

Clean Water Nashville Overflow Abatement Program

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

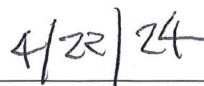
CONSENT DECREE QUARTERLY PROGRESS REPORT

January 1 through March 31, 2024

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* that 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 are described below.

- *Spill and Overflow Response Plan (Section VII.C.2)* – Metro continues to follow the Spill and Overflow Response Plan (SORP). A revised version of the SORP was submitted to the U.S. Environmental Protection Agency (EPA) for review and approval in May 2022.
- *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* and submitted it 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.

In a letter dated March 31, 2022, Metro informed EPA and TDEC that design work on the Mill Creek Trunk Improvements and Equalization Facility project had been paused due to new information that called into question whether the project as envisioned will meet the CAP/ER's performance requirements. As assessment of potential alternatives in that area continued, it became clear that Nashville's unprecedented growth, as well as the current economic climate, may impact numerous CAP/ER projects. In a letter dated November 30, 2022, Metro requested adjustments to the schedule

for several projects to allow additional time to understand those impacts. Following discussions with EPA and TDEC, Metro revised the requested schedule adjustments in a letter dated January 25, 2023. Those adjustments, which were approved by EPA in a letter dated March 7, 2023, allow Metro to delay initiating several projects to prepare a *CAP/ER and Sewer Master Plan Update*.

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
- Annual Rehabilitation FY2017 – Dry Creek
- Annual Rehabilitation FY2017 – Shepherd Hills
- 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
- Davidson Branch Pump Station and Equalization Facility
- 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 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 – Area 1
- Lakewood Rehabilitation – Area 2 – Pitts Avenue
- 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
- Sevenmile Creek Rehabilitation – Area 1
- 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
- Shelby Park Rehabilitation – Area 6 – Shelby Trunk
- Smith Springs Equalization Storage
- Smith Springs Rehabilitation – Area 1 – Priest Lake Meadows
- Smith Springs Rehabilitation – Area 2 – Castlegate
- Smith Springs Rehabilitation – Area 3 – Harbour Town
- South Oak Hill Manhole Repairs
- Sunliner Gravity Sewer 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
- Williamson Ferry Gravity Sewer Repairs

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:

- 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 evaluated for rehabilitation included approximately 49,500 linear feet of gravity sewer and 272 manholes. Design began on May 19, 2020. 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 began on March 29, 2022, and construction quotations were received on April 28, 2022. The construction Notice-to-Proceed was issued on July 25, 2022, and construction activities were substantially complete on March 14, 2024.

- Bandywood - Green Hills Rehabilitation

The Bandywood - Green Hills Rehabilitation project is a sewer rehabilitation project for the portion of the Green Hills area near Sugartree Creek in the Richland Creek basin. The area evaluated for rehabilitation included approximately 59,000 linear feet of gravity sewer and 358 manholes. Design began on June 28, 2021, and it was completed in January 2022. The resulting project consists of the rehabilitation of approximately 48,000 linear feet of gravity sewer, associated manholes, and service laterals within Metro’s rights-of-way and easements. Advertisement for construction began on February 15, 2022, and quotations were received on March 18, 2022. The construction Notice-to-Proceed was issued on May 30, 2022. Construction activities continued through the reporting period and are anticipated to be substantially complete in April 2024.

- 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 evaluated for rehabilitation included approximately 53,100 linear feet of gravity sewer and 299 manholes. Design began on August 6, 2020. 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 began on May 9, 2022, and quotations were received on June 9, 2022. The construction Notice-to-Proceed was issued on August 22, 2022, and construction activities are underway and will continue through the upcoming quarter. To utilize remaining contractual funding, additional sewer rehabilitation scope was added to this project and includes repairs in the

Sunliner Pump Station area (completed last quarter) as well as additional investigative work in the Nations/West Park neighborhood.

- Foster Avenue Rehabilitation

The Foster Avenue Rehabilitation project is a sewer rehabilitation project located near Nolensville Pike and Thompson Lane in the Mill Creek basin. The project consists of the evaluation and rehabilitation, as necessary, of approximately 57,100 linear feet of existing gravity sewer, over 350 manholes, and service laterals within Metro's rights-of-way and easements. Design began on May 31, 2022, and it was completed in November 2022. The resulting construction project consists of the rehabilitation of approximately 50,400 linear feet of gravity sewer, associated manholes, and service laterals within Metro's rights-of-way and easements. Advertisement for construction began on January 11, 2023, and construction quotations were received on February 23, 2023. The construction Notice-to-Proceed was issued on April 24, 2023, and construction activities will continue through 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 permitting and easement acquisition activities were completed in late 2021. Advertisement for construction began on January 25, 2022, and bids were received on March 11, 2022. The construction Notice-to-Proceed was issued on June 3, 2022, 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 were substantially complete on September 22, 2022. Design activities for the force main upgrade are complete, and easement acquisition is underway. That work is anticipated to continue through the upcoming quarter. Advertisement for construction activities will commence once all easements are obtained.

- Rowan Cravath Gravity Sewer Upsizing

The Rowan Drive / Cravath Drive area, located in the northern portion of the Whites Creek Water Reclamation Facility (WRF) service area, has experienced numerous rainfall related overflows. The Rowan Cravath Gravity Sewer Upsizing project includes approximately 3,000 linear feet of sewer upsizing to increase wet-weather capacity. Design began on April 4, 2022, and it was completed in February 2023. Advertisement for construction began on May 11, 2023, and quotations were received on June 14, 2023. The construction

Notice-to-Proceed was issued on August 28, 2023, and construction activities will continue through the upcoming quarter.

- Rowan Cravath Rehabilitation

The Rowan Cravath Rehabilitation project, located in the northern portion of the Whites Creek WRF service area, 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. Design began on April 4, 2022, and it was completed in December 2022. The resulting construction project consists of the rehabilitation of approximately 45,000 linear feet of gravity sewer, associated manholes, and service laterals within Metro's rights-of-way and easements. Advertisement for construction began on April 23, 2023, and quotations were received on May 25, 2023. The construction Notice-to-Proceed was issued on July 31, 2023, and construction activities will continue through the upcoming quarter.

- Wallace Lane Rehabilitation

The Wallace Lane Rehabilitation project, located in the Green Hills neighborhood, consists of the evaluation and rehabilitation, as necessary, of approximately 55,000 linear feet of existing gravity sewer, approximately 320 manholes, and service laterals within Metro's rights-of-way and easements. Design began on August 23, 2022, and it was completed in February 2023. However, Metro elected to conduct additional investigations of service laterals in the area to refine the design prior to initiating construction. The resulting construction project consists of the rehabilitation of approximately 30,000 linear feet of gravity sewer, associated manholes, and service laterals within Metro's rights-of-way and easements. Advertisement for construction began on November 7, 2023, and quotations were received on December 7, 2023. The construction Notice-to-Proceed was issued on March 25, 2024, 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:

- Cowan Street Pump Station Upgrades

During the initial development of the CAP/ER, the Cowan Street Pump Station Upgrades project was intended to expand the pumping capacity of the Cowan Street Pump Station to approximately 15 mgd, with the final sizing dependent on the success of upstream sewer rehabilitation. However, recent analyses indicate that a much larger station (~30 mgd) is required to accommodate the area's significant projected growth, including the adjacent Oracle campus and River North developments. The developer for the Oracle campus, with input from Metro, is designing and constructing the required pump station improvements. Those design efforts are currently underway and will continue through the upcoming quarter.

- Dry Creek Area Improvements

The Dry Creek Area Improvements project is a group of pump stations, force mains, and gravity sewer pipe projects located upstream of the Dry Creek WRF. It includes the following CAP/ER projects:

1. Berwick Trail Pump Station Upgrades
2. Dry Creek Pipe Improvements
3. Hidden Acres Pump Station Upgrades
4. Loves Branch Pump Station Upgrades
5. Neely's Bend Pump Station Upgrades
6. Vandiver Pump Station Upgrades

Design for the *Preliminary Engineering Report* phase began on January 26, 2023, and the *Preliminary Engineering Report* was finalized in late March 2024. As a result of that study, the Neely's Bend Pump Station Upgrades project was determined to be unnecessary to meet the goals of the CAP/ER, although MWS still plans to replace the station due to age and condition within the next decade (outside of the Consent Decree).

Based on the priorities established through the *Preliminary Engineering Report*, MWS has established a staggered schedule for completion of detailed design and construction. The following projects are anticipated to begin detailed design in the upcoming quarter:

1. Loves Branch Pump Station Interim Improvements
2. Hidden Acres Pump Station Upgrades
3. Vandiver Pump Station Upgrades

The status of these projects will be separately tracked in future *Quarterly Progress Reports* with additional projects reported on as they initiate detailed design.

- Henry Ford Drive Rehabilitation

The Henry Ford Drive Rehabilitation project is located in the Charlotte Park area of western Nashville, upstream of the West Park Pump Station. The project consists of the evaluation and rehabilitation, as necessary, of approximately 58,500 linear feet of existing gravity sewer, approximately 300 manholes, and service laterals within Metro's rights-of-way and easements. Design began on January 23, 2023, and it was completed in July 2023. The resulting construction project consists of the rehabilitation of approximately 30,000 linear feet of gravity sewer, associated manholes, and service laterals within Metro's rights-of-way and easements. Advertisement for construction began on February 7, 2024, and quotations were received on March 14, 2024. Construction activities are anticipated to begin late in the upcoming quarter following award of the contract.

- Mill Creek – Collins Creek Rehabilitation

The Mill Creek – Collins Creek Rehabilitation project is a sewer rehabilitation project planned for a portion of the Antioch area near Interstate 24 and Bell Road. The area evaluated for rehabilitation included approximately 69,000 linear feet of gravity sewer, including sewers up to 42 inches in diameter. Design began on November 2, 2021, and as design progressed, Metro determined that the project should be split into two projects for construction. Design of Mill Creek – Collins Creek Rehabilitation – Area 1 was completed in May 2022, and design of Mill Creek – Collins Creek Rehabilitation – Area 2 was completed in June 2022. Advertisement for construction will be delayed several years to allow Metro to focus on high-priority projects.

- Towne Village Pump Station Upgrades

Although not included in the CAP/ER, investigations to address wet-weather overflows and surcharging upstream and downstream of the Towne Village Pump Station have prompted Metro to plan for the expansion of the station’s capacity and the re-routing of its force main. Design of this work is being completed by the Designer of the Dry Creek Area Improvements project, although the work is anticipated to follow a different schedule due to the need to coordinate with the Army Corps of Engineers to acquire the site of the new facility. Activities associated with siting the new pump station have continued through the reporting period. Additionally, preliminary engineering design activities were initiated on January 26, 2023, and the *Preliminary Engineering Report* will be finalized in April 2024. Detailed design is anticipated to begin in the upcoming quarter.

- Tuckahoe and Nesbitt Rehabilitation

The Tuckahoe and Nesbitt Rehabilitation project is located in the northern portion of the Whites Creek WRF service area. Numerous manholes in the project area were rehabilitated in late 2020 through early 2021 as part of the North Fork of Ewing Creek Manhole Repairs project; however, it appears that additional rehabilitation is required to address observed sources of infiltration and inflow. Design began on October 17, 2023, and it is anticipated to conclude in the upcoming quarter.

2.4 Upcoming CAP/ER Projects

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

- Hopedale Rehabilitation

The Hopedale Rehabilitation project is located in the Sevenmile Creek area of the Central WRF service area. The area evaluated for rehabilitation included approximately 30,000 linear feet of small-diameter gravity sewer. Procurement of design services for this project is anticipated to begin during the upcoming quarter.

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

2.5 Additional CAP/ER Project Notes

Given the current economic climate and Metro's unprecedented growth, Metro requested, and EPA and TDEC approved, the delay of several projects while Metro completes a *CAP/ER and Sewer Master Plan Update*. (Refer to Metro's letters dated November 30, 2022, and January 25, 2023, and EPA's letter dated March 7, 2023.) Although schedule delays for certain projects were approved, given the long duration to plan, design, and construct some projects, the following projects are not anticipated to meet their approved completion dates:

- 28th Avenue Rehabilitation – Future Areas
- Berwick Trail Pipe Improvements
- Cowan Street Pipe Improvements
- Dodson Chapel - McCrory Creek Study and Future Projects
- Dry Creek Pipe Improvements
- Highway 100 & Tyne Boulevard Pipe Improvements
- Mill Creek Rehabilitation – Future Areas
- Mill Creek Trunk Improvements and Equalization Facility
- Norman Drive Pipe Improvements
- Peppertree Forrest Pump Station Upgrades
- Riverside Drive Pump Station Upgrades
- Shelby Park Rehabilitation – Future Areas
- Smith Springs Rehabilitation – Future Areas

These delays allow Metro to accelerate projects not sensitive to growth and those that have the greatest benefit towards addressing overflows and protecting public health and the environment.

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 *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 has reviewed and proposed revisions to the existing water quality standards as part of their triennial

review which is currently underway.) The letter was agreed to and countersigned by Metro on December 8, 2020.

As part of Metro’s discussions with EPA and TDEC regarding CAP/ER project milestones, Metro also requested adjustments to the completion dates for three LTCP projects – Benedict & Crutcher Sewer Separation, Boscobel Sewer Separation, and Schrader Sewer Separation. The revised completion dates were approved by EPA in a letter dated March 7, 2023.

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 improvements 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 function 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 facility achieved substantial completion on March 14, 2024. The balance of plant and other minor construction packages are underway and will continue into 2024.

On-going work during the reporting period included start-up of the headworks facility, conveyance piping installation and tie-ins, odor control modifications, testing and startup, equipment and controls optimization, paving, and surface restoration.

3.3 LTCP Projects under Design

The following projects, discussed in the LTCP, were under design during the reporting period:

- 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, will also be constructed as part of this project. Metro selected a single Designer to support this project along with the Boscobel and Schrader Sewer Separation projects. Preliminary engineering design activities for the combined projects began on November 15, 2022, and that work is expected to continue through the upcoming quarter.

Additionally, Metro has procured a Construction Manager at Risk to provide pre-construction services during the design phase and function as the general contractor during the construction phase of this project. The Notice-to-Proceed for the Construction Manager at Risk was issued on April 6, 2023.

- 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, will also be constructed as part of this project. Metro selected a single Designer to support this project along with the Benedict & Crutcher and

Schrader Sewer Separation projects. Design activities for the combined projects began on November 15, 2022, and that work is expected to continue through the upcoming quarter.

Additionally, Metro is procured a Construction Manager at Risk to provide pre-construction services during the design phase and function as the general contractor during the construction phase of this project. The Notice-to-Proceed for the Construction Manager at Risk was issued on April 6, 2023.

- 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, will also be constructed as part of this project. Metro selected a single Designer to support this project along with the Benedict & Crutcher and Boscobel Sewer Separation projects. Design activities for the combined projects began on November 15, 2022, and that work is expected to continue through the upcoming quarter.

Additionally, Metro procured a Construction Manager at Risk to provide pre-construction services during the design phase and function as the general contractor during the construction phase of this project. The Notice-to-Proceed for the Construction Manager at Risk was issued on April 6, 2023.

3.4 Upcoming LTCP Projects

There are currently no LTCP projects scheduled to begin or continue procurement for design services 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 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 WRF service area (upstream of the West Park Pump Station). This project did 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 focused on making repairs necessary to address observed sources of infiltration / inflow and major structural defects. It also considered nearby sewers for inclusion in the project based on their condition, the likelihood of water migration to adjacent sewers, and the impact to customers. The resulting construction project consists of the rehabilitation of approximately 30,800 linear feet of gravity sewer, associated manholes, and service laterals within Metro’s rights-of-way and easements. Design of the rehabilitation project began on January 14, 2021, and it was completed in August 2021. Advertisement for construction began on September 13, 2022, and quotations were received on October 25, 2022. The construction Notice-to-Proceed was issued on January 23, 2023, and construction activities will continue through the upcoming quarter.

4.2 Annual Rehabilitation – Manhole Repairs

Continuing sewer rehabilitation work outside of CAP/ER project areas, the Annual Rehabilitation – Manhole Repairs project focuses on correcting observed sources of infiltration / inflow and structural defects identified in over 500 manholes as part of Clean Water Nashville’s trunk walking and manhole inspection activities. The project includes manholes throughout the system with more significant numbers of repairs along and upstream of the West and Middle Forks of Browns Creek, upstream of Cloverbottom Pump Station, and in the McCrory Creek and Dodson Chapel areas. Design began in April 2022 and was completed in July 2022. Advertisement for construction began on August 9, 2022, and quotations were received on September 8, 2022. The construction Notice-to-Proceed was issued on October 22, 2022. To utilize remaining construction contract funding, more than 150 additional manholes requiring similar repairs were added to the project. These manholes are located upstream of the Riverside Drive Pump Station, Loves Branch Pump Station, and in the Little Creek area. Construction activities will continue through the upcoming quarter.

4.3 Annual Rehabilitation – Bordeaux and Metro Center

For the Annual Rehabilitation – Bordeaux and Metro Center project, Metro has reviewed available data to identify sources of infiltration / inflow and major structural defects within the sewer system upstream of the Bordeaux Hills, Bordeaux Hospital, Fairway Center, and Metro Center Pump Stations. Available data for those areas include CCTV inspections, smoke testing data, and field inspections.

Although the rehabilitation is not comprehensive, it considers 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 began in August 2022 and was completed in July 2023. The resulting construction project consists of the rehabilitation of approximately 21,100 linear feet of gravity sewer, associated manholes, and service laterals within Metro's rights-of-way and easements. Advertisement for construction began on August 8, 2023, and quotations were received on September 7, 2023. The construction Notice-to-Proceed was issued on December 4, 2023. Construction will continue through the upcoming quarter.

Note that previously this project was referred to as the Annual Rehabilitation – Pump Station Basins project.

4.4 Annual Rehabilitation – FY2023

For the Annual Rehabilitation – FY2023 project, Metro is reviewing available data to identify sources of infiltration / inflow and major structural defects within the sewer system in the upper Whites Creek WRF basin. Available data for that area includes CCTV inspections, smoke testing data, and field inspections. Although the rehabilitation is not anticipated to be comprehensive, it will 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 is anticipated to begin in the upcoming quarter.

Section 5

Quarterly SSO and Dry-Weather CSO Report

During the reporting period, Metro experienced 66 SSOs, as listed in **Table 5-1**.

No dry-weather CSOs occurred during the reporting period.

Table 5-1 Quarterly SSO Report

Quarterly SSO Report January 1 through March 31, 2024									
Event Start Date	Event End Date	Rainfall (inches)	Overflow Duration (hours)	Overflow Volume (MG)	Overflow Cause	Location Manhole ID	Location	Unpermitted Discharge	Building Backup
04-Jan-24	04-Jan-24	0.00	3.00	0.0002	Blockage	16203071	104 Panamint Dr	Yes	No
08-Jan-24	08-Jan-24	0.56	1.00	0.00001	Blockage	12912008	6311 Percy Dr	Yes	No
09-Jan-24	09-Jan-24	0.98	6.00	0.001	Blockage	16303023	727 Bell Rd	Yes	No
12-Jan-24	12-Jan-24	1.19	7.50	0.09	Rainfall	09510050	501 Bismark Dr	Yes	No
12-Jan-24	12-Jan-24	1.11	4.00	0.018	Rainfall	10612023	305 Millwood Dr	Yes	No
13-Jan-24	13-Jan-24	1.25	2.00	0.00001	Blockage	10407151	2801 Belcourt Ave	No	Yes
22-Jan-24	22-Jan-24	0.00	1.00	0.0001	Blockage	10807019	3108 Elm Hill Pk	Yes	No
23-Jan-24	29-Jan-24	0.00	144.00	0.02	Power / Contractor	NA	Hamilton BMX PS	Yes	No
23-Jan-24	25-Jan-24	1.31	44.50	0.00001	External Damage	10501180	1216 Edgehill Ave	Yes	Yes
25-Jan-24	26-Jan-24	1.54	25.00	0.75	Rainfall	09510050	501 Bismark Dr	Yes	No
25-Jan-24	25-Jan-24	1.54	5.58	0.374	Rainfall	08410007	149 Barker Rd	Yes	No
25-Jan-24	25-Jan-24	1.55	3.50	0.3	Rainfall	06208003	Hidden Acres PS	Yes	No
25-Jan-24	26-Jan-24	1.31	6.00	0.001	Rainfall	11907144	765 Old Glenrose Ave	Yes	No
25-Jan-24	26-Jan-24	1.31	12.50	0.001	Rainfall	10616031	305 Millwood Dr	Yes	No
25-Jan-24	26-Jan-24	1.31	11.00	0.0005	Rainfall	11907049	765 Old Glenrose Ave	Yes	No
26-Jan-24	26-Jan-24	1.36	1.00	0.00001	Blockage	16206113	213 Sterry Ct	No	No
26-Jan-24	26-Jan-24	0.00	2.00	0.01	Air Relief Valve	08601134	Dodson Chapel PS	No	No
27-Jan-24	27-Jan-24	0.47	1.00	0.0001	External Damage	04915003	3410 Knight Dr	No	No
29-Jan-24	30-Jan-24	0.02	3.50	0.001	Blockage	15009115	617 Forest Pointe Pl	Yes	No
30-Jan-24	30-Jan-24	0.00	1.50	0.0001	Vandalism	00216001	112 East End Rd	No	No
01-Feb-24	01-Feb-24	0.00	3.50	0.00002	Blockage	17502099	2128 Preserve Cir	No	Yes
02-Feb-24	03-Feb-24	0.00	28.00	0.0001	Blockage	08612122	4948 Myra Dr	No	No
05-Feb-24	05-Feb-24	0.00	2.00	0.00001	Blockage	07310019	3720 Moss Rose Dr	No	Yes
05-Feb-24	06-Feb-24	0.00	28.00	0.0001	Blockage	WMN33P57	2476 Titans Ln	No	No
07-Feb-24	07-Feb-24	0.00	8.50	0.00001	Blockage	16210102	109 Bess Ct S	No	No
08-Feb-24	08-Feb-24	0.00	2.00	0.0001	Blockage	08616029	1412 Central Ct	No	No
11-Feb-24	11-Feb-24	1.26	21.00	0.4	Rainfall	09510050	501 Bismark Dr	Yes	No
11-Feb-24	11-Feb-24	1.40	0.58	0.01	Rainfall	08410007	149 Barker Rd	Yes	No
11-Feb-24	11-Feb-24	1.26	11.00	0.07	Rainfall	11907049	765 Old Glenrose Ave	Yes	No

Quarterly SSO Report January 1 through March 31, 2024

Event Start Date	Event End Date	Rainfall (inches)	Overflow Duration (hours)	Overflow Volume (MG)	Overflow Cause	Location Manhole ID	Location	Unpermitted Discharge	Building Backup
11-Feb-24	12-Feb-24	2.63	6.50	0.00001	Force Main	08613007	2080 Elk Springs Dr	No	Yes
11-Feb-24	11-Feb-24	1.26	0.50	0.001	Rainfall	11907144	765 Old Glenrose Ave	Yes	No
11-Feb-24	11-Feb-24	1.26	19.00	0.11	Rainfall	10616031	305 Millwood Dr	Yes	No
12-Feb-24	14-Feb-24	1.53	38.00	1	Rainfall	09510050	501 Bismark Dr	Yes	No
12-Feb-24	13-Feb-24	1.24	23.50	2.199	Rainfall	08410007	149 Barker Rd	Yes	No
12-Feb-24	13-Feb-24	1.51	6.17	0.027	Rainfall	09011002	516 Basswood Ave	Yes	No
12-Feb-24	13-Feb-24	1.52	18.00	0.8	Rainfall	06208003	Hidden Acres PS	Yes	No
12-Feb-24	13-Feb-24	1.67	8.50	0.138	Rainfall	07008061	Riverside Drive PS	Yes	No
12-Feb-24	14-Feb-24	1.58	31.00	0.19	Rainfall	10616031	305 Millwood Dr	Yes	No
12-Feb-24	13-Feb-24	1.58	28.00	0.17	Rainfall	11907049	765 Old Glenrose Ave	Yes	No
12-Feb-24	12-Feb-24	1.41	2.00	0.0001	Blockage	12911004	0 Carnavon Pkwy	No	No
12-Feb-24	13-Feb-24	1.53	9.50	0.0001	Rainfall	05911027	700 Rowan Dr	No	No
12-Feb-24	13-Feb-24	1.46	4.00	0.0001	Rainfall	06001013	3258 Brick Church Pk	No	No
12-Feb-24	13-Feb-24	1.58	26.00	0.16	Rainfall	11907144	765 Old Glenrose Ave	Yes	No
13-Feb-24	14-Feb-24	1.48	3.08	0.355	Rainfall	08601134	Dodson Chapel PS	Yes	No
13-Feb-24	13-Feb-24	1.51	3.25	0.279	Rainfall	09105110	West Park PS	Yes	No
13-Feb-24	14-Feb-24	1.51	39.00	0.23	Rainfall	09004005	6601 Centennial Blvd	Yes	No
13-Feb-24	15-Feb-24	0.01	39.00	0.0001	Line Break	09613079	504 Donelson Pk	No	Yes
15-Feb-24	16-Feb-24	0.50	22.00	0.00001	Line Break	08303022	1298 Porter Rd	No	No
21-Feb-24	21-Feb-24	0.00	3.50	0.00001	Blockage	11616061	4016 Estes Rd	No	No
24-Feb-24	25-Feb-24	0.00	5.50	0.0001	Force Main	WMN56G14	1646 Sunset Rd	No	No
26-Feb-24	26-Feb-24	0.00	5.00	0.0001	Blockage	11902063	98 Peachtree St	No	Yes
26-Feb-24	26-Feb-24	0.00	5.00	0.0001	Blockage	17203091	5337 Windypine Dr	Yes	Yes
27-Feb-24	27-Feb-24	0.00	1.50	0.0001	Blockage	08513014	231 Cliffdale Rd	Yes	No
28-Feb-24	28-Feb-24	0.97	6.50	0.0001	Blockage	14513063	1604 Otter Creek Rd	No	No
29-Feb-24	29-Feb-24	0.00	2.00	0.00001	Blockage	13511026	600 Long Hunter Ln	No	No
06-Mar-24	06-Mar-24	0.97	5.00	0.09	Rainfall	09510050	501 Bismark Dr	Yes	No
13-Mar-24	13-Mar-24	0.00	5.00	0.00001	Blockage	08102040	2313 23rd Ave N	No	Yes
14-Mar-24	14-Mar-24	0.00	4.50	0.0001	Blockage	17313023	7860 Heaton Way	No	Yes
19-Mar-24	20-Mar-24	0.00	26.50	0.0005	Line Break	09306004	114 2nd Ave S	No	Yes

Quarterly SSO Report January 1 through March 31, 2024

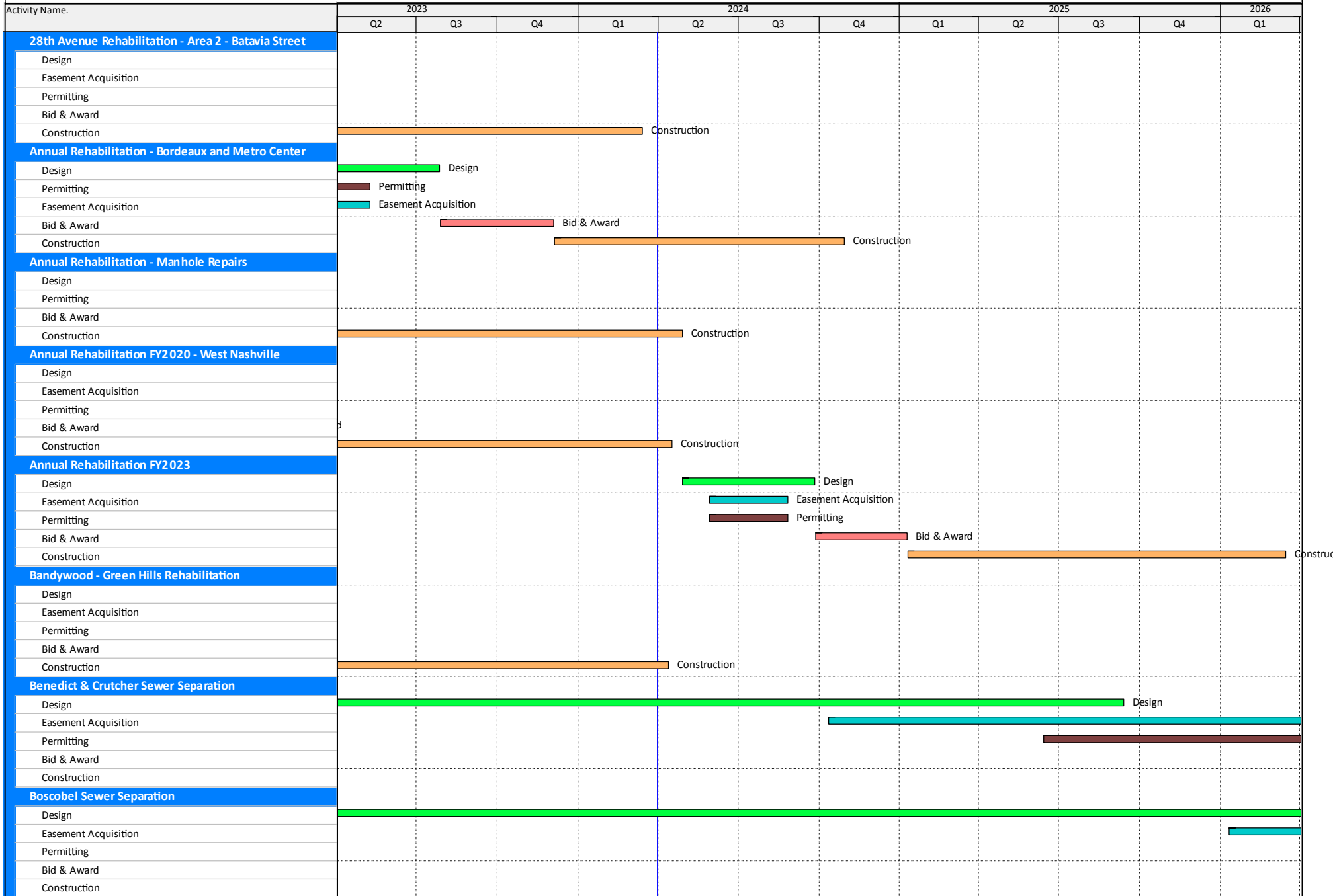
Event Start Date	Event End Date	Rainfall (inches)	Overflow Duration (hours)	Overflow Volume (MG)	Overflow Cause	Location Manhole ID	Location	Unpermitted Discharge	Building Backup
21-Mar-24	21-Mar-24	0.00	5.00	0.00001	Blockage	07009066	2305 Buena Vista Pk	No	No
27-Mar-24	27-Mar-24	0.00	2.50	0.00001	Blockage	09016020	441 American Rd	No	No
27-Mar-24	27-Mar-24	0.00	2.00	0.00001	Line Break	13413136	198 Eisenhower Dr	No	No
29-Mar-24	30-Mar-24	0.00	19.50	0.00001	Force Main	03309026	1212 Lowes Ln	No	No
29-Mar-24	29-Mar-24	0.00	3.00	0.00001	Blockage	04203021	918 N Graycroft Ave	No	No
30-Mar-24	30-Mar-24	0.00	6.00	0.00001	Blockage	11803040	2605 Grissom Dr	No	No
31-Mar-24	31-Mar-24	0.00	7.00	0.00001	Force Main	05213007	2670 Miami Ave	No	No

Appendix A

Schedule for Current and Upcoming Projects

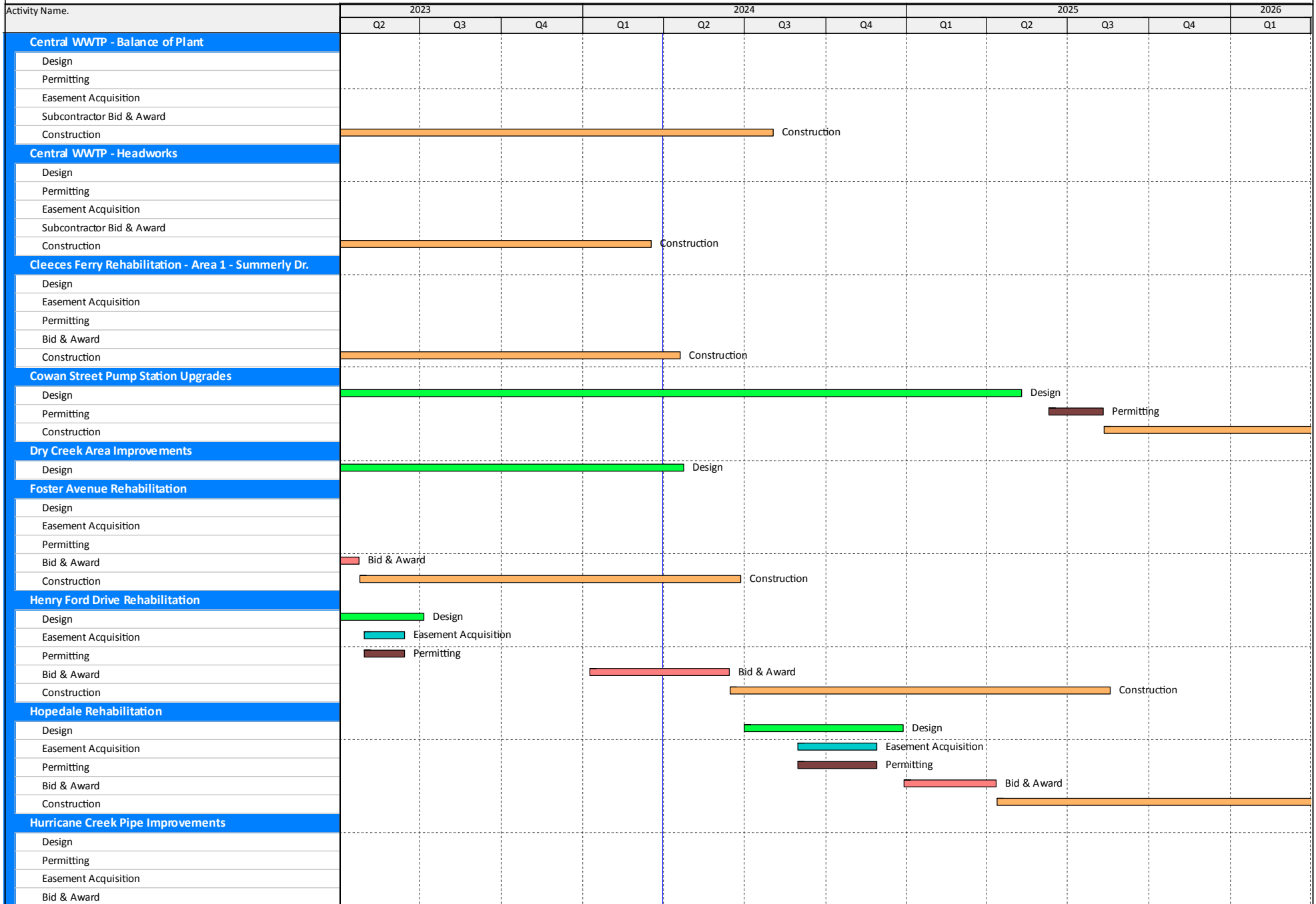
Note: The construction activity is through substantial completion.

Nashville Overflow Abatement Program 2024 Quarterly Progress Report - 1st Quarter



Note: The construction activity is through substantial completion.

Nashville Overflow Abatement Program 2024 Quarterly Progress Report - 1st Quarter



Note: The construction activity is through substantial completion.

Nashville Overflow Abatement Program 2024 Quarterly Progress Report - 1st Quarter

