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MAYOR



METROPOLITAN GOVERNMENT OF NASHVILLE AND DAVIDSON COUNTY

DEPARTMENT OF WATER AND SEWERAGE SERVICES
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January 28, 2019

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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 B, herewith we are transmitting the 2018 Annual Report, which covers the time period from January 1, 2018 through December 31, 2018.



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

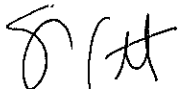
In addition, in accordance with the provisions of the Consent Decree, Section XIX (Reporting Requirements), Subsection A, herewith we are transmitting the Quarterly Progress report which covers the time period from October 1, 2018 through December 31, 2018.

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

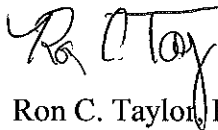
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage 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, 2018

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

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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 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.

Approval of the CAP/ER was granted by EPA on August 10, 2017, with TDEC copied on the approval. Since submittal of the CAP/ER in 2011, information from additional flow monitoring data collection, constructability reviews, and hydraulic analyses has resulted in adjustments to several CAP/ER projects, as well as the identification of additional projects to remediate SSOs. A summary of those changes was presented to EPA and TDEC in the *Addendum to the CAP/ER*, dated September 27, 2017.

On-going CAP/ER 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:

- 28th Avenue Rehabilitation – Area 1 – Clifton Avenue
- Barker Road / Omohundro Equalization Storage Phase I
- Brick Church Pike Pipe Improvements
- Cowan / Riverside Rehabilitation – Area 1 – Jones Avenue
- Cowan / Riverside Rehabilitation – Area 2 – Dickerson Pike
- Cowan / Riverside Rehabilitation – Area 3 – West Trinity Lane
- Cowan / Riverside Rehabilitation – Area 4 – Pages Branch
- Davidson and Brook Hollow Sewer Improvements
- Dodson Chapel Equalization Tank and Wastewater Pumping Station Expansion
- Dodson Chapel Pipe Improvements
- Dry Creek Wastewater Treatment Plant Optimization

- Gibson Creek Rehabilitation – Area 1 – Dupont Avenue
- Highway 100 / Tyne Boulevard – Trimble Rehabilitation
- Holiday Travel Park Gravity Conversion
- Joelton Rehabilitation
- Lakewood Water and Sewer Replacement
- Langford Farms – Madison Heights Rehabilitation
- Mill Creek 36-inch Trunk Sewer System Rehabilitation
- Mill Creek / Opryland Equalization Facility – Phase II
- Neely's Bend Rehabilitation
- Rockwood Conveyance Improvements
- Shelby Park Rehabilitation – Area 1 – Virginia Avenue
- Shelby Park Rehabilitation – Area 2 – Norvel Avenue
- Shelby Park Rehabilitation – Area 3 – Greenland Avenue
- Shelby Park Rehabilitation – Area 4 – Brush Hill Road
- Smith Springs Equalization Storage
- Smith Springs Rehabilitation – Area 1 – Priest Lake Meadows
- Smith Springs Rehabilitation – Area 2 – Castlegate
- West Park Equalization Storage Phase I
- West Park Equalization Facility Phase II
- Westchester Drive Rehabilitation
- Whites Creek Wastewater Pumping Station
- Whites Creek Wastewater Treatment Plant (WWTP) Optimization and Disinfection

2.2 CAP/ER Projects under Construction

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

- 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 began on January 25, 2017, and bid proposals were received on March 3, 2017. Construction activities began on May 22, 2017, and the project was substantially complete on December 14, 2018.

- **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 evaluated for rehabilitation included approximately 52,200 linear feet of gravity sewer and 270 manholes. The resulting project, as advertised for construction, consists of the rehabilitation of approximately 52,150 linear feet of 8- to 15-inch diameter gravity sewer, the rehabilitation of associated manholes, and the renewal of approximately 280 services using cured-in-place pipe lining or open-cut techniques.

Design began on June 27, 2016, and was completed in December 2016. Advertisement for construction activities began on March 22, 2017, and bid proposals were received on May 31, 2017. Construction activities began on August 7, 2017, and the project was substantially complete on November 20, 2018.

- **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 Upgrades project has been delayed to allow time for the completion of the Loves Branch Rehabilitation project.

The project area evaluated for rehabilitation included approximately 51,900 linear feet of gravity sewer and 300 manholes. The resulting project, as advertised for construction, consists of the rehabilitation of approximately 35,500 linear feet of 8- to 30-inch diameter gravity sewer, the rehabilitation of associated manholes, and the renewal of approximately 400 services using cured-in-place pipe lining or open-cut techniques.

Design began on October 24, 2016, and was completed in March 2017. Advertisement for construction activities began on August 10, 2017, and bid proposals were received on September 11, 2017. Construction activities began on December 18, 2017, and are anticipated to continue during 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 Upgrades project has been delayed to allow time for the completion of the Vandiver Rehabilitation project.

The project area evaluated for rehabilitation included more than 55,000 linear feet of gravity sewer. The resulting project, as advertised for construction, consists of the rehabilitation of approximately 30,650 linear feet of 6- to 21-inch diameter gravity sewer, the rehabilitation of associated manholes, and the renewal of approximately 570 services using cured-in-place pipe lining or open-cut techniques.

Design began on December 14, 2016, and was completed in July 2017. This project was packaged with the Hidden Acres Rehabilitation project for bidding, although construction activities for the two projects follow different schedules. Advertisement for construction activities began on November 2, 2017, and bid proposals were received on November 29, 2017. Construction activities began on March 26, 2018, and are anticipated to continue during 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 Upgrades project has been delayed to allow time for the completion of the Hidden Acres Rehabilitation project.

The project area evaluated for rehabilitation included approximately 59,800 linear feet of gravity sewer and 260 manholes. The resulting project, as advertised for construction, consists of the rehabilitation of approximately 7,700 linear feet of 6- to 18-inch diameter gravity sewer, the rehabilitation of associated manholes, and the renewal of approximately 70 services using cured-in-place pipe lining or open-cut techniques.

Design began on October 27, 2016, and was completed in June 2017. This project was packaged with the Vandiver Rehabilitation project for bidding, although construction activities for the two projects follow different schedules. Advertisement for construction activities began on November 2, 2017, and bid proposals were received on November 29, 2017. Construction activities began on April 9, 2018, and the project was substantially complete on November 9, 2018.

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 complete. Advertisement for construction is anticipated to occur in the second quarter of 2020.

- 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 complete. Permit and easement acquisition activities are underway and are 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 were completed during the reporting period. Design began on September 12, 2016, and is complete. Permitting activities are underway and are anticipated to continue through the upcoming quarter. Advertisement for construction is anticipated to occur in the third quarter of 2020.

- Sevenmile Creek Rehabilitation – Area 1

The Sevenmile Creek Rehabilitation – Area 1 project is the first in a series of rehabilitation projects developed for the Mill Creek watershed and its tributaries. Although not originally included in the projects proposed in the CAP/ER, sewer rehabilitation in the Mill Creek watershed will be performed to reduce wet-weather flows, allowing a reduced length of conveyance improvements for the Mill Creek Trunk Improvements and Equalization Facility project. The project area to be evaluated for rehabilitation includes approximately 41,200 linear feet of gravity sewer. Design began on July 31, 2018, and is anticipated to continue through 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. Design began on February 6, 2017, and is complete, including coordination with Metro Parks. Permitting activities were completed in December 2017. Advertisement for construction is anticipated to occur in the second quarter of 2020.

- Smith Springs Rehabilitation – Area 3 – Harbour Town

The Smith Springs Rehabilitation – Area 3 – Harbour Town 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. Design began on June 5, 2017, and is complete. Advertisement for construction is anticipated to occur in the second quarter of 2020.

2.4 Upcoming CAP/ER Projects

Metro continues to conduct planning activities for multiple projects including collecting flow monitoring and sewer condition assessment data. Additional projects are anticipated to begin procurement for design services in late 2019.

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, including continued discussions with EPA and TDEC pertaining to the proposed LTCP's compliance with Tennessee's water quality criteria and the costs associated with higher levels of control. On June 18, 2018, Metro presented to EPA and TDEC an *Addendum to the LTCP* which summarizes the updates and modifications to projects described in the LTCP since its submittal in 2011. Discussions on the LTCP 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:

- Apex Sewer Corrections

- Broadway Improvements
- Driftwood Equalization Basin Expansion
- Van Buren Improvements
- Washington CSO Facility Improvements

3.2 LTCP Projects under Construction

There are currently no LTCP projects under construction.

3.3 LTCP Projects under Design and Preconstruction

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.

In mid-2017, Metro officially decided to design and construct a single headworks facility that will serve both combined and sanitary influents. This design is to be completed by Hazen and Sawyer. All other work at the plant will be designed by Brown and Caldwell. Each firm's notice to proceed for detailed design was issued on June 23, 2017. Design activities are underway and are anticipated to continue through the upcoming quarter.

On March 23, 2017, Metro completed the procurement and contracting 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. Brasfield & Gorrie was selected as the Construction Manager at Risk. Through the reporting period, the Construction Manager at Risk provided input on design efforts, continued to analyze the construction schedule to determine critical path items, and refined construction cost estimates.

Metro has also identified a component of the Central WWTP Capacity Improvements and CSO Reduction project, the Sludge Transfer Facility, for which detailed design proceeded 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. Construction activities for the Sludge Transfer Facility began on August 21, 2017, and are anticipated to be complete in 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 2017 Annual Rehabilitation – Dry Creek

The 2017 Annual Rehabilitation – Dry Creek project, which is located in the Dry Creek Wastewater Treatment Plant's service area, consists of the evaluation and rehabilitation of approximately 57,900 linear feet of gravity sewer, ranging in diameter from 8 to 30 inches. These sewers are located outside of CAP/ER rehabilitation areas and include many sewers classified as high priority for evaluation due to observations of infiltration. Design began on March 27, 2017, and was completed in September 2017. Advertisement for construction is anticipated to occur in the fourth quarter of 2020.

4.2 2017 Annual Rehabilitation – Shepherd Hills

The 2017 Annual Rehabilitation – Shepherd Hills project, which is located in the Dry Creek Wastewater Treatment Plant's service area, consists of approximately 59,900 linear feet of gravity sewer, ranging in diameter from 8 to 30 inches. This project targets sewers located outside of CAP/ER rehabilitation areas and includes many sewers classified as high priority for evaluation due to observations of infiltration. Design began on May 30, 2017, and was completed in October 2017. Advertisement for construction is anticipated to occur in the third quarter of 2020.

Section 5

Quarterly SSO and Dry Weather CSO Report

During the reporting period, Metro experienced 81 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, 2018									
Event Start Date	Event End Date	Rainfall (inches)	Duration (hours)	Overflow Volume (MG)	Overflow Cause	Location Manhole ID	Location	Unpermitted Discharge	Building Backup
01-Oct-18	01-Oct-18	0.03	0.50	0.00001	Private SPS	15004039	1105 Scenic Lake Ct	No	No
03-Oct-18	03-Oct-18	0	3.00	0.00001	Blockage	14905050	4909 Barclay Square Dr	No	No
03-Oct-18	03-Oct-18	0	3.50	0.00001	Blockage	16410027	4505 Sandpiper Ln	No	No
15-Oct-18	15-Oct-18	4.24	6.00	0.001	Rain	05911027	701 Rowan Dr	Yes	No
15-Oct-18	15-Oct-18	4.24	6.00	0.001	Rain	05911028	709 Rowan Dr	Yes	No
15-Oct-18	15-Oct-18	4.42	1.25	0.015	Rain	08011001	Bordeaux Hospital SPS	Yes	No
15-Oct-18	15-Oct-18	3.94	13.42	1.573	Rain	04312004	Vandiver SPS	Yes	No
15-Oct-18	15-Oct-18	3.98	6.50	0.941	Rain	03411009	Dry Creek SPS	Yes	No
15-Oct-18	15-Oct-18	3.98	5.83	0.712	Rain	05116016	Loves Branch SPS	Yes	No
15-Oct-18	15-Oct-18	3.78	15.08	1.513	Rain	10210012	Davidson Branch SPS	Yes	No
15-Oct-18	15-Oct-18	3.78	2.50	0.05	Rain	10203057	Cleeces Ferry SPS	Yes	No
15-Oct-18	15-Oct-18	3.98	7.00	0.15	Rain	05213002	Madison Heights SPS	Yes	No
15-Oct-18	16-Oct-18	4.44	29.00	0.15	Rain	08012012	Bordeaux Hills SPS	Yes	No
15-Oct-18	15-Oct-18	3.98	4.50	0.03	Rain	05207006	Berwick Trail SPS / Center St	Yes	No
15-Oct-18	16-Oct-18	4.44	22.25	0.4	Rain	07008061	Riverside Dr SPS	Yes	No
15-Oct-18	16-Oct-18	4.42	19.16	0.594	Rain	08101015	River Dr SPS	Yes	No
15-Oct-18	15-Oct-18	3.78	3.25	0.15	Rain	09015045	Sunliner SPS	Yes	No
15-Oct-18	15-Oct-18	4.42	11.00	3.616	Rain	09104025	28th Ave SPS / Centennial Blvd	Yes	No
15-Oct-18	15-Oct-18	4.91	13.40	0.05	Rain	01416001	Joelton SPS	Yes	No
15-Oct-18	15-Oct-18	3.98	10.20	0.9	Rain	06208003	Hidden Acres SPS	Yes	No
15-Oct-18	15-Oct-18	3.11	8.50	0.4	Rain	05409018	Lakemeade #2 SPS	Yes	No
15-Oct-18	15-Oct-18	3.84	1.50	0.03	Rain	07014003	Fairway Center SPS	Yes	No
15-Oct-18	15-Oct-18	3.78	5.00	0.262	Rain	09011002	516 Basswood Ave	Yes	No
15-Oct-18	15-Oct-18	1.94	6.75	0.105	Rain	08410007	149 Barker Rd	Yes	No
15-Oct-18	15-Oct-18	4.04	5.67	0.591	Rain	07114041	Cowan St SPS	Yes	No
01-Nov-18	05-Nov-18	0	96.00	0.001	Force Main	07015021	2245 Rosa L Parks Blvd	Yes	No
01-Nov-18	02-Nov-18	0.23	10.00	0.001	Line Break	09413023	711 Lebanon Pk	Yes	No
05-Nov-18	06-Nov-18	2.31	7.58	0.485	Rain	04312004	Vandiver SPS	Yes	No

Quarterly SSO Report

October 1 through December 31, 2018

Event Start Date	Event End Date	Rainfall (inches)	Duration (hours)	Overflow Volume (MG)	Overflow Cause	Location Manhole ID	Location	Unpermitted Discharge	Building Backup
05-Nov-18	06-Nov-18	2.38	4.25	0.343	Rain	05116016	Loves Branch SPS	Yes	No
05-Nov-18	06-Nov-18	2.32	8.50	0.15	Rain	07008061	Riverside Dr SPS	Yes	No
05-Nov-18	06-Nov-18	2.02	2.50	0.1	Rain	09015045	Sunliner SPS	Yes	No
05-Nov-18	06-Nov-18	3.32	5.00	0.02	Rain	01416001	Joelton SPS	Yes	No
05-Nov-18	06-Nov-18	2.34	3.09	0.269	Rain	07114001	Cowan St SPS	Yes	No
06-Nov-18	06-Nov-18	2.58	4.00	0.001	Rain	05911028	709 Rowan Dr	Yes	No
06-Nov-18	06-Nov-18	2.02	11.67	1	Rain	10210012	Davidson Branch SPS	Yes	No
06-Nov-18	06-Nov-18	2.38	6.50	0.15	Rain	05213002	Madison Heights SPS	Yes	No
06-Nov-18	06-Nov-18	2.32	5.50	0.03	Rain	08012012	Bordeaux Hills SPS	Yes	No
06-Nov-18	06-Nov-18	2.38	1.30	0.01	Rain	05207006	Berwick Trail SPS / Center St	Yes	No
06-Nov-18	06-Nov-18	2.32	3.83	0.054	Rain	08101015	River Dr SPS	Yes	No
06-Nov-18	06-Nov-18	2.32	12.25	2.949	Rain	09104025	28th Ave SPS / Centennial Blvd	Yes	No
06-Nov-18	06-Nov-18	2.38	2.30	0.2	Rain	06208003	Hidden Acres SPS	Yes	No
06-Nov-18	06-Nov-18	2.38	11.00	0.4	Rain	05409018	Lakemeade #2 SPS	Yes	No
06-Nov-18	06-Nov-18	2.02	1.08	0.007	Rain	09011002	516 Basswood Ave	Yes	No
06-Nov-18	06-Nov-18	1.89	4.92	0.08	Rain	08410007	149 Barker Rd	Yes	No
08-Nov-18	08-Nov-18	0	4.50	0.001	Blockage	13302047	180 McCall St	No	No
11-Nov-18	11-Nov-18	0	0.50	0.001	Blockage	10612019	895 Murfreesboro Pk	Yes	No
14-Nov-18	15-Nov-18	1.00	9.58	0.527	Rain	10210012	Davidson Branch SPS	Yes	No
14-Nov-18	15-Nov-18	1.14	2.00	0.01	Rain	01416001	Joelton SPS	Yes	No
15-Nov-18	15-Nov-18	0.00	0.50	0.05	Electrical	09506004	Mill Creek SPS	Yes	No
17-Nov-18	17-Nov-18	0.00	2.00	0.02	Controller	16410021	Summerfield SPS	Yes	No
21-Nov-18	21-Nov-18	0	4.00	0.001	Blockage	05302066	102 Hurst Dr	No	No
26-Nov-18	26-Nov-18	0	1.50	0.00001	Blockage	09203078	2214 Morena St	No	No
30-Nov-18	30-Nov-18	0.44	6.00	0.001	Blockage	09302095	214 2nd Ave N	Yes	No
03-Dec-18	03-Dec-18	0	2.00	0.001	Blockage	09310147	200 4th Ave S	Yes	No
04-Dec-18	09-Dec-18	0.91	126.00	0.00001	Line Break	09304026	603 S 9th St	Yes	No
13-Dec-18	13-Dec-18	0.03	2.00	0.0001	Blockage	15011059	3456 New Towne Rd	Yes	No
22-Dec-18	23-Dec-18	0.44	4.50	0.001	Blockage	04309103	246 Cumberland Ave	No	No

Quarterly SSO Report

October 1 through December 31, 2018

Event Start Date	Event End Date	Rainfall (inches)	Duration (hours)	Overflow Volume (MG)	Overflow Cause	Location Manhole ID	Location	Unpermitted Discharge	Building Backup
26-Dec-18	26-Dec-18	0	3.50	0.0001	Blockage	04411010	509 Jones St	No	No
27-Dec-18	28-Dec-18	0.62	17.00	0.001	Blockage	07912002	7021 Westbelt Dr	Yes	No
27-Dec-18	27-Dec-18	0.66	2.00	0.001	Blockage	WLS052K123	4845 Catskill Dr	No	No
28-Dec-18	28-Dec-18	0.60	4.50	0.001	Blockage	12915024	903 Glenmary Ct	No	No
30-Dec-18	04-Jan-19	3.47	4.08	0.024	Rain	03411009	Dry Creek SPS	Yes	No
31-Dec-18	02-Jan-19	2.78	36.00	0.5	Rain	11908016	431 E Thompson Ln	Yes	No
31-Dec-18	01-Jan-19	2.94	18.42	1.311	Rain	04312004	Vandiver SPS	Yes	No
31-Dec-18	31-Dec-18	2.57	7.17	0.558	Rain	09105110	West Park SPS	Yes	No
31-Dec-18	31-Dec-18	2.84	10.92	0.423	Rain	05116016	Loves Branch SPS	Yes	No
31-Dec-18	02-Jan-18	3.12	54.58	2.671	Rain	05205001	Gibson Creek SPS	Yes	No
31-Dec-18	01-Jan-19	2.57	26.00	1.48	Rain	10210012	Davidson Branch SPS	Yes	No
31-Dec-18	31-Dec-18	2.94	8.90	0.2	Rain	05315020	Lakewood SPS	Yes	No
31-Dec-18	31-Dec-18	2.57	3.20	0.1	Rain	10203057	Cleeces Ferry SPS	Yes	No
31-Dec-18	01-Jan-19	2.81	16.90	0.5	Rain	05213002	Madison Heights SPS	Yes	No
31-Dec-18	01-Jan-19	2.86	22.50	0.15	Rain	08012012	Bordeaux Hills SPS	Yes	No
31-Dec-18	31-Dec-18	2.44	2.17	6.332	Rain	09409003	Browns Creek SPS/Visco Dr	Yes	No
31-Dec-18	01-Jan-19	2.86	20.80	0.5	Rain	07008061	Riverside Dr SPS	Yes	No
31-Dec-18	31-Dec-18	2.53	18.00	4.529	Rain	09104025	28th Ave SPS / Centennial Blvd	Yes	No
31-Dec-18	02-Jan-19	3.29	42.25	2	Rain	05409018	Lakemeade #2 SPS	Yes	No
31-Dec-18	02-Jan-19	2.96	53.00	1	Rain	15908004	Hillview SPS	Yes	No
31-Dec-18	02-Jan-19	2.89	46.50	0.5	Rain	09506004	Mill Creek SPS	Yes	No
31-Dec-18	31-Dec-18	2.59	15.40	1	Rain	16002032	South Oak Hill SPS	Yes	No
31-Dec-18	31-Dec-18	2.57	6.25	0.07	Rain	09011002	516 Basswood Ave	Yes	No
31-Dec-18	05-Jan-19	5.10	117.67	7.386	Rain	08410007	149 Barker Rd	Yes	No

Appendix A

Schedule for Current and Upcoming Projects

Note: The construction activity is through substantial completion.

Nashville Overflow Abatement Program 2018 Quarterly Progress Report - 4th Quarter

Activity Name	2018				2019				2020			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Annual Rehabilitation FY2017 - Dry Creek												
Planning												
Design												
Permitting												
Easement Acquisition												
Bid & Award												
Construction												
Annual Rehabilitation FY2017 - Shepherd Hills												
Planning												
Easement Acquisition												
Design												
Permitting												
Bid & Award												
Construction												
Central WWTP Capacity Improvements and CSO Reduction - A												
Planning												
Design												
Permitting												
Easement Acquisition												
Bid & Award												
Construction												
Central WWTP Capacity Improvements and CSO Reduction - B												
Planning												
Design												
Permitting												
Easement Acquisition												
Bid & Award												
Construction												
Central WWTP Sludge Transfer Facility												
Planning												
Design												
Permitting												
Easement Acquisition												
Bid & Award												
Construction												
Davidson Branch Pump Station and Equalization Facility												
Planning												
Design												
Easement Acquisition												
Permitting												
Bid & Award												
Construction												
Ewing Creek - Brick Church Equalization Facility												
Planning												
Design												
Easement Acquisition												
Permitting												
Bid & Award												
Construction												
Gibson Creek Equalization Facility												
Easement Acquisition												
Planning												
Design												
Permitting												
Bid & Award												
Construction												
Hidden Acres Rehabilitation												
Planning												
Design												
Easement Acquisition												

Note: The construction activity is through substantial completion.

Nashville Overflow Abatement Program 2018 Quarterly Progress Report - 4th Quarter

