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July 28, 2021

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

Dear Colleagues,

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 period from April 1 through June 30, 2021.

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

Quarterly Report Submittal

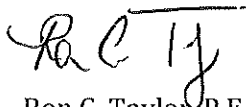
July 28, 2021

Page 2

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, do not hesitate to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "R. C. Taylor". The signature is written in a cursive style with a horizontal line above the letters.

Ron C. Taylor, P.E.

Clean Water Nashville Overflow Abatement Program Director

cc: Mr. Scott A. Potter, P.E., Director, Metro Water Services
Mr. David Tucker, Deputy Director, Metro Water Services
Mr. Cyrus Q. Toosi, P.E., Assistant Director / Chief Engineer, Engineering
Mr. Thomas G. Cross, Deputy Director, Metropolitan Department of Law


Clean Water Nashville Overflow Abatement Program

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

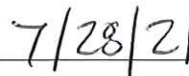
CONSENT DECREE QUARTERLY PROGRESS REPORT

April 1 through June 30, 2021

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering such information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.



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



Date

Table of Contents

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.....	2-2
2.2	CAP/ER Projects under Construction.....	2-3
2.3	CAP/ER Projects under Design.....	2-3
2.4	Upcoming CAP/ER Projects	2-6
2.5	CAP/ER Addendum #2 Projects.....	2-6
Section 3	Long Term Control Plan.....	3-1
3.1	Completed LTCP Projects.....	3-2
3.2	LTCP Projects under Construction.....	3-2
3.3	LTCP Projects under Design	3-3
3.4	Upcoming LTCP Projects	3-3
Section 4	Additional Measures to Maintain Consent Decree Compliance	4-1
4.1	2017 Annual Rehabilitation – Dry Creek	4-1
4.2	2017 Annual Rehabilitation – Shepherd Hills.....	4-1
4.3	2020 Annual Rehabilitation – West Nashville	4-1
4.4	Howse Avenue Force Main Replacement.....	4-2
Section 5	Quarterly SSO and Dry-Weather CSO Report.....	5-1

List of Tables

Table 5-1	Quarterly SSO Report	5-2
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Appendix

Appendix A	Schedule for Current and Upcoming Projects
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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 to the U.S. Environmental Protection Agency (EPA) for 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.
- *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 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 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.

Through ongoing efforts to maintain the system, Metro identified several overflow locations, outside of those identified in the CAP/ER, that warrant additional field investigations and/or improvements. As requested by TDEC in a letter dated July 15, 2019, Metro prepared *Addendum #2 to the CAP/ER*, which was submitted on August 30, 2019. That Addendum describes those overflow locations, summarizes actions taken, and presents Metro's plan for identifying and addressing conditions causing those overflows.

On February 18, 2020, Metro met with representatives from EPA, TDEC, the U.S. Department of Justice, and the Tennessee Attorney General's office to discuss compliance with the Consent Decree. A follow-up conference call with all parties was held on April 4, 2020, with informal clarifications between parties continuing over the following months. On December 7, 2020, Metro received a letter from EPA formalizing those discussions. The letter, which was countersigned by Metro on December 8, 2020, expands the Consent Decree's list of sanitary sewer overflows to be addressed (Appendix A of the Consent Decree). Additionally, the letter required that Metro submit an update to the CAP/ER, identifying corrective actions that have been or will be taken to address those overflows.

On June 2, 2021, Metro submitted the *Update to the Corrective Action Plan / Engineering Report* (CAP/ER Update). That document is currently under review by EPA and TDEC.

Ongoing 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
- Ewing Creek / Brick Church Equalization Facility
- Gibson Creek Rehabilitation – Area 1 – Dupont Avenue
- Hidden Acres Rehabilitation
- Highway 100 / Tyne Boulevard – Trimble Rehabilitation
- Holiday Travel Park Gravity Conversion
- Joelton Rehabilitation
- Lakewood Water and Sewer Replacement
- Langford Farms – Madison Heights Rehabilitation
- Loves Branch 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
- Shelby Park Rehabilitation – Area 5 – Cooper Lane
- Smith Springs Equalization Storage
- Smith Springs Rehabilitation – Area 1 – Priest Lake Meadows
- Smith Springs Rehabilitation – Area 2 – Castlegate
- Vandiver Rehabilitation
- 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 project continued construction 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. Advertisement for construction activities began on April 25, 2020, and bid proposals were received on June 11, 2020. The construction Notice-to-Proceed was issued on October 21, 2020, and construction activities will 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:

- 28th Avenue Rehabilitation – Area 2 – Batavia Street

The 28th Avenue Rehabilitation – Area 2 – Batavia Street project is the second in a series of rehabilitation projects to be constructed in the 28th Avenue Rehabilitation project area. The area to be evaluated for rehabilitation includes approximately 49,500 linear feet of gravity sewer and 272 manholes. Design began on May 19, 2020, and is complete. The resulting project consists of the rehabilitation of approximately 42,600 linear feet of gravity sewer, associated

manholes, and service laterals within Metro's rights-of-way and easements. Advertisement for construction is anticipated to occur in the first quarter of 2022.

- Bandywood - Green Hills Rehabilitation

The Bandywood - Green Hills Rehabilitation project is a sewer rehabilitation project planned for the portion of the Green Hills area near Sugartree Creek. The area to be evaluated for rehabilitation includes approximately 59,000 linear feet of gravity sewer and 358 manholes. Design began on June 28, 2021, and is anticipated to continue through the upcoming quarter.

- Cleeces Ferry Rehabilitation – Area 1 – Summerly Drive

The Cleeces Ferry Rehabilitation – Area 1 – Summerly Drive project is the first of two rehabilitation projects to be constructed upstream of the Cleeces Ferry Pump Station. The area to be evaluated for rehabilitation includes approximately 53,100 linear feet of gravity sewer and 299 manholes. Design began on August 6, 2020, and is complete. The resulting project consists of the rehabilitation of approximately 49,000 linear feet of gravity sewer, associated manholes, and service laterals within Metro's rights-of-way and easements. Advertisement for construction is anticipated to occur in the first quarter of 2022.

- 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. Design began on September 12, 2016, and is complete. Advertisement for construction began on March 23, 2021, and bid proposals were received on April 22, 2021. The construction Notice-to-Proceed is anticipated to be issued in 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 gravity trunk sewer. Design began on July 12, 2016, and is complete. Permit and easement acquisition activities are underway and are anticipated to conclude during the upcoming quarter. Advertisement for construction is anticipated to occur in the third quarter of 2021.

- Lakewood Rehabilitation – Area 2 – Pitts Avenue

The Lakewood Rehabilitation – Area 2 – Pitts Avenue project is a sewer rehabilitation project planned for the area upstream of the Lakewood Pump Station. The area to be evaluated for rehabilitation includes approximately 54,000 linear feet of gravity sewer and 282 manholes. Design began on March 15, 2021, and is anticipated to continue through the upcoming quarter.

- Mill Creek Trunk Improvements and Equalization Facility

The Mill Creek Trunk Improvements and Equalization Facility project combines two projects presented in the CAP/ER, the Mill Creek Trunk Improvements project and the Mill Creek /

Opryland Equalization Facility – Phase III project. Additional analysis of flow monitoring and condition assessment data of the upstream gravity system indicate that rehabilitation to reduce wet-weather flows may provide a viable option to reduce the extents of the trunk sewer improvements. The resulting project consists of conveyance capacity upgrades of over 3 miles of large diameter sewer, the addition of 60 million gallons of storage, and the addition of a wet-weather pump station with a 100 million gallons per day pumping capacity. Design began on February 1, 2021, and will continue during the upcoming quarter.

Additionally, Metro has procured a Construction Manager at Risk who will provide pre-construction services during the design phase and act as the general contractor during the construction phase of this project. The Notice-to-Proceed for pre-construction services was issued on May 26, 2021, and that work will continue through the upcoming quarter.

Due to the long duration anticipated for design and construction of the Mill Creek Trunk and Equalization Facility, Metro has continued to evaluate the system's performance for opportunities to reduce the frequency of overflows in this area. In 2020, Metro determined that modifications could be made to the Barker Road overflow and adjacent manholes, allowing increased conveyance and system storage in the trunk sewer. Those modifications were completed in June 2021 and are anticipated to reduce overflows at Barker Road.

- **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 for a reduced length of conveyance improvements for the Mill Creek Trunk Improvements and Equalization Facility project. The area evaluated for rehabilitation includes approximately 41,200 linear feet of gravity sewer. Design began on July 31, 2018, and is complete. The project consists of the rehabilitation of approximately 28,900 linear feet of gravity sewer, associated manholes, and service laterals within Metro's rights-of-way and easements. Advertisement for construction is anticipated to occur in the fourth quarter of 2021.

- **Shelby Park Rehabilitation – Area 6 – Shelby Trunk**

This rehabilitation project is the sixth in a series of rehabilitation projects to be constructed upstream of the Shelby Park Pump Station. The area 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. The project consists of the rehabilitation of approximately 20,500 linear feet of gravity sewer, associated manholes, and service laterals within Metro's rights-of-way and easements. Advertisement for construction began on September 28, 2020, and bidding and award activities continued through the reporting period, including coordination for approvals required by the State Revolving Fund (SRF) loan. The construction Notice-to-Proceed is planned for early July 2021, and construction activities will begin during the upcoming quarter.

- 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 constructed upstream of the Smith Springs Pump Station. The area evaluated for rehabilitation includes over 58,000 linear feet of gravity sewer. Design began on June 5, 2017, and is complete. The resulting project consists of the rehabilitation of approximately 28,000 linear feet of gravity sewer, associated manholes, and service laterals within Metro’s rights-of-way and easements. Advertisement for construction is anticipated to occur in the third quarter of 2021.

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:

- Mill Creek – Collins Creek Rehabilitation

The Mill Creek – Collins Creek Rehabilitation project is a sewer rehabilitation project planned for the portion of the Antioch area near Interstate 24 and Bell Road. The area to be evaluated for rehabilitation includes approximately 69,000 linear feet of gravity sewer, including sewers up to 42 inches in diameter. Procurement of design services is anticipated to begin in the upcoming quarter.

In addition to the projects listed above, Metro continues to conduct planning activities for multiple Clean Water Nashville projects.

2.5 CAP/ER Addendum #2 Projects

As discussed in the *Addendum #2 to the CAP/ER*, Metro recognizes the need to continuously review occurrences of overflows, identify their root causes, and address issues before they become chronic. Through that monitoring process, Metro identified several overflow locations, outside of those initially identified in the CAP/ER, that warrant additional field investigations and/or improvements. Activities associated with those locations, when not associated with a capital project, are described as follows:

- Bordeaux Hills Pump Station

After experiencing an increased frequency of overflows in 2018, the operation of the Bordeaux Hills Pump Station was evaluated, and it was determined that the grinders at the pump station were potentially causing excessive surcharging during high flow storm events leading to an overflow at the relief pipe. In March 2019, the grinders were removed, and the pump station has not experienced an overflow since that time. Because the pump station has not experienced any operational or performance issues with the grinders removed, Metro does not plan to reinstall them. This activity is believed to have addressed the wet-weather overflows previously reported at this location. The pump station will continue to be monitored as part of Metro’s ongoing capacity, management, operations, and maintenance (CMOM) activities.

- Bordeaux Hospital Pump Station

To address the wet-weather overflow occurring at the Bordeaux Hospital Pump Station, the pump impellers were replaced in June 2019, restoring the capacity of the pump station. This is believed to have addressed the wet-weather overflows previously reported at this location. The

pump station's performance will continue to be monitored as part of Metro's ongoing CMOM activities.

- Fairway Center Pump Station

Because of recent overflows at the Fairway Center Pump Station during wet-weather events, Metro identified the area for additional investigation. An evaluation of the pump station's performance has been completed, and pump impellers were replaced in late 2019 which improved the pump station's performance. Since that time, only two overflows have occurred at the pump station. One occurred when the March 3, 2020 tornado caused a long-term power outage; the second occurred on March 27, 2021, when the area experienced more than 5 inches of rainfall. Since that rainfall event exceeded the CAP/ER's design criteria, no additional remedial measures are proposed at this time. The pump station's performance will continue to be monitored as part of Metro's ongoing CMOM activities.

- Farmingham Woods Pump Station

The Farmingham Woods Pump Station was removed from service in July 2019, and the area previously served by the pump station is now conveyed via a new gravity sewer. This improvement addresses the wet-weather overflows previously observed at the pump station.

- Hillview Pump Station

Although not historically a location of overflows, numerous wet-weather overflows were observed at the Hillview Pump Station beginning in late 2017. In response to these overflows, smoke testing was conducted in the upstream gravity sewer in October 2018, and manhole inspections along with CCTV inspections of the gravity sewer were conducted in March 2019. Several repairs to address rainfall-derived infiltration and inflow (RDII) were identified, and these were completed in 2019. Concurrently with the investigations of the gravity sewer, the pump station was evaluated and determined to have a reduced pumping capacity. Work to restore the pump station's capacity has been completed, and the pump station will continue to be monitored for capacity issues as part of Metro's ongoing CMOM activities.

- Hopedale Pump Station

Although it experienced only one overflow in the decade prior to 2019, numerous overflows were reported at the Hopedale Pump Station in 2019. Because of the increased frequency of overflows, the pump station's performance was evaluated, and the pump station was determined to be operating as designed. Smoke testing of the gravity sewer upstream of the pump station was completed in the fall of 2019. Following review of the available data, comprehensive sewer rehabilitation will be conducted in the gravity sewer system upstream of the pump station to reduce peak RDII flows within the system. The Hopedale Rehabilitation project consists of the evaluation and rehabilitation, as necessary, of approximately 28,600 linear feet of existing gravity sewer, approximately 150 manholes, and associated service laterals within Metro's rights-of-way.

- Long Hunter Chase Pump Station

Following an increase in the frequency of wet-weather overflows associated with the Long Hunter Chase Pump Station in 2018, smoke testing was conducted in the upstream gravity

sewer in October 2018. Smoke testing revealed that many cleanouts in the area were broken, allowing inflow to enter the system during rainfall events. Repairs of those cleanouts were completed during the second quarter of 2020. Since the work was completed, an overflow occurred at the pump station on September 13, 2020, when the area experienced more than 6 inches of rainfall. Since that rainfall event far exceeded the CAP/ER's design criteria, no additional remedial measures are proposed at this time. The pump station's performance will continue to be monitored as part of Metro's ongoing CMOM activities.

- Mill Creek Pump Station

Because of the increased frequency of overflows in 2018 at the Mill Creek Pump Station, smoke testing of the gravity sewer upstream of the pump station was conducted in the fall of 2019. Investigations in the area identified that the overflow relief pipe associated with the pump station was defective, potentially allowing water to enter the sewer during periods of high river stage. The defective overflow relief pipe was repaired in December 2020. That repair has improved the system's performance; however, an overflow occurred on March 27, 2021, when the area experienced over 6 inches of rainfall. Since that rainfall event far exceeded the CAP/ER's design criteria, no additional remedial measures are proposed at this time. The pump station's performance will continue to be monitored as part of Metro's ongoing CMOM activities.

- Rowan Drive/ Cravath Drive

The Rowan Drive / Cravath Drive area, located in the northern portion of the Whites Creek WWTP service area, has experienced numerous rainfall-related overflows. Flow monitoring conducted in 2018 indicated that surcharging in the Rowan Drive / Cravath Drive area is not caused by surcharging in the trunk sewer along Whites Creek. Instead, the overflows appear to be caused by either a capacity issue within the local gravity sewer or an excessive amount of RDII entering the system. CCTV inspection of the 10-inch diameter gravity sewer near the overflows was completed in the summer of 2019, and a review of the data confirmed that the sewer is free of major blockages and significant sources of infiltration. Metro installed level sensors and conducted temporary flow monitoring in the area in 2020 to assess the frequency and extent of surcharging. Review and analysis of this data in the hydraulic model confirmed the need to reduce peak RDII flows. The Rowan / Cravath Rehabilitation project consists of the evaluation and rehabilitation, as necessary, of approximately 79,700 linear feet of existing gravity sewer, over 400 manholes, and service laterals within Metro's rights-of-way.

- South Oak Hill Pump Station

Because of the increased frequency of overflows at the South Oak Hill Pump Station during wet-weather events, Metro identified the area for additional investigation. An evaluation of the pump station's performance has been completed, and the pump station was determined to be operating as designed. Smoke testing of the gravity sewer system upstream of the pump station was completed in the fourth quarter of 2019. Additional field investigations completed in the second quarter of 2020 identified numerous locations where the pipe-to-manhole connection was defective, allowing infiltration to enter the system. Repairs of those manholes were completed in March 2021. Since the work was completed, an overflow occurred at the pump station on March 27, 2021, when the area experienced over 6 inches of rainfall. Since that rainfall event far exceeded the CAP/ER's design criteria, no additional remedial measures are

proposed at this time. The pump station's performance will continue to be monitored as part of Metro's ongoing CMOM activities.

- Sunliner Drive Pump Station

Because of the increased frequency of overflows at the Sunliner Pump Station during wet-weather events, Metro has identified the area for additional investigation. An evaluation of the pump station's performance has been completed, the pump impellers were replaced, and the force main was cleaned in February 2020. Smoke testing of the gravity sewer system upstream of the pump station was completed in the fourth quarter of 2019, and additional field investigations are scheduled for 2021. Identified and potential sources of RDII will be scheduled for repair as part of the Sunliner Gravity Sewer Repairs project.

- Wallace Lane / Abbott Martin Road

The Wallace Lane / Abbott Martin Road area is located in Green Hills and is part of the Whites Creek WWTP service area. In early 2019, a customer notified Metro of a potential issue in this area, and Metro has since confirmed that overflows occur at two manholes (116-12-076 and 116-16-040) during wet-weather events. Since notification of the issue, Metro has verified that the sewers in the immediate area are structurally sound and free of blockages that may reduce the sewer's capacity during high flow events. Metro has level sensors installed in the area to assess the frequency and extent of surcharging. Additional temporary flow monitoring was initiated in January 2020 and completed April 2020. Review and analysis of this data in the hydraulic model confirmed that redirecting some flow from the 8-inch diameter sewer (where the overflows occur) to the parallel 10-inch diameter sewer running along Wallace Lane will improve, but not fully address, the overflow. That redirection of flow was completed in the fourth quarter of 2020. To fully address wet-weather overflows at Wallace Lane and Abbott Martin Road, comprehensive rehabilitation will be conducted in the area upstream of the overflow to reduce peak RDII flows. This project, referred to as the Wallace Lane Rehabilitation project, includes the evaluation and rehabilitation, as necessary, of approximately 55,500 linear feet of existing gravity sewer, over 300 manholes, and associated service laterals within Metro's rights-of-way. Design for that work is scheduled to start in mid-2022.

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 Metro, local government, and the community through a public engagement campaign developed to solicit input from affected stakeholders.

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.

In a February 11, 2019, letter, EPA provided review comments to Metro on the LTCP and *Addendum to the LTCP*. Metro submitted a response letter dated March 6, 2019 with a proposed path forward.

On February 18, 2020, Metro met with representatives from EPA, TDEC, the U.S. Department of Justice, and the Tennessee Attorney General's office to discuss the path forward for the LTCP approval, among other topics. A follow-up conference call with all parties was held on April 4, 2020, with informal clarifications between parties continuing over the following months. On July 24, 2020, Metro submitted the *Addendum #2 to the LTCP*, clarifying and updating the proposed CSO abatement projects.

On December 7, 2020, Metro received a letter from EPA providing partial conditional approval to the LTCP and addenda. The letter approves the proposed control measures at the Benedict & Crutcher, Boscobel, Driftwood, and Schrader CSOs and approves the Central Wastewater Treatment Plant Capacity and CSO Reduction project. The letter requires that Metro, within four years, submit a revised LTCP that describes the control measures designed to bring the Kerrigan and Washington CSOs into compliance with Tennessee's water quality standards at the time of submittal. (TDEC is

currently reviewing the existing water quality standards.) The letter was agreed to and countersigned by Metro on December 8, 2020.

Active LTCP 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
- Sludge Transfer Facility (as part of Central WWTP Capacity Improvements and CSO Reduction)
- Van Buren Improvements
- Washington CSO Facility Improvements

3.2 LTCP Projects under Construction

The following LTCP project is anticipated to continue construction during the upcoming quarter:

- Central WWTP Capacity Improvements and CSO Reduction

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. 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, primary treatment, secondary aeration, final clarification systems, and other facilities without building new tankage.

Advertisement for design services for the Central WWTP Capacity Improvements and CSO Reduction project began in January 2015, and two design contracts were awarded in April 2015. Following contract negotiations and other designer procurement activities, design activities for both contracts began on September 21, 2015. The *Central WWTP Optimization 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 was completed by Hazen and Sawyer. The majority of other work at the plant was designed by Brown and Caldwell. Each firm's Notice-to-Proceed for detailed design was issued on June 23, 2017. Design for the headworks reached 100 percent in June 2019; design activities for the balance of the plant improvements were completed in April 2020.

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.

The Notice-to-Proceed was issued for construction of the headworks package on July 27, 2020, and the Notice-to-Proceed for construction of the balance of plant package was issued on September 28, 2020. Construction activities for the headworks, balance of plant, and other minor construction packages are underway and will continue through 2023. The Notice-to-Proceed for the 3rd Avenue Park North package was issued on June 1, 2021, and construction for that area will continue through mid-2022.

Work on-site continues, including construction of the influent and effluent chambers of the headworks facility, modifications to the chlorine contact/UV facility, construction of the return activated sludge (RAS) splitter box, conveyance piping installation, aeration tank modifications, maintenance building construction, and 3rd Avenue Park North improvements.

3.3 LTCP Projects under Design

There are currently no LTCP projects under design.

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 ongoing Consent Decree compliance.

4.1 2017 Annual Rehabilitation – Dry Creek

The 2017 Annual Rehabilitation – Dry Creek project, which is located in the Dry Creek WWTP's service area, consisted of the evaluation of approximately 57,900 linear feet of gravity sewer, ranging in diameter from 8 to 30 inches. The resulting construction project consists of the rehabilitation of approximately 27,100 linear feet of gravity sewer, associated manholes, and service laterals within Metro's rights-of-way and easements. 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 began on June 18, 2021, and quotes are due in mid-July. Construction procurement activities are anticipated to continue in the third quarter of 2021.

4.2 2017 Annual Rehabilitation – Shepherd Hills

The 2017 Annual Rehabilitation – Shepherd Hills project, which is located in the Dry Creek WWTP's service area, consisted of the evaluation of approximately 59,900 linear feet of gravity sewer, ranging in diameter from 8 to 30 inches. The resulting construction project consists of the rehabilitation of approximately 29,000 linear feet of gravity sewer, associated manholes, and service laterals within Metro's rights-of-way and easements. 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 2021.

4.3 2020 Annual Rehabilitation – West Nashville

For the 2020 Annual Rehabilitation – West Nashville project, Metro is focusing on addressing observed sources of infiltration / inflow within the sewer system in the southwest quadrant of the Whites Creek WWTP service area (upstream of the West Park Pump Station). This project will not take a comprehensive rehabilitation approach where a project area is defined, all sewers within the boundary are evaluated for rehabilitation, and lining is the default for small diameters sewers. Instead, the project will focus on making repairs necessary to address observed sources of infiltration / inflow and major structural defects. It will also consider nearby sewers for inclusion in the project based on their condition, the likelihood of water migration to adjacent sewers, and the impact to customers. Design of the rehabilitation project began on January 14, 2021, and is anticipated to continue through the upcoming quarter.

4.4 Howse Avenue Force Main Replacement

Following several breaks in 2019 and 2020 and replacement of a portion along/near Neely's Bend Road, Metro has elected to proactively replace approximately 3,200 feet of existing 16-inch force main from the Gibson Creek Pump Station to Howse Avenue south of Neely's Bend Road. The project will also include the installation of a portion (500 feet) of new force main which is part of the Neely's Bend Pump Station Upgrades project. Procurement of design services continued through the reporting period. Design is anticipated to begin during the upcoming quarter.

Section 5

Quarterly SSO and Dry-Weather CSO Report

During the reporting period, Metro experienced 29 SSOs, as listed in **Table 5-1**.

No dry-weather CSOs occurred during the reporting period.

Table 5-1 Quarterly SSO Report

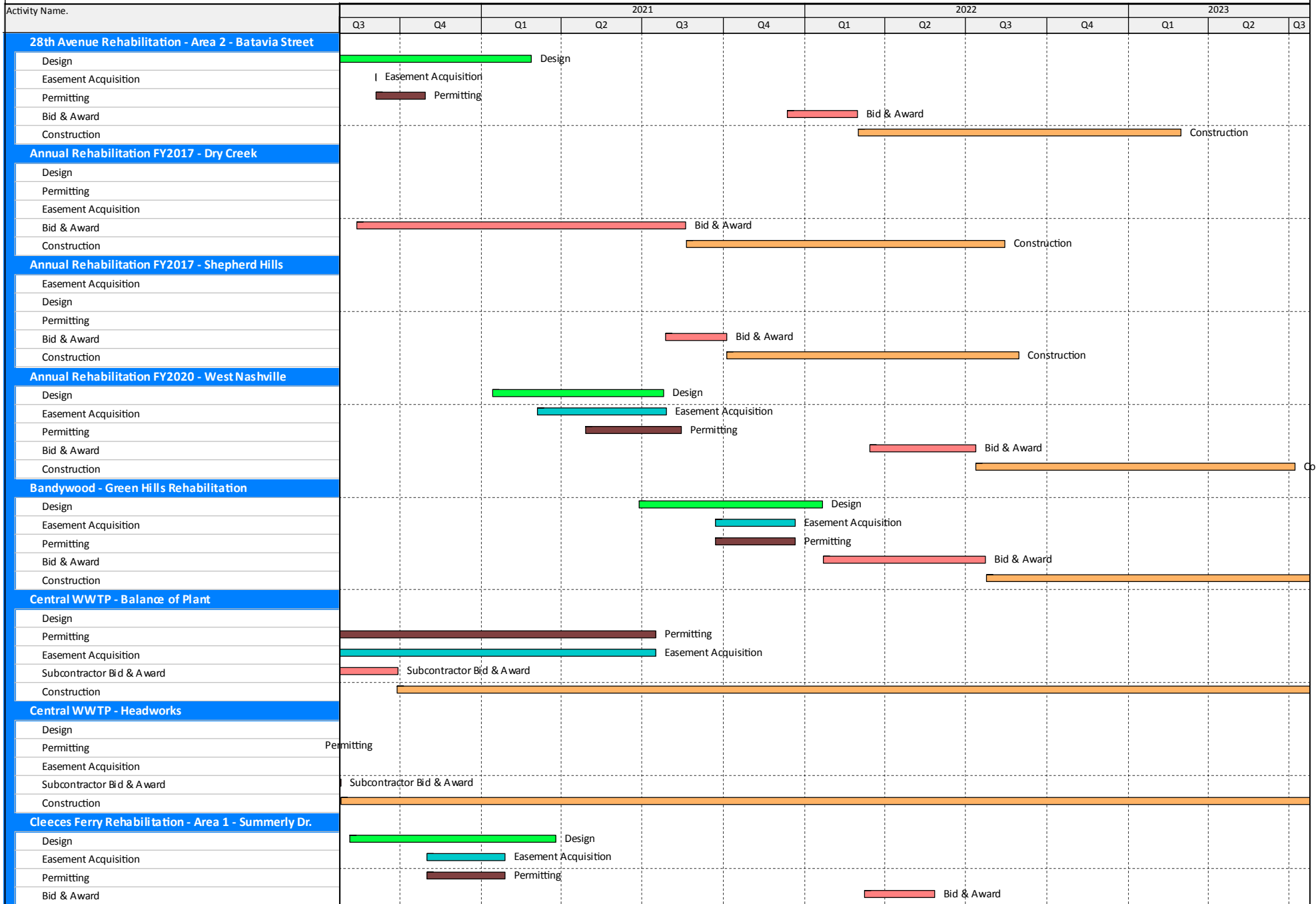
Quarterly SSO Report April 1 through June 30, 2021									
Event Start Date	Event End Date	Rainfall (inches)	Duration (hours)	Overflow Volume (MG)	Overflow Cause	Location Manhole ID	Location	Unpermitted Discharge	Building Backup
05-Apr-21	06-Apr-21	0	15.00	0.0001	Blockage	14812100	836 Irma Dr	Yes	No
08-Apr-21	08-Apr-21	0.50	12.00	0.03	Blockage	04116053	3711 Dickerson Pk	No	No
09-Apr-21	09-Apr-21	0	2.00	0.0001	Blockage	05008005	3502 Dickerson Pk	Yes	No
13-Apr-21	13-Apr-21	0	5.00	0.0001	Blockage	16102001	5007 Meta Dr	No	No
13-Apr-21	13-Apr-21	0	8.00	0.00001	Blockage	16212053	950 Brittany Park Dr	Yes	No
19-Apr-21	19-Apr-21	0	2.00	0.00001	Blockage	08101010	2001 Rivercliff Dr	No	No
20-Apr-21	20-Apr-21	0	1.50	0.00001	Blockage	12001086	1177 Murfreesboro Pk	Yes	No
26-Apr-21	27-Apr-21	0	24.00	0.0001	Blockage	14502011	4720 Chalmers Dr	Yes	No
30-Apr-21	30-Apr-21	0	2.00	0.00001	Blockage	10501035	1110 12th Ave S	No	No
03-May-21	03-May-21	0.78	2.92	0.051	Rainfall	10210012	Davidson Branch SPS	Yes	No
03-May-21	03-May-21	1.46	1.00	0.00001	Blockage	10506061	1203 Hillside Ave	Yes	No
03-May-21	04-May-21	2.67	20.00	0.001	Blockage	16204020	0 Blue Hole Rd	Yes	No
03-May-21	03-May-21	1.77	3.42	0.025	Rainfall	08410007	149 Barker Rd	Yes	No
04-May-21	06-May-21	1.41	18.92	0.19	Rainfall	08410007	149 Barker Rd	Yes	No
04-May-21	05-May-21	1.15	18.59	1.033	Rainfall	10210012	Davidson Branch SPS	Yes	No
07-May-21	07-May-21	0	2.00	0.0001	Blockage	17214109	2705 Campa Cir	Yes	No
08-May-21	08-May-21	0	0.50	0.00001	Blockage	18003022	6716 Holt Rd	No	No
08-May-21	09-May-21	0.82	29.00	0.00001	Line Break	10612019	895 Murfreesboro Pk	Yes	No
18-May-21	19-May-21	0	20.00	0.0001	Line Break	07211063	1432 Litton Ave	Yes	No
21-May-21	21-May-21	0	2.00	0.00001	Blockage	11313007	605 Dunston Dr	Yes	No
25-May-21	25-May-21	0	3.00	0.00005	Blockage	07404075	747 Linden Green	No	No
02-Jun-21	02-Jun-21	1.33	6.33	0.347	Rainfall	10210012	Davidson Branch SPS	Yes	No
03-Jun-21	03-Jun-21	0.11	4.00	0.0001	Blockage	18003068	7172 Holt Run Dr	No	No
10-Jun-21	10-Jun-21	0.06	3.00	0.00005	Blockage	09102079	1604 56th Ave N	Yes	No
11-Jun-21	11-Jun-21	0.43	0.10	0.0001	Other	09411001	1450 Lebanon Pk	Yes	No
12-Jun-21	12-Jun-21	0	1.00	0.00001	Blockage	15014091	6018 Mt View Rd	No	No
25-Jun-21	25-Jun-21	0	2.00	0.00001	Blockage	08308007	1045 Mitchell Rd	No	No
28-Jun-21	28-Jun-21	0	4.00	0.00001	Contractor	05110061	101 Ellington Pl	No	No
28-Jun-21	28-Jun-21	0	2.00	0.00001	Blockage	17204020	5897 Nolensville Pk	Yes	No

Appendix A

Schedule for Current and Upcoming Projects

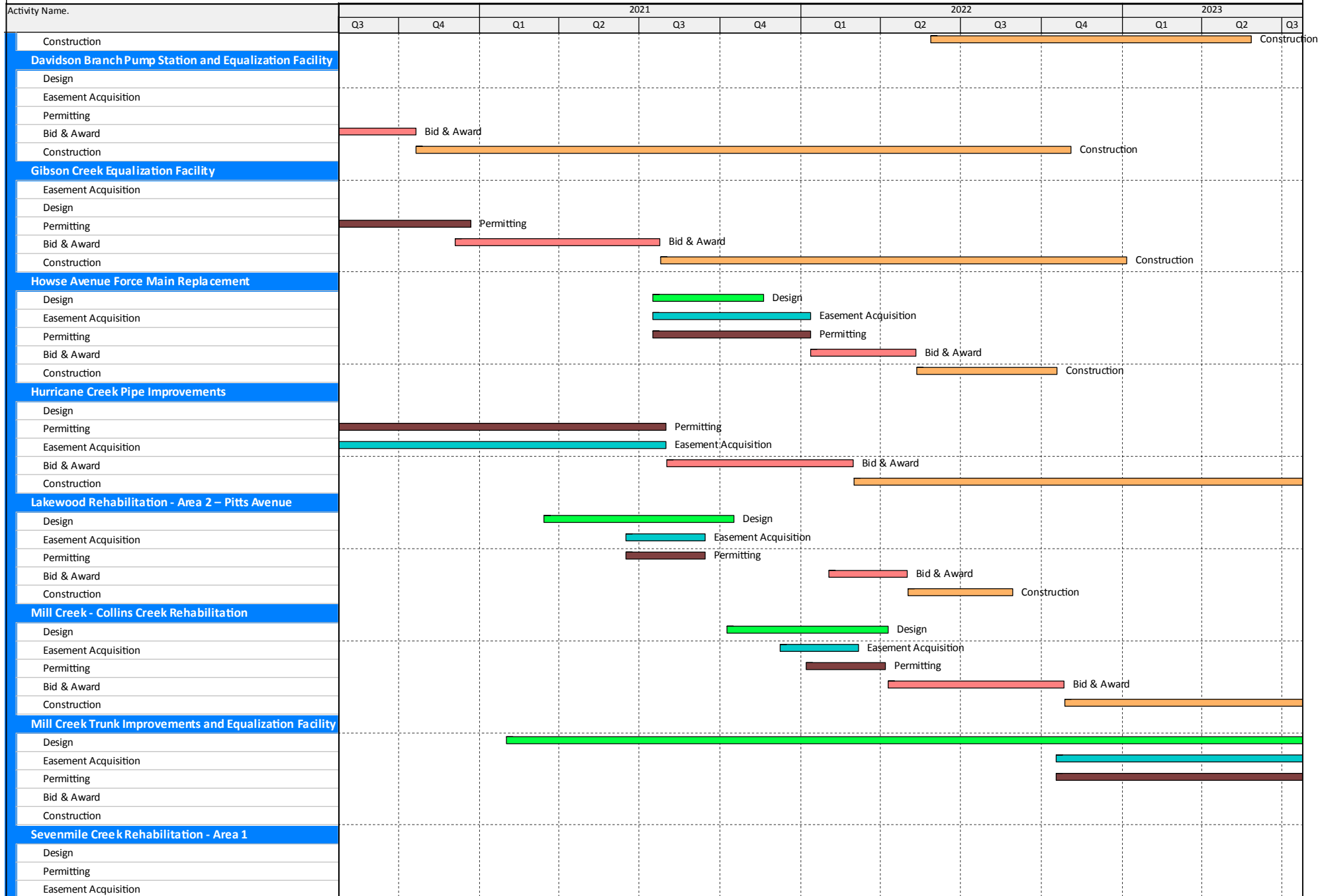
Note: The construction activity is through substantial completion.

Nashville Overflow Abatement Program 2021 Quarterly Progress Report - 2nd Quarter



Note: The construction activity is through substantial completion.

Nashville Overflow Abatement Program 2021 Quarterly Progress Report - 2nd Quarter



Note: The construction activity is through substantial completion.

Nashville Overflow Abatement Program 2021 Quarterly Progress Report - 2nd Quarter

Activity Name.	2021						2022				2023		
	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
Bid & Award						■							
Construction							■						
Shelby Park Rehabilitation - Area 6 - Shelby Trunk													
Design													
Permitting													
Easement Acquisition													
Bid & Award						■							
Construction							■						
Smith Springs Rehabilitation - Area 3 - Harbour Town													
Design													
Permitting													
Easement Acquisition													
Bid & Award													
Construction													