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January 27, 2022

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

Dear Colleagues,

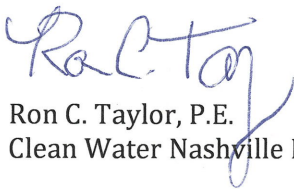
In accordance with the provisions of the Consent Decree, Section XIX (Reporting Requirements), Subsection A, herewith we are transmitting the Annual Report for 2021 and the Quarterly Progress Report which covers the period from October 1 through December 31, 2021.

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

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

If you have any questions concerning this report, do not hesitate to contact me.

Sincerely,



Ron C. Taylor, P.E.
Clean Water Nashville 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

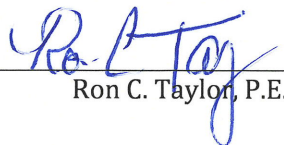
Clean Water Nashville Overflow Abatement Program

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

CONSENT DECREE QUARTERLY PROGRESS REPORT

October 1 through December 31, 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

1/21/22

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 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). On August 26, 2021, that document was approved by EPA in consultation with 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
- Bonnafair Pump Station Repairs
- 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
- Farmingham Woods Gravity Sewer (Tulip Grove Road)
- 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 – Area 1
- 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

- North Fork of Ewing Creek Manhole Repairs
- 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
- South Oak Hill Manhole Repairs
- Vandiver Rehabilitation
- West Park Equalization Storage Phase I
- West Park Equalization Facility Phase II
- Westchester Drive Rehabilitation
- Whites Creek Wastewater Pumping Station Improvements
- Whites Creek Wastewater Treatment Plant (WWTP) Optimization and Disinfection

Note that the completed project list excludes activities that are not associated with a capital project.

2.2 CAP/ER Projects under Construction

The following project began or 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.

- 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. Advertisement for construction began on March 23, 2021, and bid proposals were received on April 22, 2021. The construction Notice-to-Proceed was issued on August 9, 2021, and construction activities will continue through the upcoming quarter.

- Joelton Pump Station Upgrades

Following completion of the Joelton Rehabilitation project, the Joelton Pump Station continued to experience wet-weather overflows. Due to the persisting overflow and to address anticipated growth in the area, the Joelton Pump Station Upgrades project was developed. This project consists of two components – improvements to the station and upsizing of the force main. Construction activities for the pump station began in November 2021 and are anticipated to continue through the upcoming quarter. Design activities are underway for the force main upgrade with construction activities anticipated to begin during the third quarter of 2022.

- 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. Permitting activities were completed in December 2017. The resulting construction 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 bid proposals were received on November 12, 2020. Award activities, including coordination for approvals required by the State Revolving Fund (SRF) loan, continued through early 2021. The construction Notice-to-Proceed was issued on July 6, 2021, 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 late 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 conclude in the upcoming quarter. Advertisement for construction is also anticipated to occur in 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 late in the second quarter of 2022.

- 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 also complete. Advertisement for construction is anticipated to occur in the upcoming quarter.

- 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. This project also includes rehabilitating the sewer upstream of the Gail Drive, Villas of Lakemeade #1, and Villas of Lakemeade #2 Pump Stations. The total 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 was completed in November 2021. Advertisement for construction began on November 18, 2021, and construction quotations were received on December 16, 2021. Construction is anticipated to begin in 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. Design began on November 2, 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 indicated 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 2.5 miles of large diameter sewer, the addition of 60 million gallons of storage, construction of a supplemental drain line, and the addition of a wet-weather pump station with a 100 million gallons per day pumping capacity. Preliminary design began on February 1, 2021, and will continue during the upcoming quarter.

Additionally, Metro has procured a Construction Manager at Risk to 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 performance of the sewer system near the Barker Road overflow continues to be monitored.

- **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 is being 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 began on December 29, 2021, and quotations are due on February 3, 2022.

- **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 began on September 29, 2021, and construction quotations were received on October 28, 2021. The construction Notice-to-Proceed was issued on January 3, 2022, and construction activities will 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:

- Rowan Cravath Rehabilitation

The Rowan Cravath Rehabilitation area, located in the northern portion of the Whites Creek WWTP service area, has experienced numerous rainfall-related overflows. 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 and easements. It also includes approximately 2,600 linear feet of sewer upsizing to increase wet-weather capacity. 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.

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 the end of 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. Additional packages for site restoration and other improvements will be procured in the coming months.

Work on-site continues, including construction of the headworks facility, modifications to the chlorine contact/UV facility, installation of the channel large-bubble mixers, 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

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

- Benedict & Crutcher Sewer Separation

The Benedict & Crutcher Sewer Separation project was developed to eliminate the Benedict & Crutcher combined sewer overflow (CSO) by providing separate pipe systems for sanitary sewer flows and stormwater flows instead of the combined sewer system which conveys both flows in a single pipe network. Approximately 250 acres is targeted for sewer separation. Additional infrastructure improvements, such as water distribution system improvements, also will be constructed as part of this project. Design procurement activities are anticipated to begin during the upcoming quarter. Metro anticipates procurement of a single Designer to support this project along with the Boscobel and Schrader Sewer Separation projects.

- Boscobel Sewer Separation

The Boscobel Sewer Separation project was developed to eliminate the Boscobel CSO by providing separate pipe systems for sanitary sewer flows and stormwater flows instead of the combined sewer system which conveys both flows in a single pipe network. Approximately 250 acres is targeted for sewer separation. Additional infrastructure improvements, such as water distribution system improvements, also will be constructed as part of this project. Design procurement activities are anticipated to begin during the upcoming quarter. Metro anticipates procurement of a single Designer to support this project along with the Benedict & Crutcher and Schrader Sewer Separation projects.

- Schrader Sewer Separation

The Schrader Sewer Separation project was developed to eliminate the Schrader CSO by providing separate pipe systems for sanitary sewer flows and stormwater flows instead of the combined sewer system which conveys both flows in a single pipe network. Approximately 450 acres is targeted for sewer separation. Additional infrastructure improvements, such as water distribution system improvements, also will be constructed as part of this project. Design procurement activities are anticipated to begin during the upcoming quarter. Metro anticipates procurement of a single Designer to support this project along with the Benedict & Crutcher and Boscobel Sewer Separation projects.

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 quotations were received on July 15, 2021. The construction Notice-to-Proceed was issued on September 3, 2021, and construction activities will continue through the upcoming quarter.

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 began on August 5, 2021, and quotations were received on September 2, 2021. The construction Notice-to-Proceed was issued on October 18, 2021, and construction activities will continue through the upcoming quarter.

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 was completed in August 2021. Advertisement for construction is anticipated to occur in mid-2022.

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 diameter 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 linear feet) of new force main which is part of the Neely's Bend Pump Station Upgrades project. Design began on July 12, 2021, and was completed in December 2021. Easement acquisition activities are anticipated to continue during the upcoming quarter. Advertisement for construction is anticipated to begin once easements are obtained.

Section 5

Quarterly SSO and Dry-Weather CSO Report

During the reporting period, 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, 2021									
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-21	03-Oct-21	1.16	3.67	0.105	Rainfall	10210012	Davidson Branch SPS	Yes	No
13-Oct-21	13-Oct-21	0	0.50	0.0001	Other	09214021	350 28th Ave N	No	No
18-Oct-21	21-Oct-21	0	69.00	0.001	Blockage	13306103	411 Allied Dr	Yes	No
20-Oct-21	20-Oct-21	0	0.50	0.0001	Other	09214021	350 28th Ave N	No	No
25-Oct-21	26-Oct-21	1.32	24.00	0.00001	Blockage	13104116	1505 Shackelford Rd	No	No
25-Oct-21	25-Oct-21	1.45	4.75	0.166	Rainfall	10210012	Davidson Branch SPS	Yes	No
26-Oct-21	27-Oct-21	0	26.00	0.001	Blockage	03310061	1297 Dickerson Pk	Yes	No
26-Oct-21	26-Oct-21	0	4.00	0.0001	Blockage	11713043	1210 Grandview Dr	No	No
28-Oct-21	28-Oct-21	0.35	4.00	0.001	Blockage	08310014	2009 Sevier St	Yes	No
01-Nov-21	01-Nov-21	0	4.00	0.00001	Blockage	10505098	910 Reservoir Ct	No	No
01-Nov-21	01-Nov-21	0.01	7.00	0.0001	Blockage	16307051	1382 Rural Hill Rd	No	No
02-Nov-21	03-Nov-21	0	13.00	0.00001	Blockage	12001004	1000 Thompson Pl	Yes	No
16-Nov-21	16-Nov-21	0.01	3.00	0.00001	Blockage	14616098	5127 Stallworth Dr	No	No
17-Nov-21	18-Nov-21	0.31	2.00	0.001	Blockage	16206095	200 Old Tusculum Rd	Yes	No
23-Nov-21	23-Nov-21	0	6.00	0.001	Blockage	10416030	2206 Belmont Blvd	No	No
01-Dec-21	01-Dec-21	0.15	5.00	0.001	Blockage	13001059	232 Harding Pl	Yes	No
06-Dec-21	06-Dec-21	1.17	7.83	0.465	Rainfall	10210012	Davidson Branch SPS	Yes	No
06-Dec-21	06-Dec-21	1.29	2.00	0.00001	Blockage	05302056	1304 Fuller St	No	No
10-Dec-21	11-Dec-21	0.90	18.00	0.00001	Line Break	10504061	13 Trimble St	No	No
11-Dec-21	21-Nov-21	0.66	2.00	0.01	Electrical	17112103	Banbury Crossing SPS	Yes	No
11-Dec-21	11-Dec-21	0.75	2.00	0.01	Electrical	05409018	Lakemeade #2 SPS	Yes	No
11-Dec-21	11-Dec-21	0.89	1.00	0.01	Electrical	05209047	Rainbow Terrace SPS	Yes	No
11-Dec-21	11-Dec-21	0.62	8.25	0.364	Rainfall	10210012	Davidson Branch SPS	Yes	No
11-Dec-21	11-Dec-21	0.84	1.25	0.043	Rainfall	05116016	Loves Branch SPS	Yes	No
13-Dec-21	14-Dec-21	0	24.00	0.00001	Blockage	07109002	1501 Baptist World Center Dr	No	No
13-Dec-21	13-Dec-21	0	4.00	0.0001	Blockage	16406011	3514 Pin Hook Rd	No	No
17-Dec-21	17-Dec-21	1.17	10.58	0.431	Rainfall	10210012	Davidson Branch SPS	Yes	No
21-Dec-21	22-Dec-21	0	21.00	0.0001	Blockage	13001013	105 Harding Pl	No	No
23-Dec-21	23-Dec-21	0	2.00	0.0001	Blockage	17203023	5881 Woodlands Ave	Yes	No

Quarterly SSO Report October 1 through December 31, 2021

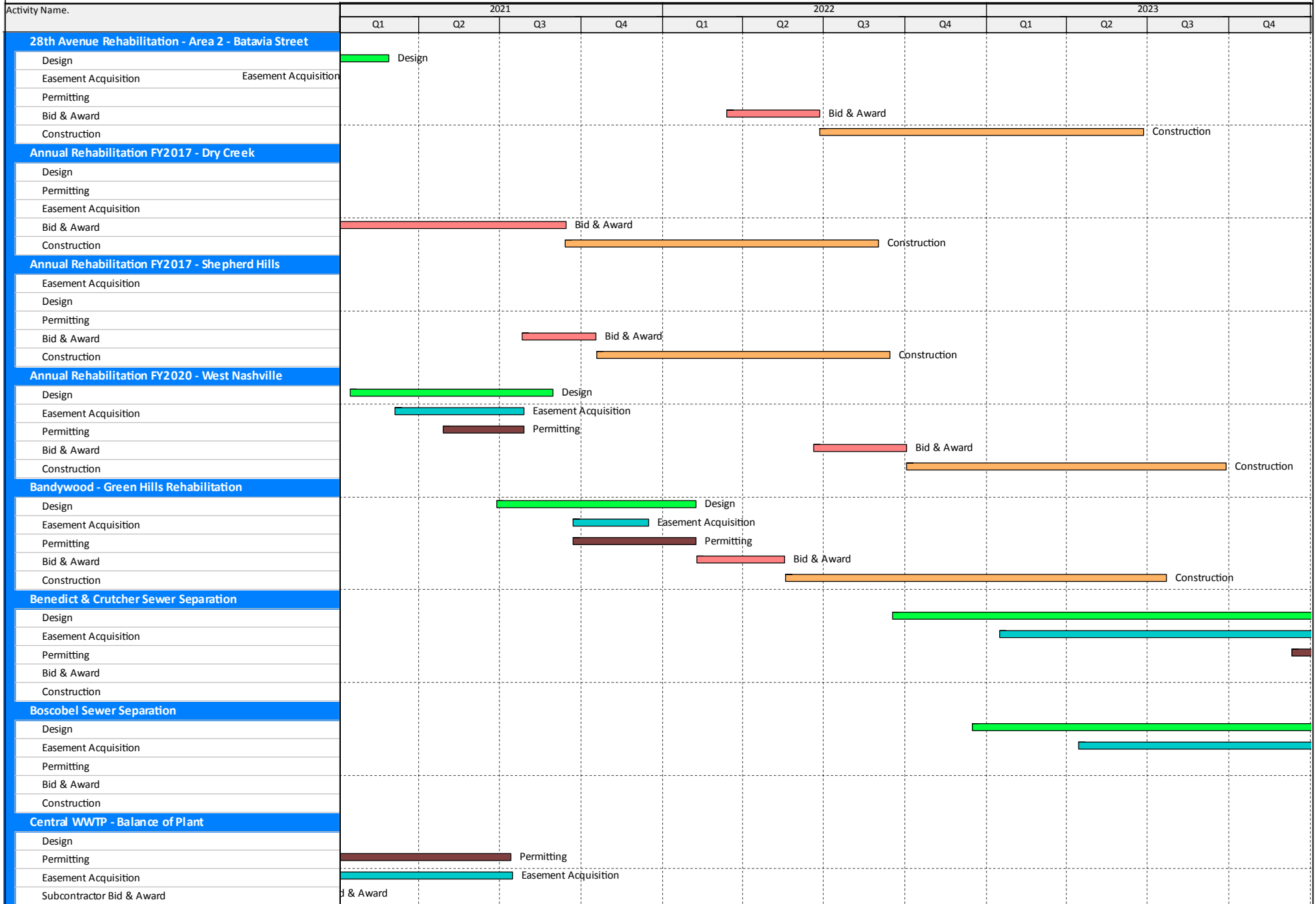
Event Start Date	Event End Date	Rainfall (inches)	Duration (hours)	Overflow Volume (MG)	Overflow Cause	Location Manhole ID	Location	Unpermitted Discharge	Building Backup
23-Dec-21	23-Dec-21	0	2.00	0.0001	Blockage	17203023	5877 Woodlands Ave	Yes	No
23-Dec-21	23-Dec-21	0	1.00	0.0001	Blockage	16309084	1220 Bell Rd	Yes	No
27-Dec-21	27-Dec-21	0	1.00	0.0001	Blockage	16103054	521 Brewer Dr	Yes	No
28-Dec-21	28-Dec-21	0.07	1.00	0.00001	Blockage	04004015	501 Hickory Hills Blvd	No	No
31-Dec-21	31-Dec-21	0	2.00	0.0001	Blockage	14815023	4963 Barella Dr	Yes	No

Appendix A

Schedule for Current and Upcoming Projects

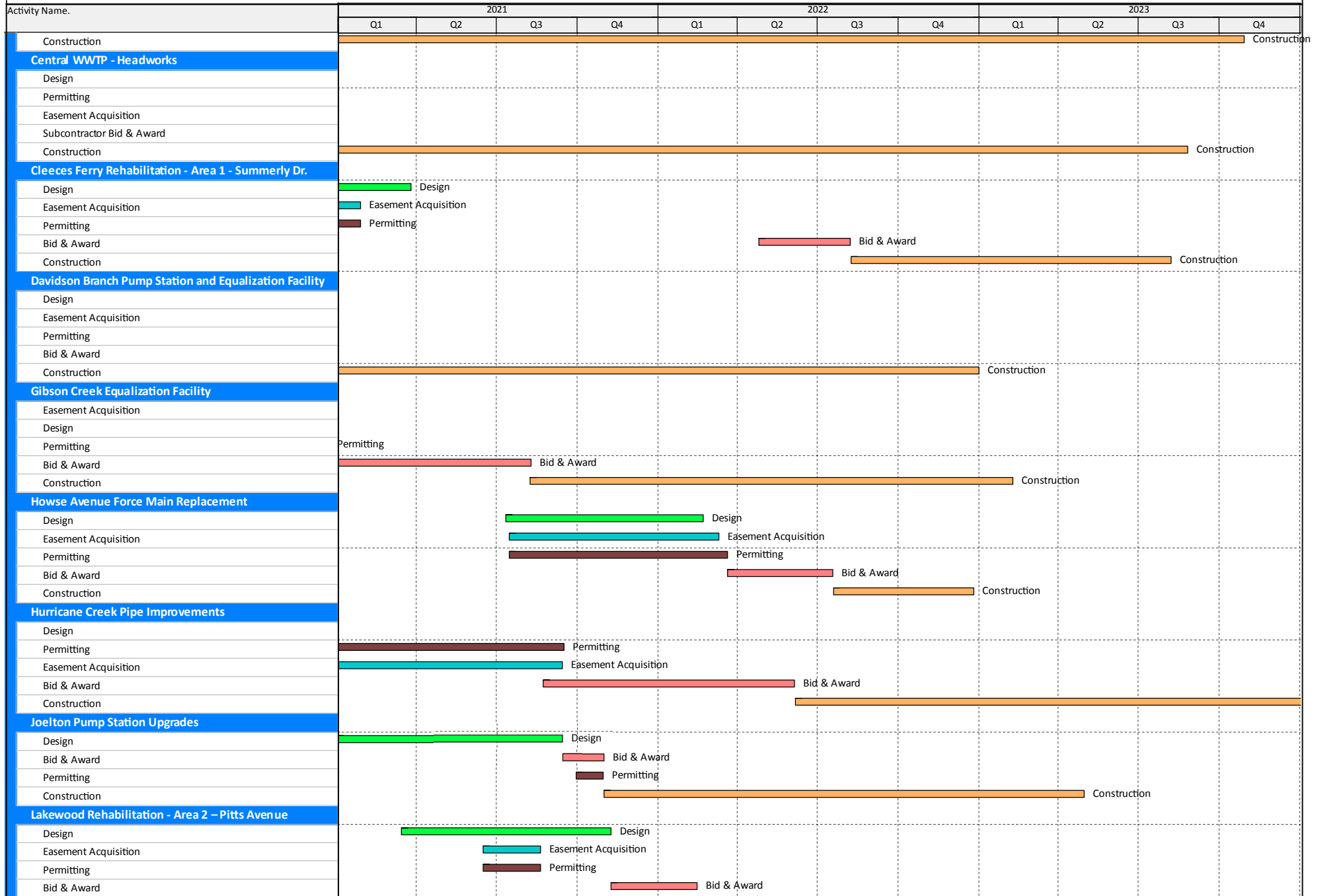
Note: The construction activity is through substantial completion.

Nashville Overflow Abatement Program 2021 Quarterly Progress Report - 4th Quarter



Note: The construction activity is through substantial completion.

Nashville Overflow Abatement Program 2021 Quarterly Progress Report - 4th Quarter



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Nashville Overflow Abatement Program 2021 Quarterly Progress Report - 4th Quarter

