cured-in-place pipe lining of approximately 29,000 linear feet of gravity sewer, the rehabilitation of associated manholes, and the renewal of approximately 170 services using cured-in-place pipe lining or open-cut techniques.

Design began on February 2, 2015, and was completed in December 2015. Advertisement for construction began on January 12, 2016, and bids were received on February 18, 2016. Construction activities are anticipated to begin during the upcoming quarter.

- Davidson Branch Pump Station and Equalization Facility

The Davidson Branch Pump Station and Equalization Facility project, referred to as the Davidson Branch Equalization Storage project in the CAP/ER, 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. Design began on May 1, 2015, and is anticipated to continue through the upcoming quarter.

- Gibson Creek Rehabilitation – Area 1 – Dupont Avenue

The Gibson Creek Rehabilitation – Area 1 – Dupont Avenue project is the first of multiple rehabilitation projects to be conducted upstream of the Gibson Creek Pump Station. The area evaluated for rehabilitation included approximately 57,000 linear feet of gravity sewer and associated manholes. This project also includes the repair of approximately 30 manholes in the Jocelyn Hollow area. Design began on July 1, 2015, and is anticipated to be completed during the upcoming quarter.

- Ewing Creek / Brick Church Equalization Facility

The Ewing Creek / Brick Church Equalization Facility project, referred to as the Brick Church Pike Equalization Facility project in the CAP/ER, includes the construction of a 10.6 million gallon wastewater storage tank and associated wet weather pumping station. Design began on August 31, 2015, and is anticipated to continue throughout the upcoming quarter.

- Langford Farms – Madison Heights Rehabilitation

Due to their relatively small sizes, the Langford Farms Rehabilitation and Madison Heights / Rainbow Terrace Rehabilitation projects described in the CAP/ER are being combined into a single design and construction project, the Langford Farms – Madison Heights Rehabilitation project. The new project includes the areas located upstream of the Langford

Farms, Madison Heights, and Rainbow Terrace Pump Stations. The total area to be evaluated for rehabilitation includes approximately 19,300 linear feet of gravity sewer and more than 100 manholes. Design began on February 24, 2016, and is anticipated to continue during the upcoming quarter.

- Smith Springs Rehabilitation – Area 2 – Castlegate

The Smith Springs Rehabilitation – Area 2 – Castlegate project is the second of multiple rehabilitation projects that will be conducted upstream of the Smith Springs Pump Station. The area to be evaluated for rehabilitation includes approximately 58,900 linear feet of gravity sewer and more than 300 manholes. Design began on February 15, 2016, and is anticipated to continue during the upcoming quarter.

## 2.4 Upcoming CAP/ER Projects

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

- Hurricane Creek Pipe Improvements

The Hurricane Creek Pipe Improvements project, as presented in the CAP/ER, consisted of increasing the conveyance capacity of approximately 7,800 linear feet of gravity sewer to meet Metro’s capacity assurance requirements. Following the analysis of additional flow monitoring conducted in the spring of 2015, the project’s scope was revised to include the design of parallel and/or replacement gravity sewers for approximately 12,100 linear feet of existing trunk sewer. Procurement of design services was initiated during the reporting period, and design is anticipated to begin during the upcoming quarter.

- Gibson Creek Equalization Facility

The Gibson Creek Equalization Facility project, as presented in the CAP/ER, consists of the design and construction of a 10 million gallon wastewater storage tank and associated wet weather pumping station. Land acquisition and planning activities are underway, and procurement of design services was initiated during the reporting period. Design is anticipated to begin during the 3<sup>rd</sup> Quarter.

- Shelby Park Rehabilitation – Area 5 – Cooper Lane

This rehabilitation project is the fifth of multiple projects to be conducted in the Shelby Park Rehabilitation project area. The area to be evaluated for rehabilitation includes approximately 52,200 linear feet of gravity sewer and 270 manholes. Procurement of design services was initiated during the reporting period, and design is anticipated to begin during 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 a memorandum summarizing additional data describing the impact of CSO discharges on water quality in the Cumberland River. Discussions are expected to continue through the upcoming quarter.

As review of the LTCP continues, Metro continues to move forward with the implementation of the Central WWTP Capacity Improvements and CSO Reduction project; however, Metro does not intend to move forward with other projects presented in the LTCP until approval is obtained. Active 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
- Apex Sewer Corrections

## 3.2 LTCP Projects under Construction

There are currently no LTCP projects under construction.

## 3.3 LTCP Projects under Design

The following project, discussed in the LTCP, is anticipated to continue design services during the upcoming quarter:

- Central WWTP Capacity Improvements and CSO Reduction, A and B

The Central WWTP Capacity Improvements and CSO Reduction project will reduce the overflow frequency and volume from the Kerrigan CSO by increasing both the wet weather treatment capacity of the Central WWTP and the overall capacity of the Central Pumping Station. The project will also add on-site CSO storage and equalization to assist in managing the dramatic flow rate increases from the combined sewer system during intense rainfall events. This project is the result of the Central Wastewater Treatment Plant Optimization Study which was completed in 2014. The study identified limiting factors in each of the Central WWTP's unit processes and confirmed that peak wet weather secondary treatment capacity could be significantly increased through upgrades to the existing headworks, secondary aeration, and final clarification systems without building new tankage. As such, this project replaces the following projects presented in the LTCP:

- CWWTP Optimization and EQ Conversion
- CWWTP EQ Addition Phase 1
- CWWTP Pumps / EQ Grit Equipment
- CWWTP EQ Addition Phase 2
- CWWTP EQ Addition Phase 3

Advertisement for design services for the Central WWTP Capacity Improvements and CSO Reduction project began in January 2015, and two design contracts (A and B) were awarded in April 2015. Following contract negotiations and other designer procurement activities, design activities for both contracts began on September 21, 2015, and are anticipated to continue throughout the upcoming quarter.

During the reporting period, Metro initiated the procurement of a Construction Manager at Risk to provide pre-construction services during the design phase and to act as the general contractor during the construction phase of this project. Advertisement for the Construction Manager at Risk began on February 22, 2016, and the selection process is anticipated to continue through the upcoming quarter.

Metro has also identified a component of the Central WWTP Capacity Improvements and CSO Reduction project, the Sludge Transfer Facility, to proceed with detailed design prior to the awarding of the contract for the Construction Manager at Risk. This project is a retrofit of an existing maintenance building to serve as a new sludge transfer facility, including new screens, washer / compactors, mixers, sludge transfer pumps, and electrical improvements. The initiation of design was authorized by Metro and is anticipated to continue through the upcoming quarter.

### 3.4 Upcoming LTCP Projects

There are currently no LTCP projects anticipated to begin design in the upcoming quarter.

## 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 was completed in June 2014. Advertisement for construction began on July 8, 2014, and the contract was awarded in September 2014. Construction activities began on October 15, 2014, and were substantially complete on January 8, 2016. 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.

### 4.2 2014 Annual Rehabilitation – Whites Creek Trunk

The 2014 Annual Rehabilitation – Whites Creek Trunk project consisted of evaluation and rehabilitation of the trunk sewer that follows or is adjacent to Whites Creek. The area evaluated for rehabilitation included approximately 55,800 linear feet of gravity sewer, ranging in diameter from 8 to 60 inches. These sewers are located outside of CAP/ER rehabilitation areas and are classified as high-priority sewers for evaluation due to observations of infiltration. Design began on October 13, 2014, and was completed in May 2015. Advertisement for construction began on September 3, 2015, and the contract was awarded in November 2015. Construction activities began on January 4, 2016, and are anticipated to continue through the upcoming quarter.

Due to its size, the 2014 Annual Rehabilitation – Whites Creek Trunk project required the use of two years of annual rehabilitation funding, and as such, no 2015 Annual Rehabilitation project is planned.

### 4.3 2016 Annual Rehabilitation – South Hurricane Creek

The 2016 Annual Rehabilitation – South Hurricane Creek project consists of the evaluation and rehabilitation of the approximately 53,400 linear feet of gravity sewer, ranging in diameter from 8 to 18 inches. These sewers are located outside of CAP/ER rehabilitation areas and are classified as high priority sewers for evaluation due to observations of infiltration. Procurement of design services was conducted during the reporting period, and design began on March 28, 2016. Design is anticipated to continue during the upcoming quarter.



## Section 5

# Quarterly SSO and Dry Weather CSO Report

During the 1<sup>st</sup> Quarter of 2016, Metro experienced 63 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, 2016									
Event Start Date	Event End Date	Rainfall (inches)	Duration (hours)	Overflow Volume (MG)	Overflow Cause	Location Manhole ID	Location	Unpermitted Discharge	Building Backup
03-Jan-16	03-Jan-16	0.00	1.50	0.0001	Blockage	13312073	3850 Scotwood Dr	Yes	No
04-Jan-16	04-Jan-16	0.00	1.00	0.00001	Blockage	16407029	1417 Rockglade Run	Yes	No
08-Jan-16	08-Jan-16	0.15	4.00	0.001	Blockage	06909009	550 Brick Church Park Dr	No	No
10-Jan-16	11-Jan-16	0.29	4.00	0.001	Blockage	10411103	2512 Essex Pl	Yes	No
11-Jan-16	11-Jan-16	0.00	4.00	0.001	Force Main	01203028	1277 Springfield Hwy	Yes	No
16-Jan-16	16-Jan-16	0.00	1.00	0.0001	Blockage	16206116	156 Tusculum Rd	Yes	No
17-Jan-16	17-Jan-16	0.00	2.50	0.0001	Blockage	09114099	242 Orlando Ave	Yes	No
17-Jan-16	17-Jan-16	0.00	1.00	0.001	Blockage	WMN056J012	2101 Sister Ct	Yes	No
18-Jan-16	18-Jan-16	0.00	4.00	0.001	Blockage	06401014	601 Brandywine Village Ct	Yes	No
21-Jan-16	21-Jan-16	0.89	12.00	0.001	Blockage	16206125	616 Roxanne Dr / 161 Ocala Dr	No	No
25-Jan-16	26-Jan-16	0.14	11.00	0.001	Blockage	16206144	561 Brookview Estates Dr	No	No
26-Jan-16	26-Jan-16	0.10	0.25	0.005	Mechanical	10210012	Davidson Branch SPS	Yes	No
29-Jan-16	29-Jan-16	0.00	0.50	0.0001	Blockage	08303036	898 Porter Rd	Yes	No
30-Jan-16	30-Jan-16	0.00	0.50	0.00001	Blockage	10505032	1713 15th Ave S	No	No
02-Feb-16	03-Feb-16	1.75	14.92	1.205	Rainfall	10210012	Davidson Branch SPS	Yes	No
02-Feb-16	03-Feb-16	2.06	4.00	0.08	Rainfall	10203057	Cleeces Ferry SPS	Yes	No
02-Feb-16	03-Feb-16	2.12	11.75	0.06	Rainfall	08012012	Bordeaux Hills SPS	Yes	No
02-Feb-16	03-Feb-16	2.12	11.75	0.2	Rainfall	07008061	Riverside Drive SPS	Yes	No
02-Feb-16	03-Feb-16	2.06	2.50	0.1	Rainfall	09015045	Sunliner SPS	Yes	No
02-Feb-16	03-Feb-16	2.87	6.50	0.02	Rainfall	01416001	Joelton SPS	Yes	No
02-Feb-16	03-Feb-16	1.58	7.17	0.532	Rainfall	07114041	Cowan St. SPS	Yes	No
03-Feb-16	03-Feb-16	1.41	1.00	0.001	Blockage	04313084CO	335 Forest Park Dr	Yes	No
03-Feb-16	03-Feb-16	1.51	17.50	0.001	Rainfall	11516063	6215 Jocelyn Hollow Rd	Yes	No
03-Feb-16	03-Feb-16	1.78	14.00	0.01	Rainfall	05010033	3414 Brick Church Pk	Yes	No
03-Feb-16	03-Feb-16	1.41	3.33	0.126	Rainfall	05116016	Love Branch SPS	Yes	No
03-Feb-16	03-Feb-16	1.41	2.50	0.37	Rainfall	05205001	Gibson Creek SPS	Yes	No

## Quarterly SSO Report

### January 1 through March 31, 2016

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-16	03-Feb-16	1.73	4.33	0.404	Rainfall	09104025	28th Ave SPS / Centennial Blvd	Yes	No
03-Feb-16	03-Feb-16	1.65	21.00	0.3	Rainfall	16009013	East Lakemont SPS	Yes	No
03-Feb-16	03-Feb-16	1.75	2.58	0.026	Rainfall	09011002	516 Basswood Ave	Yes	No
03-Feb-16	03-Feb-16	1.16	5.83	0.058	Rainfall	08410007	149 Barker Rd	Yes	No
03-Feb-16	03-Feb-16	1.78	14.00	0.02	Rainfall	05010029	3438 Briley Park Blvd N	Yes	No
03-Feb-16	03-Feb-16	1.78	14.00	0.17	Rainfall	05013010	3300 Briley Park Blvd S	Yes	No
03-Feb-16	03-Feb-16	1.16	12.00	0.05	Rainfall	09510050	501 Bismark Dr	Yes	No
10-Feb-16	10-Feb-16	0.01	14.00	0.001	Force Main	08709001	4845 Myra Dr	No	No
15-Feb-16	16-Feb-16	1.96	17.08	0.896	Rainfall	10210012	Davidson Branch SPS	Yes	No
15-Feb-16	17-Feb-16	2.17	31.00	0.45	Rainfall	08410007	149 Barker Rd	Yes	No
15-Feb-16	16-Feb-16	2.21	5.17	0.052	Rainfall	07114041	Cowan St. SPS	Yes	No
17-Feb-16	19-Feb-16	2.31	45.51	20.498	Rainfall	03411009	Dry Creek SPS	Yes	No
20-Feb-16	20-Feb-16	0.00	7.00	0.001	Blockage	05008005	3502 Dickerson Rd	Yes	No
22-Feb-16	22-Feb-16	0.01	3.00	0.00001	Blockage	10512035	342 Herron Dr	No	No
24-Feb-16	24-Feb-16	1.12	0.50	0.001	Blockage	09310147	200 4th Ave S	Yes	No
27-Feb-16	27-Feb-16	0.00	5.00	0.001	Blockage	WMN030K025	1590 Red Oak Ln	Yes	No
28-Feb-16	28-Feb-16	0.00	1.50	0.00001	Blockage	12911054	802 Marquette Dr	No	No
29-Feb-16	29-Feb-16	0.00	3.00	0.001	Blockage	10401121	3510 Wrenwood Dr	No	No
01-Mar-16	01-Mar-16	0.25	1.00	0.001	Blockage	09308057	601 Crutcher St	Yes	No
05-Mar-16	05-Mar-16	0.00	1.50	0.00001	Blockage	WMN033G019	108 Ridgewood Pl	No	No
06-Mar-16	06-Mar-16	0.00	1.50	0.001	Blockage	13615007	2999 Smith Springs Rd	Yes	No
08-Mar-16	08-Mar-16	0.00	1.00	0.00001	Blockage	09615029	3119 Laurel Forest Dr	No	No
08-Mar-16	08-Mar-16	0.00	1.00	0.001	Blockage	14907020	5161 Rice Rd	Yes	No
10-Mar-16	11-Mar-16	0.63	20.00	0.0001	Force Main	WMN033B023	145 Forest Trail	No	No
13-Mar-16	13-Mar-16	1.09	1.00	0.001	Blockage	16210004	636 Brook Dr	Yes	No
13-Mar-16	13-Mar-16	0.81	8.00	0.04	Rainfall	08012012	Bordeaux Hills SPS	Yes	No
13-Mar-16	14-Mar-16	0.99	10.00	0.15	Rainfall	16009013	East Lakemont SPS	Yes	No

## Quarterly SSO Report January 1 through March 31, 2016

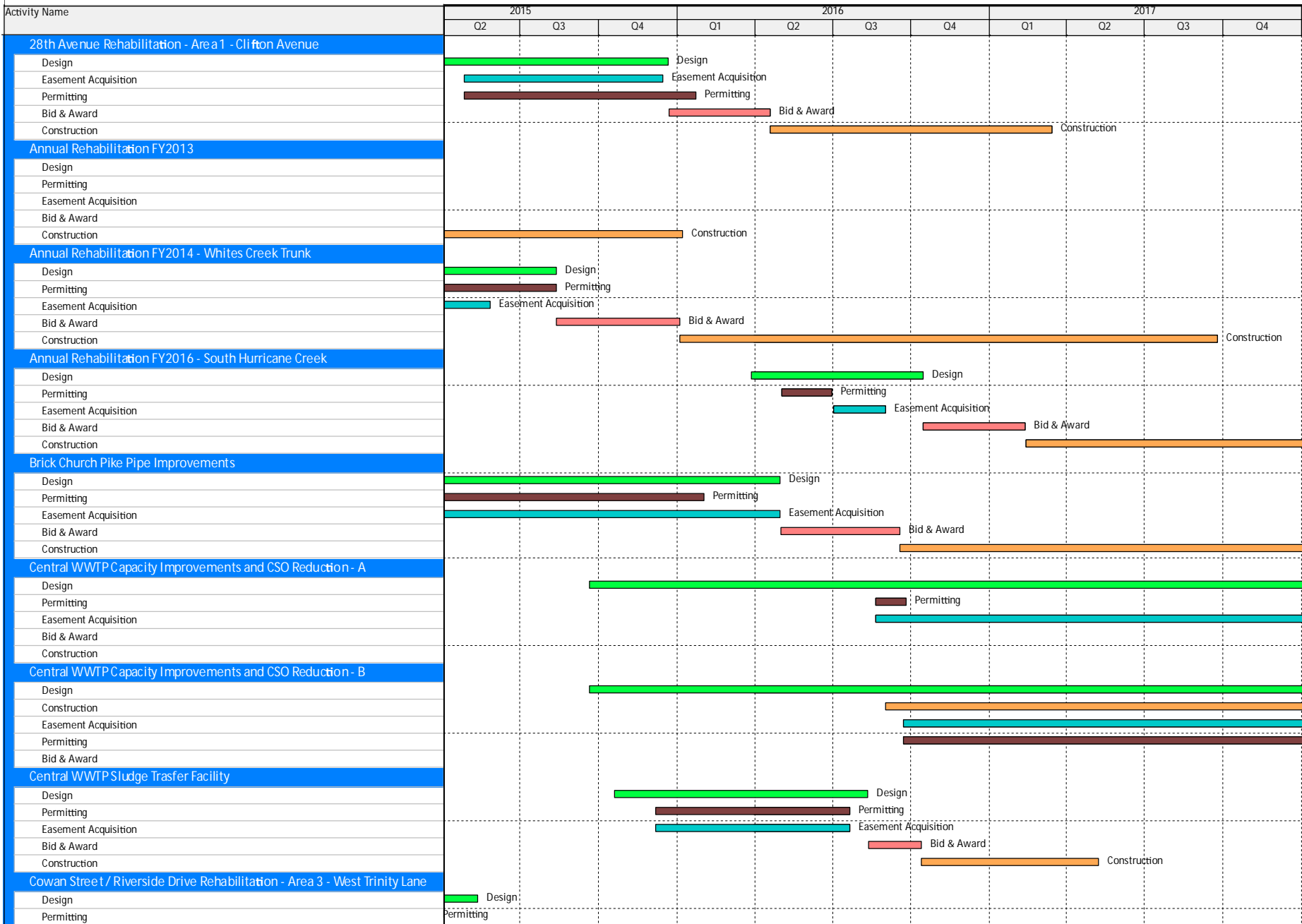
Event Start Date	Event End Date	Rainfall (inches)	Duration (hours)	Overflow Volume (MG)	Overflow Cause	Location Manhole ID	Location	Unpermitted Discharge	Building Backup
13-Mar-16	14-Mar-16	0.44	8.84	0.246	Blockage	08410007	149 Barker Rd	Yes	No
13-Mar-16	13-Mar-16	1.02	9.00	0.08	Rainfall	09510050	501 Bismark Dr	Yes	No
14-Mar-16	14-Mar-16	0.76	3.00	0.001	Blockage	16102001	5009 Meta Dr	Yes	No
16-Mar-16	17-Mar-16	0.00	24.00	0.0001	Force Main	WMN033B008	101 Forest Trail	Yes	No
17-Mar-16	17-Mar-16	0.00	2.00	0.00001	Blockage	17415030	1448 O'Hara Dr	No	No
18-Mar-16	18-Mar-16	0.00	0.50	0.0001	Blockage	10402099CO	113 30th Ave N	No	No
18-Mar-16	18-Mar-16	0.00	1.00	0.0001	Force Main	WMN033B028	6718 Quiet Ln	Yes	No
21-Mar-16	21-Mar-16	0.00	9.00	0.0001	Line Break	05201086	800 Idlewild Dr	No	No
25-Mar-16	25-Mar-16	0.00	1.50	0.0001	Blockage	08008046	1490 County Hospital Rd	No	No
27-Mar-16	27-Mar-16	0.18	0.50	0.1	Controller	17609001	Hurricane Creek SPS	Yes	No

# Appendix A

## Schedule for Current and Upcoming Projects

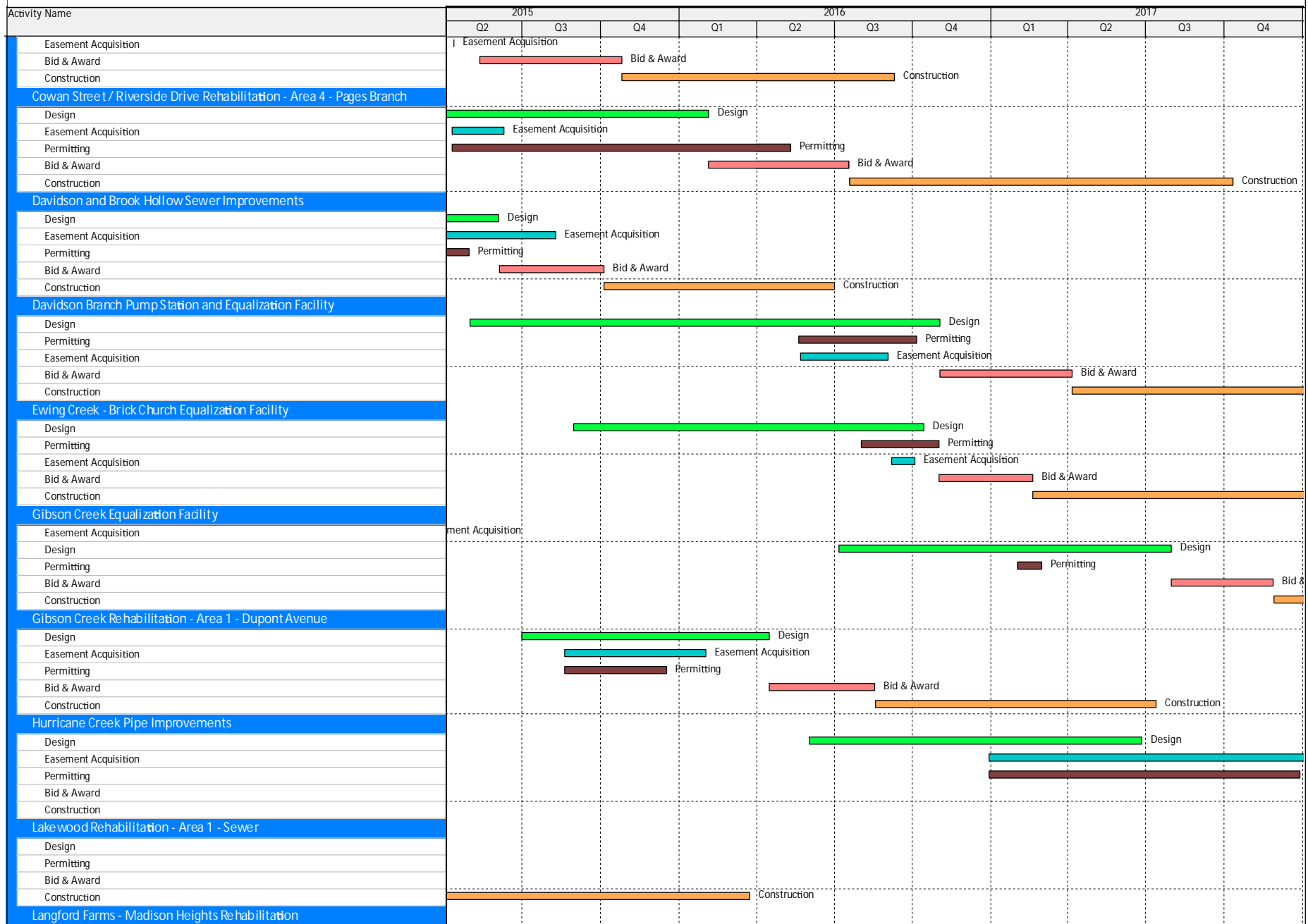
Note: The construction activity shows through substantial completion.

## Nashville Overflow Abatement Program 2016 Quarterly Progress Report - 1st Quarter



Note: The construction activity shows through substantial completion.

## Nashville Overflow Abatement Program 2016 Quarterly Progress Report - 1st Quarter



Note: The construction activity shows through substantial completion.

## Nashville Overflow Abatement Program 2016 Quarterly Progress Report - 1st Quarter

