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MAYOR

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January 27, 2017

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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 2016 Annual Report, which covers the time period from January 1, 2016 through December 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.

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, 2016 through December 31, 2016.

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
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

October 1 through December 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

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

1/26/17

Date

cleanwater NASHVILLE
OVERFLOW ABATEMENT PROGRAM

Table of Contents

Section 1 Introduction 1-1

1.1 Additional Programs 1-1
1.2 Report Organization 1-2

Section 2 *Corrective Action Plan/Engineering Report* 2-1

2.1 Completed CAP/ER Projects 2-1
2.2 CAP/ER Projects under Construction 2-2
2.3 CAP/ER Projects under Design 2-4
2.4 Upcoming CAP/ER Projects 2-7

Section 3 *Long Term Control Plan* 3-1

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 3-3

Section 4 Additional Measures to Maintain Consent Decree Compliance 4-1

4.1 2014 Annual Rehabilitation – Whites Creek Trunk 4-1
4.2 2016 Annual Rehabilitation – South Hurricane Creek 4-1
4.3 2017 Annual Rehabilitation – Dry Creek 4-1

Section 5 Quarterly SSO and Dry Weather CSO Report 5-1

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 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 mulitple 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
- Lakewood Water and Sewer Replacement
- Shelby Park Rehabilitation – Area 3 – Greenland Avenue
- Shelby Park Rehabilitation – Area 4 – Brush Hill Road
- Davidson and Brook Hollow Sewer Improvements
- Cowan / Riverside Rehabilitation – Area 3 – West Trinity Lane

2.2 CAP/ER Projects under Construction

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

- 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.

- 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 be substantially complete in the upcoming 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 began on April 18, 2016, and are anticipated to continue through 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 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, which was completed in 2015.

  Design activities for the Brick Church Pipe Improvements began on July 25, 2013, and were completed in April 2015, although easement activities continued through much of 2016. Advertisement for construction began on May 12, 2016, and bids were received on June 28, 2016. Construction activities began on August 16, 2016, and are anticipated to continue through the upcoming quarter.

- 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 proposals were received on April 19, 2016. Construction activities began on August 22, 2016, and are 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. The resulting construction project consists of cured-in-place pipe lining of approximately 35,000 linear feet of gravity sewer, the rehabilitation of associated manholes, and the renewal of approximately 400 services using cured-in-place pipe lining or open-cut techniques. This project also includes the repair of approximately 30 manholes in the Jocelyn Hollow area.

  Design began on July 1, 2015, and was completed in February 2016. Advertisement for construction began on May 2, 2016, and bid proposals were received on June 23, 2016. Construction activities began on September 12, 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 or bidding during the reporting period:

- 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 conclude during the upcoming quarter following permitting and easement acquisition activities.

- 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 was completed in October 2016 with permitting activities concluding in December 2016. Advertisement for construction activities are anticipated to begin during 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. The resulting construction project consists of the rehabilitation of approximately 4,600 linear feet of 8-inch diameter gravity sewer, the rehabilitation of associated manholes, and the renewal of approximately 100 services using cured-in-place pipe lining or open-cut techniques.

  This project also includes the inspection of approximately 127,000 linear feet of sewer in the Otter Creek area with rehabilitation of approximately 3,200 linear feet of 15-inch diameter sewer, associated manholes, and service laterals.

  Design began on February 24, 2016, and was completed in August 2016. Advertisement for construction began on October 31, 2016, and the bid proposals were received on December 8, 2016. Construction activities are anticipated to begin 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. The resulting construction project consists of the rehabilitation of approximately 34,000 linear feet of 8- to 18-inch diameter gravity sewer, the rehabilitation of associated manholes, and the renewal of over 1000 services using cured-in-place pipe lining or open-cut techniques.

  Design began on February 15, 2016, and was completed in July 2016. Advertisement for construction began on September 9, 2016, and bid proposals were received on October 12, 2016. Construction activities are anticipated to begin during the upcoming 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. Design began on June 27, 2016, and was completed in December 2016. Advertisement for construction is anticipated to begin 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. Design began on July 12, 2016, and is anticipated to continue through 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 activities continued during the reporting period. Design began on September 12, 2016, and is anticipated to continue through the upcoming quarter.

- Loves Branch Rehabilitation

  The Loves Branch Pump Station Upgrades project, as presented in the CAP/ER, consisted of expanding the pumping capacity of the Loves Branch Pump Station to 7.5 million gallons per day to address overflows and surcharging in the existing system. Additional analysis of flow monitoring and condition assessment data of the upstream gravity system indicated that rehabilitation to reduce wet weather flows may provide a viable option to reduce the required increase in pumping capacity. Because of this, the Loves Branch Pump Station project has been delayed to allow time for the completion of the Loves Branch Rehabilitation project.

  The project area to be evaluated for rehabilitation includes approximately 51,900 linear feet of gravity sewer and 300 manholes. Design began on October 24, 2016, and is anticipated to continue through the upcoming quarter.

- Hidden Acres Rehabilitation

  The Hidden Acres Pump Station Upgrades project, as presented in the CAP/ER, consisted of expanding the pumping capacity of the Hidden Acres Pump Station to 1.8 million gallons per day to address overflows and surcharging in the existing system. Additional analysis of the flow monitoring and condition assessment data of the upstream gravity system indicated that rehabilitation to reduce wet weather flows may provide a viable option to reduce the required increase in pumping capacity. Because of this, the Hidden Acres Pump Station project has been delayed to allow time for the completion of the Hidden Acres Rehabilitation project.

  The project area to be evaluated for rehabilitation includes approximately 59,800 linear feet of gravity sewer and 260 manholes. Design began on October 27, 2016, and is anticipated to continue through the upcoming quarter.

- Vandiver Rehabilitation

  The Vandiver Pump Station Upgrades project, as presented in the CAP/ER, consisted of expanding the pumping capacity of the Vandiver Pump Station to 11 million gallons per day to address overflows and surcharging in the existing system. Additional analysis of the flow monitoring and condition assessment data of the upstream gravity system indicated that rehabilitation to reduce wet weather flows may provide a viable option to reduce the required increase in pumping capacity. Because of this, the Vandiver Pump Station project has been delayed to allow time for the completion of the Vandiver Rehabilitation project.

The project area to be evaluated for rehabilitation includes more than 55,000 linear feet of gravity sewer. Design began on December 14, 2016, 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 or continue procurement for design services during the upcoming quarter:

- Shelby Park Rehabilitation – Area 6 – Shelby Trunk

  This rehabilitation project is the sixth of multiple projects to be conducted in the Shelby Park Rehabilitation project area. The area to be evaluated for rehabilitation includes approximately 36,200 linear feet of gravity trunk sewer and 130 manholes. Procurement of design services began during the reporting period, and design is anticipated to begin during the upcoming quarter.

- Smith Springs Rehabilitation – Area 3

  The Smith Springs Rehabilitation – Area 3 project is the third of multiple rehabilitation projects that will be conducted upstream of the Smith Springs Pump Station. The project area to be evaluated for rehabilitation includes over 60,000 linear feet of gravity sewer. Procurement of design services 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 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 obtain approval of the LTCP. During the reporting period, Metro has continued discussions with EPA and TDEC pertaining to the proposed LTCP's compliance with Tennessee's water quality criteria. 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. The *Basis of Design Report* was finalized in December 2016, and design activities are anticipated to continue through the upcoming quarter.

  During the reporting period, Metro continued 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 five proposals were received on April 14, 2016. Interviews with the selected short-listed firms were conducted on June 14, 2016, and

Metro has continued with contract negotiations through the reporting period. Metro anticipates that the Construction Manager at Risk will be under contract during 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 concurrently with the selection of 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. Permitting activities have continued throughout the reporting period. Construction of this project will be delayed until the Construction Manager at Risk is under contract.

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 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 was planned.

4.2 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. Design began on March 28, 2016, and was completed in December 2016. Advertisement for construction is anticipated to begin during the upcoming quarter.

4.3 2017 Annual Rehabilitation – Dry Creek

Planning activities associated with the 2017 Annual Rehabilitation – Dry Creek project, which will be located in the Dry Creek Wastewater Treatment Plant's service area, are currently underway. This project will target sewers located outside of CAP/ER rehabilitation areas and classified as high priority sewers for evaluation due to observations of infiltration. Procurement of design services is anticipated to begin during the upcoming quarter.

Section 5

Quarterly SSO and Dry Weather CSO Report

During the 4th Quarter of 2016, Metro experienced 34 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 October 1 through December 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-Oct-16	03-Oct-16	0.00	2.50	0.0001	Blockage	16406025	3514 Pin Hook Rd	No	No
03-Oct-16	03-Oct-16	0.00	2.00	0.0001	Blockage	08303030	1201 Porter Rd	No	No
04-Oct-16	04-Oct-16	0.00	2.00	0.001	Blockage	06103021	5003 Gallatin Pk	Yes	No
04-Oct-16	04-Oct-16	0.00	1.25	0.005	Electrical	08205062	Central WWTP - Biosolids	No	Yes
05-Oct-16	05-Oct-16	0.00	3.00	0.001	Blockage	06103021	5003 Gallatin Pk	Yes	No
15-Oct-16	15-Oct-16	0.00	1.00	0.0001	Blockage	10316055	3909 Whitford Ave	No	No
19-Oct-16	19-Oct-16	0.00	5.00	0.001	Blockage	10208049	825 Russleo Dr	No	No
23-Oct-16	23-Oct-16	0.00	1.50	0.0001	Blockage	10402034	3108 Belwood St	Yes	No
23-Oct-16	23-Oct-16	0.00	3.50	0.0001	Blockage	10208037	825 Russleo Dr	Yes	No
24-Oct-16	24-Oct-16	0.00	1.50	0.001	Blockage	08012018	3251 Viking Rd	No	No
15-Nov-16	15-Nov-16	0.00	4.00	0.00001	Blockage	07214062	1714 Straightway Ave	No	No
17-Nov-16	17-Nov-16	0.00	1.50	0.0001	Blockage	13001060	234 Harding Pl	Yes	No
07-Dec-16	07-Dec-16	0.00	2.50	0.001	Blockage	10402034	3119 Long Blvd alley	No	No
13-Dec-16	13-Dec-16	0.13	3.50	0.001	Blockage	16103002	517 Brewer Dr	Yes	No
14-Dec-16	14-Dec-16	0.00	3.50	0.001	Blockage	11709010	3711 Hilldale Dr	No	No
16-Dec-16	16-Dec-16	0.00	0.50	0.0005	Force Main	01215005	1428 Springfield Hwy	Yes	No
18-Dec-16	18-Dec-16	1.30	11.00	1.014	Rain	05116016	Loves Branch SPS	Yes	No
18-Dec-16	18-Dec-16	1.67	2.25	0.195	Rain	09104025	28th Ave. SPS / Centennial Blvd	Yes	No
18-Dec-16	18-Dec-16	1.74	2.50	0.012	Rain	08410007	149 Barker Rd	Yes	No
18-Dec-16	18-Dec-16	1.45	6.83	0.483	Rain	10210012	Davidson Branch SPS	Yes	No
18-Dec-16	18-Dec-16	1.30	3.25	0.1	Rain	05213002	Madison Heights SPS	Yes	No
20-Dec-16	20-Dec-16	0.00	2.50	0.0001	Blockage	09613076	2750 Elm Hill Pk	No	No
24-Dec-16	24-Dec-16	2.00	11.00	0.2	Rain	07008061	Riverside Drive SPS	Yes	No
24-Dec-16	24-Dec-16	2.22	18.00	1.5	Rain	06208003	Hidden Acres SPS	Yes	No
24-Dec-16	24-Dec-16	2.22	12.00	0.25	Rain	05213002	Madison Heights SPS	Yes	No
24-Dec-16	24-Dec-16	2.22	8.33	1.71	Rain	05205001	Gibson Creek SPS	Yes	No
24-Dec-16	24-Dec-16	2.27	6.42	0.102	Rain	04312004	Vandiver SPS	Yes	No
24-Dec-16	24-Dec-16	2.34	12.17	0.303	Rain	08410007	149 Barker Rd	Yes	No

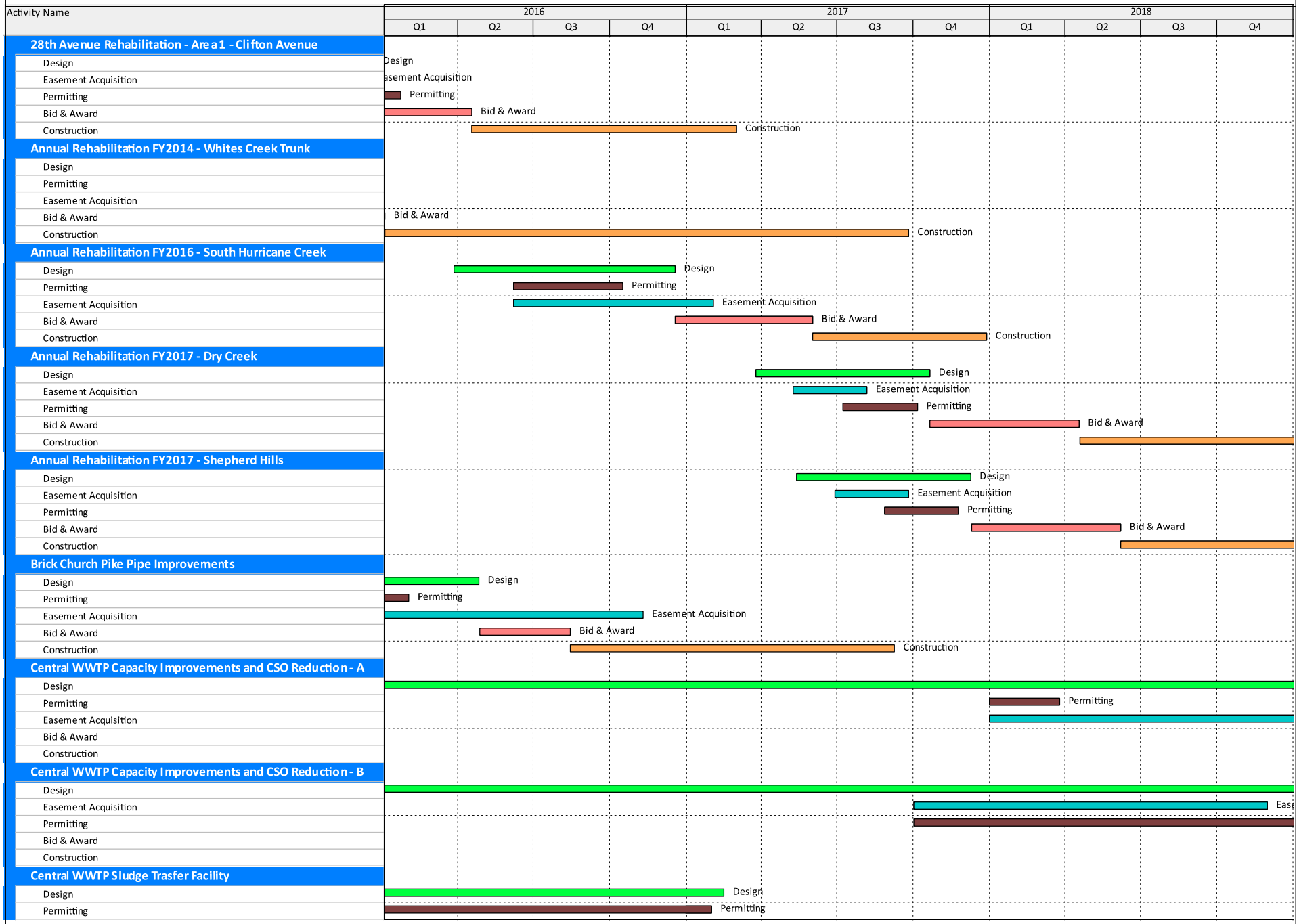
Quarterly SSO Report October 1 through December 31, 2016									
Event Start Date	**Event End Date**	**Rainfall (inches)**	**Duration (hours)**	**Overflow Volume (MG)**	**Overflow Cause**	**Location Manhole ID**	**Location**	**Unpermitted Discharge**	**Building Backup**
24-Dec-16	24-Dec-16	1.82	18.25	1.842	Rain	10210012	Davidson Branch SPS	Yes	No
24-Dec-16	24-Dec-16	2.05	11.00	1	Rain	13609002	Smith Springs SPS	Yes	No
24-Dec-16	25-Dec-16	2.18	20.00	0.1	Rain	05013010	3300 Briley Park Blvd S	No	No
24-Dec-16	24-Dec-16	2.18	20.00	0.06	Rain	06001011	3258 Brick Church Pk	No	No
24-Dec-16	24-Dec-16	2.18	20.00	0.2	Rain	06001013	3258 Brick Church Pk	No	No
24-Dec-16	24-Dec-16	1.98	1.50	0.0001	Blockage	10402035	3110 Belwood St	Yes	No

Appendix A

Schedule for Current and Upcoming Projects

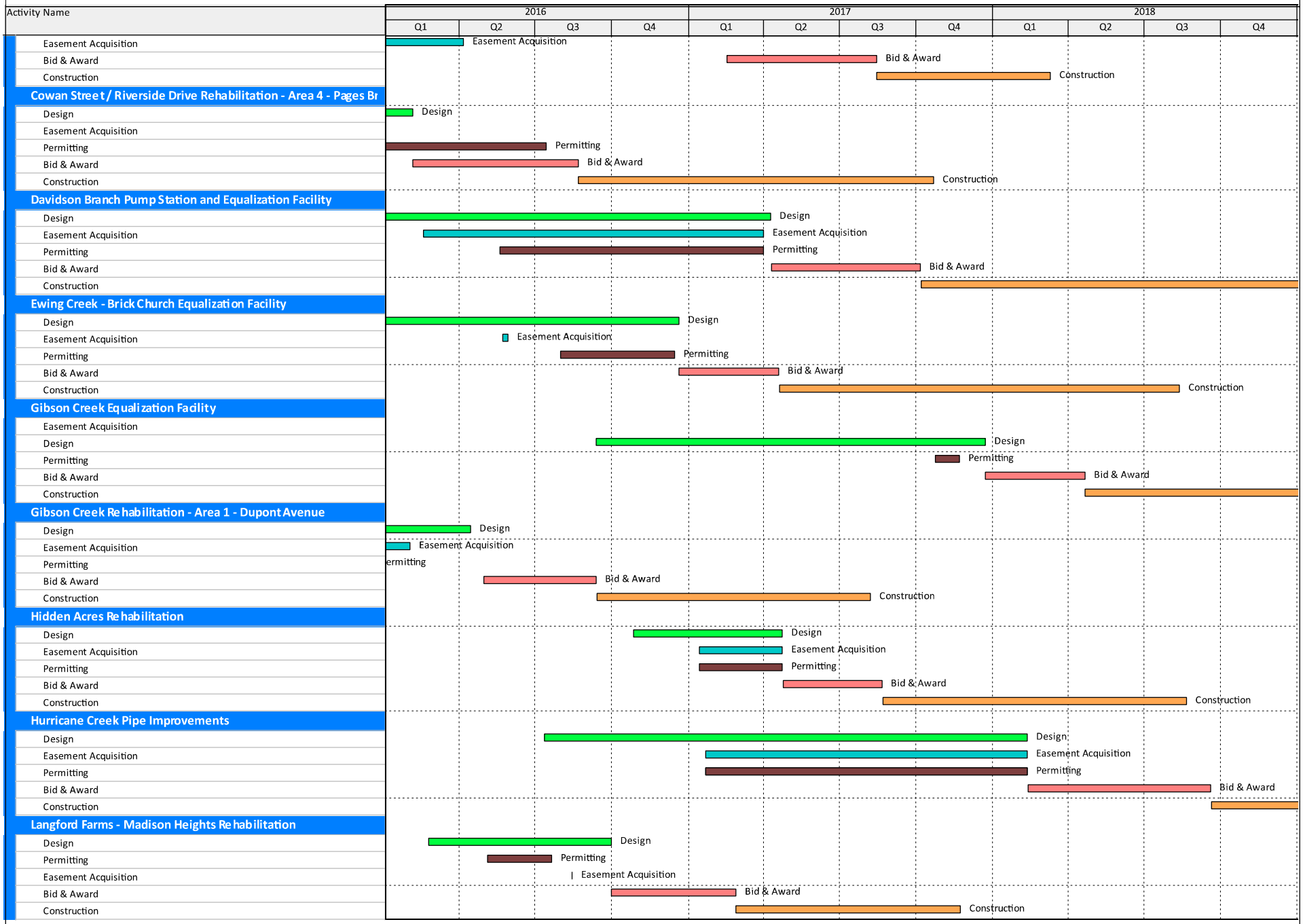
Note: The construction activity shows through substantial completion.

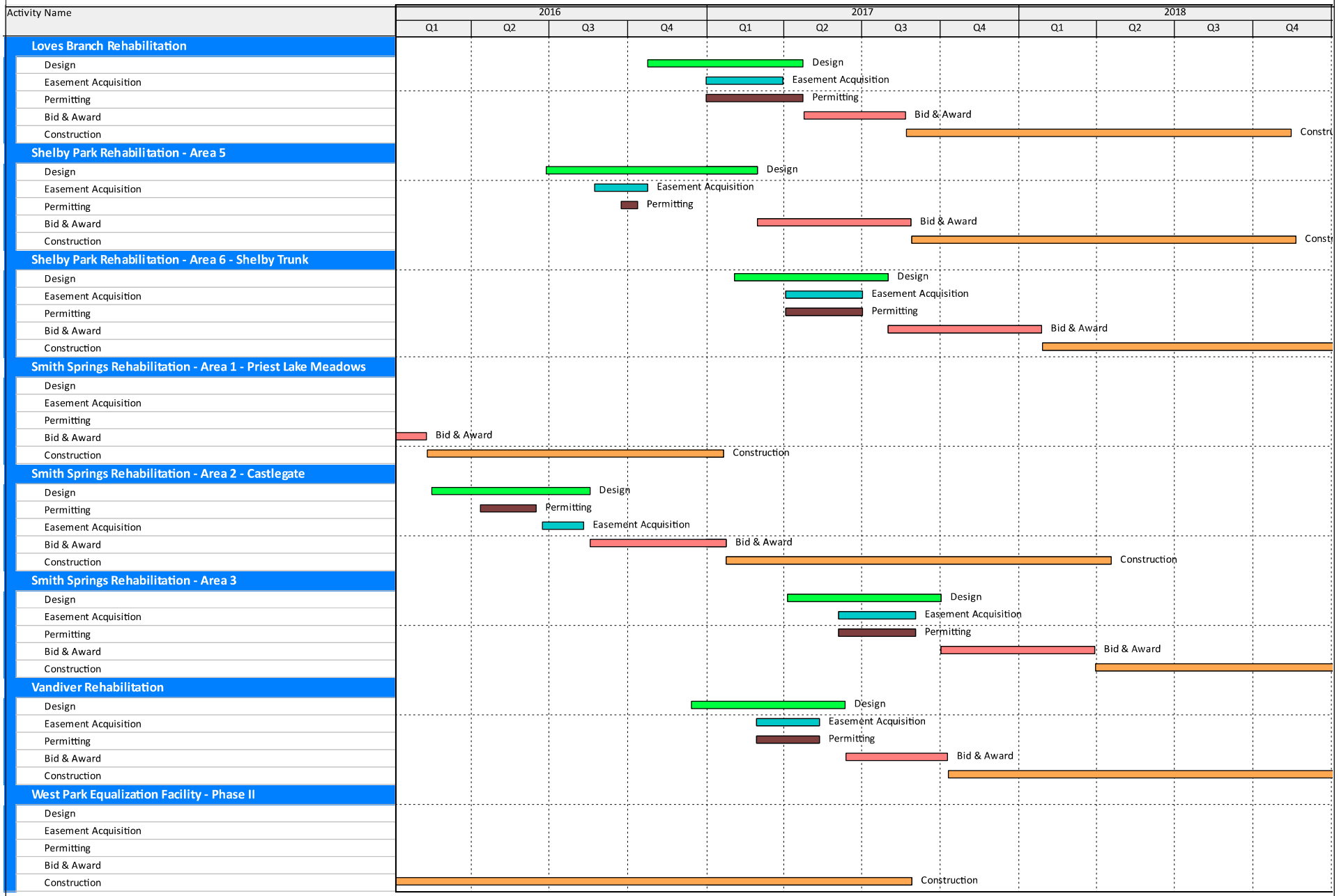
Nashville Overflow Abatement Program
2016 Quarterly Progress Report - 4th Quarter



Note: The construction activity shows through substantial completion.

Nashville Overflow Abatement Program
2016 Quarterly Progress Report - 4th Quarter



Note: The construction activity shows through substantial completion.

Nashville Overflow Abatement Program
2016 Quarterly Progress Report - 4th Quarter