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MAYOR



METROPOLITAN GOVERNMENT OF NASHVILLE AND DAVIDSON COUNTY

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ENGINEERING DIVISION
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October 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 July 1 through September 30, 2021.

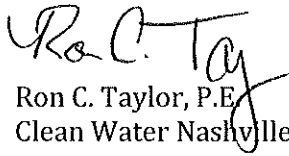
A copy of each report is concurrently being placed in the Public Document Repository (PDR).

Quarterly Report Submittal
October 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 that reads "Ron C. Taylor". The signature is written in a cursive style with a large, stylized "T" at the end.

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

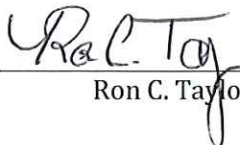
Clean Water Nashville Overflow Abatement Program

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

CONSENT DECREE QUARTERLY PROGRESS REPORT

July 1 through September 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

10/28/21

Date

Table of Contents

Section 1	Introduction	1-1
1.1	Additional Programs	1-1
1.2	Report Organization	1-2
Section 2	<i>Corrective Action Plan/Engineering Report</i>.....	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.....	2-4
2.4	Upcoming CAP/ER Projects	2-6
Section 3	<i>Long Term Control Plan</i>.....	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). 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 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.

- 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. 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 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 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 late in the first 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 nearing completion. 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 is anticipated to conclude in the upcoming quarter. Advertisement for construction is also anticipated to begin in 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. Preliminary 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 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 is anticipated to occur in the fourth quarter of 2021.

- 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. Advertisement for construction began on September 29, 2021, and construction quotes are due in October 2021. The construction Notice-to-Proceed is anticipated to be issued in 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:

- 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 was initiated during the reporting period, and design is anticipated to begin in 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. 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 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, completion of the return activated sludge (RAS) splitter box, 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 initiate procurement activities 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. Planning activities will continue, and 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. Planning activities will continue, and 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. Planning activities will continue, and 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 quotes 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 quotes were received on September 2, 2021. Construction activities are anticipated to begin during 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 is anticipated to continue during the upcoming quarter.

Section 5

Quarterly SSO and Dry-Weather CSO Report

During the reporting period, Metro experienced 77 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 July 1 through September 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
01-Jul-21	01-Jul-21	0.45	1.00	0.00001	Blockage	15810009	6300 Hillsboro Pk	No	No
04-Jul-21	04-Jul-21	0	2.00	0.00001	Blockage	05815039	4129 Home Haven Dr	No	No
06-Jul-21	06-Jul-21	0	1.00	0.0001	Blockage	08608158	5126 Myra Dr	No	No
11-Jul-21	11-Jul-21	1.72	0.92	0.063	Rainfall	05116016	Loves Branch SPS	Yes	No
17-Jul-21	18-Jul-21	3.24	2.33	0.11	Rainfall	04312004	Vandiver SPS	Yes	No
17-Jul-21	17-Jul-21	2.70	0.67	0.001	Rainfall	05116016	Loves Branch SPS	Yes	No
18-Jul-21	18-Jul-21	0.39	1.00	0.00001	Blockage	10404036	1006 17th Ave S	No	No
18-Jul-21	18-Jul-21	2.89	0.50	0.05	Rainfall	06208003	Hidden Acres SPS	Yes	No
24-Jul-21	24-Jul-21	0	1.00	0.00005	Blockage	09110060	513 Snyder Ave	Yes	No
24-Jul-21	24-Jul-21	0	1.00	0.00005	Blockage	11908012	429 E Thompson Ln	Yes	No
25-Jul-21	25-Jul-21	1.28	3.25	0.183	Rainfall	09608006	McCrary Creek SPS	Yes	No
28-Jul-21	28-Jul-21	0	5.50	0.00001	Blockage	13105040	3524 Trimble Rd	No	No
31-Jul-21	01-Aug-21	3.24	8.75	0.928	Rainfall	10210012	Davidson Branch SPS	Yes	No
31-Jul-21	01-Aug-21	3.52	6.83	0.342	Rainfall	09608006	McCrary Creek SPS	Yes	No
31-Jul-21	01-Aug-21	3.66	13.00	0.0001	Rainfall	13112013	4417 Scenic Dr	Yes	No
31-Jul-21	01-Aug-21	3.30	22.70	1	Electrical	09809050	Lakeshore SPS	Yes	No
01-Aug-21	01-Aug-21	3.24	2.00	0.05	Rainfall	10203057	Cleeces Ferry SPS	Yes	No
01-Aug-21	01-Aug-21	2.87	0.25	0.004	Rainfall	09510050	501 Bismark Dr	Yes	No
01-Aug-21	01-Aug-21	3.52	3.50	0.399	Rainfall	08410007	149 Barker Rd	Yes	No
01-Aug-21	01-Aug-21	2.78	0.50	0.00001	Blockage	14708011	3737 Faulkner Dr	No	No
04-Aug-21	04-Aug-21	0	2.42	1.914	Electrical	09409003	Browns Creek SPS	Yes	No
08-Aug-21	08-Aug-21	0	2.00	0.00001	Blockage	16107014	557 McMurray Dr	No	No
12-Aug-21	13-Aug-21	0.13	30.00	0.00001	Blockage	WLS052M031	233 Santa Rosa Ct	Yes	No
15-Aug-21	15-Aug-21	0.23	1.00	0.00001	Blockage	14810001	3939 Apache Tr	Yes	No
18-Aug-21	18-Aug-21	2.64	2.92	0.211	Rainfall	07114041	Cowan St. SPS	Yes	No
18-Aug-21	18-Aug-21	1.69	6.50	0.6	Rainfall	06208003	Hidden Acres SPS	Yes	No
18-Aug-21	18-Aug-21	1.28	4.00	0.1	Rainfall	07008061	Riverside SPS	Yes	No
18-Aug-21	18-Aug-21	1.69	0.67	0.012	Rainfall	05116016	Loves Branch SPS	Yes	No
26-Aug-21	26-Aug-21	0.71	1.20	0.02	Rainfall	07008061	Riverside SPS	Yes	No

Quarterly SSO Report July 1 through September 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
30-Aug-21	30-Aug-21	3.49	0.50	0.00001	Blockage	08305009	1043 Chickamauga Ave	No	No
30-Aug-21	01-Sep-21	2.97	34.00	1	Rainfall	07008061	Riverside SPS	Yes	No
31-Aug-21	31-Aug-21	3.49	4.67	0.147	Rainfall	07114041	Cowan St. SPS	Yes	No
31-Aug-21	31-Aug-21	3.47	3.83	0.78	Rainfall	05205001	Gibson Creek SPS	Yes	No
31-Aug-21	01-Sep-21	3.14	12.60	0.1	Rainfall	06208003	Hidden Acres SPS	Yes	No
31-Aug-21	31-Aug-21	3.47	15.00	1	Rainfall	06208003	Hidden Acres SPS	Yes	No
31-Aug-21	31-Aug-21	4.82	8.00	0.0001	Rainfall	06001013	3258 Brick Church Pk	Yes	No
31-Aug-21	31-Aug-21	2.64	17.42	1.546	Rainfall	10210012	Davidson Branch SPS	Yes	No
31-Aug-21	31-Aug-21	3.35	3.67	0.028	Rainfall	04312004	Vandiver SPS	Yes	No
31-Aug-21	31-Aug-21	3.43	6.58	0.29	Rainfall	08410007	149 Barker Rd	Yes	No
31-Aug-21	01-Sep-21	3.58	5.50	1.866	Rainfall	03411009	Dry Creek SPS	Yes	No
31-Aug-21	31-Aug-21	3.17	5.00	0.001	Rainfall	13103010	1901 Kimbark Dr	Yes	No
31-Aug-21	01-Sep-21	3.23	24.00	0.0001	Blockage	03409034	121 W Monticello Ave	No	No
31-Aug-21	01-Sep-21	2.55	13.00	0.0001	Blockage	14707054	4310 Nolensville Pk	Yes	No
31-Aug-21	01-Sep-21	2.60	31.00	0.9	Rainfall	09510050	501 Bismark Dr	Yes	No
31-Aug-21	01-Sep-21	3.65	17.92	1.335	Rainfall	13609002	Smith Springs SPS	Yes	No
31-Aug-21	01-Sep-21	3.35	28.00	0.5	Rainfall	05315020	Lakewood SPS	Yes	No
01-Sep-21	01-Sep-21	0	4.00	0.0001	Blockage	12908033	6214 Harding Pk	Yes	No
03-Sep-21	03-Sep-21	0	3.50	0.0001	Blockage	05105001	722 Due West Ave N	No	No
12-Sep-21	12-Sep-21	0	1.00	0.00001	Blockage	14502011	4720 Chalmers Dr	Yes	No
18-Sep-21	18-Sep-21	1.31	2.00	0.119	Rainfall	09105110	West Park SPS	Yes	No
18-Sep-21	18-Sep-21	0.77	0.75	0.03	Rainfall	15110038	Longhunter Chase SPS	Yes	No
18-Sep-21	18-Sep-21	0.77	0.20	0.01	Rainfall	15016001	Mt. View SPS	Yes	No
18-Sep-21	18-Sep-21	1.31	4.92	0.301	Rainfall	10210012	Davidson Branch SPS	Yes	No
20-Sep-21	21-Sep-21	2.75	30.00	0.1	Rainfall	05315020	Lakewood SPS	Yes	No
20-Sep-21	20-Sep-21	2.13	11.70	0.04	Rainfall	01416001	Joelton SPS	Yes	No
20-Sep-21	21-Sep-21	2.69	5.34	0.203	Rainfall	13609002	Smith Springs SPS	Yes	No
20-Sep-21	20-Sep-21	2.31	8.17	0.088	Rainfall	08410007	149 Barker Rd	Yes	No
20-Sep-21	20-Sep-21	2.57	10.08	0.51	Rainfall	04312004	Vandiver SPS	Yes	No
20-Sep-21	20-Sep-21	2.28	12.20	1	Rainfall	06208003	Hidden Acres SPS	Yes	No

Quarterly SSO Report July 1 through September 30, 2021

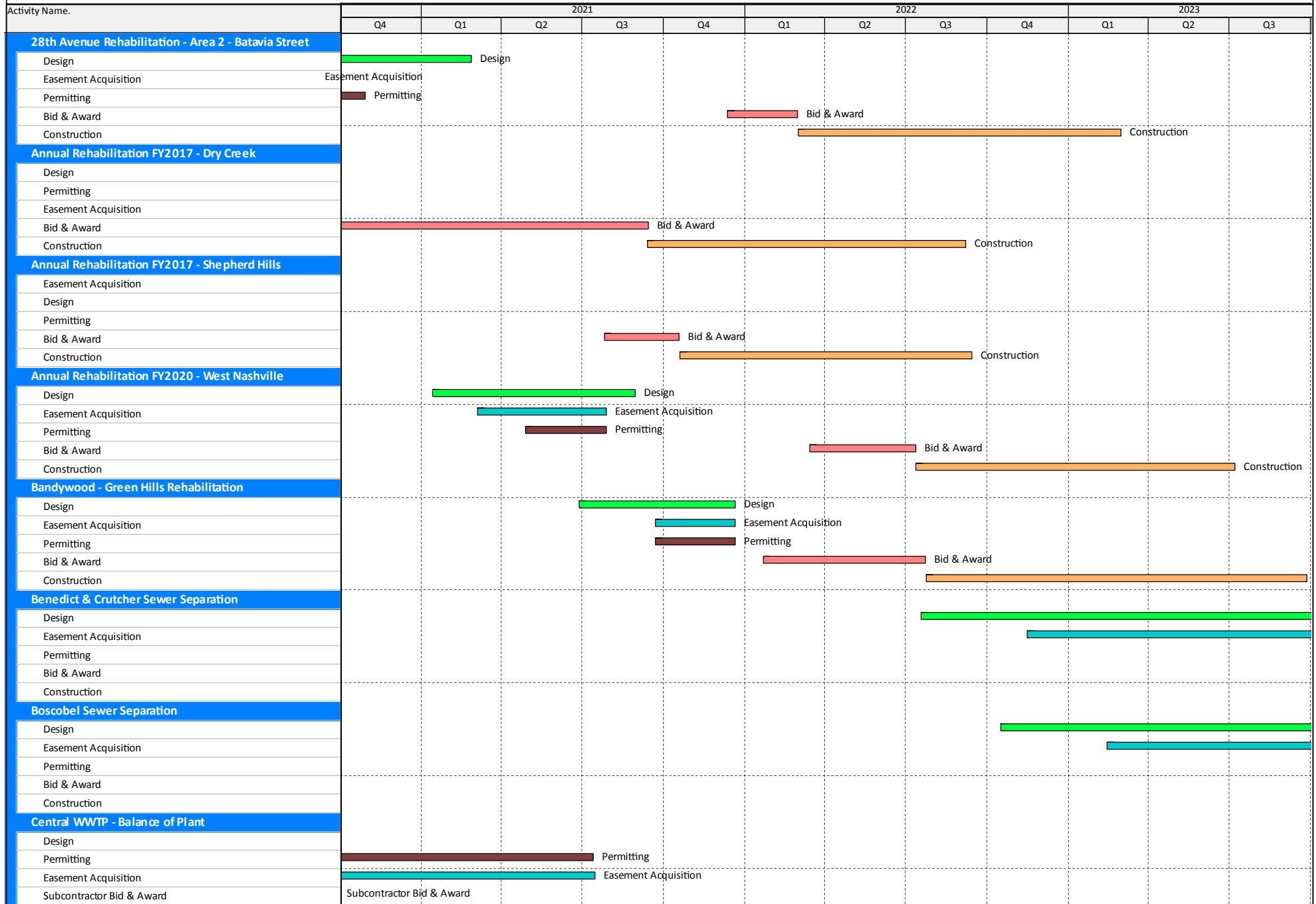
Event Start Date	Event End Date	Rainfall (inches)	Duration (hours)	Overflow Volume (MG)	Overflow Cause	Location Manhole ID	Location	Unpermitted Discharge	Building Backup
20-Sep-21	20-Sep-21	2.28	3.92	0.893	Rainfall	05205001	Gibson Creek SPS	Yes	No
20-Sep-21	22-Sep-21	4.13	44.59	4.08	Rainfall	10210012	Davidson Branch SPS	Yes	No
20-Sep-21	20-Sep-21	2.28	1.58	0.102	Rainfall	05116016	Loves Branch SPS	Yes	No
20-Sep-21	21-Sep-21	2.89	20.00	0.00001	Rainfall	08603013	428 Old Lebanon Dirt Rd	No	No
20-Sep-21	24-Sep-21	3.74	99.00	0.3	Rainfall	13112013	4417 Scenic Dr	Yes	No
20-Sep-21	23-Sep-21	3.73	72.00	0.00001	Rainfall	13103010	2000 Galbraith Dr	No	No
21-Sep-21	22-Sep-21	0.83	24.58	0.939	Rainfall	08410007	149 Barker Rd	Yes	No
21-Sep-21	21-Sep-21	3.41	1.15	0.03	Rainfall	10203057	Cleeces Ferry SPS	Yes	No
21-Sep-21	22-Sep-21	4.13	3.67	0.046	Rainfall	09011002	516 Basswood Ave	Yes	No
21-Sep-21	22-Sep-21	3.41	12.00	0.001	Blockage	09105022	6112 Nashua Ave	Yes	No
21-Sep-21	22-Sep-21	3.41	12.00	0.001	Blockage	09105021	6112 Nashua Ave	Yes	No
21-Sep-21	24-Sep-21	3.41	74.00	0.001	Blockage	09115013	6112 Nashua Ave	Yes	No
21-Sep-21	21-Sep-21	3.41	2.15	0.1	Rainfall	09015045	Sunliner SPS	Yes	No
22-Sep-21	23-Sep-21	2.23	22.00	0.0001	Rainfall	11907049	765 Old Glenrose	No	No
22-Sep-21	23-Sep-21	2.23	22.00	0.00001	Rainfall	11907147	0 Old Glenrose Ave	No	No
22-Sep-21	23-Sep-21	3.14	22.00	0.6	Rainfall	09510050	501 Bismark Dr	Yes	No
23-Sep-21	23-Sep-21	0	2.50	0.0001	Blockage	04309103	252 Cumberland Ave	No	No
25-Sep-21	26-Sep-21	0	2.50	0.00001	Blockage	14814037	4821 Gillespie Dr	No	No

Appendix A

Schedule for Current and Upcoming Projects

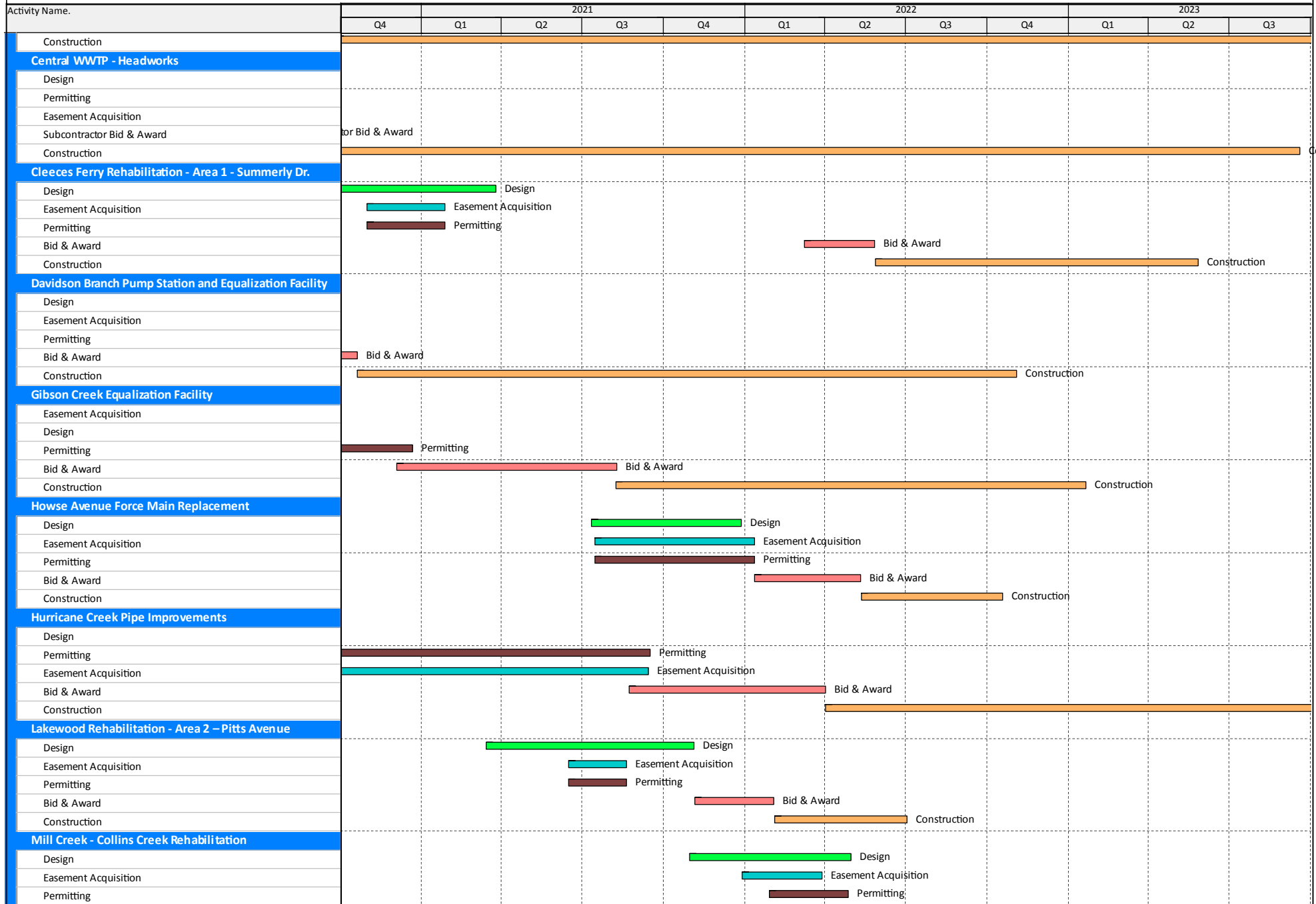
Note: The construction activity is through substantial completion.

Nashville Overflow Abatement Program 2021 Quarterly Progress Report - 3rd Quarter



Note: The construction activity is through substantial completion.

Nashville Overflow Abatement Program 2021 Quarterly Progress Report - 3rd Quarter



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Nashville Overflow Abatement Program 2021 Quarterly Progress Report - 3rd Quarter

