JOHN COOPER
MAYOR

METROPOLITAN GOVERNMENT OF NASHVILLE AND DAVIDSON COUNTY

DEPARTMENT OF WATER AND SEWERAGE SERVICES
STORMWATER DIVISION
NPDES OFFICE
1607 COUNTY HOSPITAL ROAD
NASHVILLE, TN 37218

December 10, 2021

Jennifer Dodd, Director
Tennessee Department of Environment & Conservation - Division of Water Resources
William R. Snodgrass Tennessee Tower
Attention: Compliance Review
312 Rosa L. Parks Avenue, 11th Floor
Nashville, Tennessee 37243

RE: **NPDES Permit No. TNS068047**
Metro Nashville/Davidson County
Signature Authorization Letter

Dear Director:

Per the provisions of Section 5.7 of the Metro Nashville/Davidson County MS4 NPDES permit (TNS068047), I hereby authorize Michael Hunt as my duly authorized representative to submit reports and other information as required per NPDES Permit TNS068047.

I do so by virtue of Mr. Hunt's position as the MS4 Permit Program Manager for Metro Nashville/Davidson County, Metro Water Services - Stormwater's NPDES Office, which oversees Metro's MS4 permit compliance activities.

Please let me know if you require any further information.

Sincerely,

Scott Potter, P.E.
Metro Water Services, Director

cc: Tim Jennette, TDEC Division of Water Resources Nashville Field Office Manager
Karina Bynum, Ph.D., P. E. TDEC Integrated Water Resources Engineer
Tom Palko, Assistant Director; Metro Water Services Stormwater Division
Michael Hunt, Metro Water Services Stormwater Division NPDES Office

Metro Nashville/Davidson County Municipal Separate Storm Sewer System Permit TNS068047 Annual Report

November 2021

Reporting Period:

July1, 2020 – June 30, 2021

METRO WATER SERVICES

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1.0 Introduction

The Metropolitan Government of Nashville Davidson County (Metro) was issued the third cycle of the Municipal Separate Storm Sewer System (MS4) permit effective February 1, 2012. Under this permit, the reporting period for each permit year coincides with Metro's Fiscal Year (FY) (July 1st through June 30th). The reporting period for this report will be referred to as Fiscal Year 2021 (FY21), which represents the period between July 1, 2020 through June 30, 2021.

Each year, there are numerous individuals within different Metro Departments that work toward achieving overall MS4 permit compliance. As a measure to ensure permit compliance within the various facets of Metro government, the National Pollutant Discharge Elimination System Office (NPDES) was created to oversee all MS4 permit compliance activities. NPDES is a section within the Metro Water Services (MWS) Stormwater Division and is responsible for performing specific MS4 permit requirements such as public education activities, illicit discharge investigations, runoff/discharge sampling, construction site inspections, field screening inspections, industrial inspections, etc. In addition, the NPDES Office is responsible for coordinating with various other Metro Departments to ensure Metro's MS4 permit compliance measures are being followed on a Metro-wide basis.

The following table is a list of certain individuals that have contributed directly to specific MS4 permit compliance activities/information during FY21. Any inquiries regarding information represented in this report should be directed to the MWS Stormwater NPDES Office (Attn: Josh Hayes) at 1607 County Hospital Rd, Building A, Nashville, Tennessee, 37218, Phone: 615-880-2420, Email: Joshua.Hayes@Nashville.gov.

Table 1 - Contact List

Name	Agency	Position/Responsibility
Scott Potter	Metro Water Services	Director
David Tucker	Metro Water Services	Assistant Director, Operations
Tom Palko	Metro Water Services	Assistant Director, Stormwater Division
Amanda Deaton-Moyer	Metro Water Services	Assistant Director, Business & Finance
Sonia Allman	Metro Water Services	Manager of Strategic Communications
Julie Berbiglia	Metro Water Services	Public Education Specialist, Stormwater NPDES Section
Ricky Swift	Metro Water Services	Program Manager, Stormwater Maintenance Section
Casey Cooper	Metro Water Services	Project Manager, Stormwater Maintenance Section
Hal Balthrop	Metro Water Services	Assistant Director, Development Services Division
Kimberly Hayes	Metro Water Services	Engineer, Development Services Division, Single Family
Michael Hunt	Metro Water Services	Program Manager, Stormwater NPDES Section
Bonnye Holt	Metro Water Services	Office Support Specialist, Stormwater NPDES Section
Howard Jackson	Metro Water Services	Office Support Specialist, Stormwater NPDES Permit Group
Dale Binder	Metro Water Services	Construction Inspection Manager, Stormwater NPDES Section
Shawn Herman	Metro Water Services	Construction Site Inspector, Stormwater NPDES Section
Katherine O'Hara	Metro Water Services	Construction Site Inspector, Stormwater NPDES Section
Denice Johns	Metro Water Services	Construction Site Inspector, Stormwater NPDES Section
Donald Erves	Metro Water Services	Construction Site Inspector, Stormwater NPDES Section
Ken Tranter	Metro Water Services	Construction Site Inspector, Stormwater NPDES Section
Leigh Nelson	Metro Water Services	Construction Site Inspector, Stormwater NPDES Section
Lynda Kelly	Metro Water Services	Construction Site Inspector, Stormwater NPDES Section
Rebecca Dohn	Metro Water Services	Special Projects Manager, Stormwater NPDES Section
Eric Kuehler	Metro Water Services	Arborist, Stormwater NPDES Section
Josh Hayes	Metro Water Services	Permit Group Manager, Stormwater NPDES Section
Kevin Turner	Metro Water Services	Permit Group Inspector, Stormwater NPDES Section
Rob Topolski	Metro Water Services	Permit Group Inspector, Stormwater NPDES Section
Liz Stienstraw	Metro Water Services	Permit Group Inspector, Stormwater NPDES Section
Allison Davis	Metro Water Services	Permit Group Inspector, Stormwater NPDES Section
Matthew Lockhart	Metro Water Services	Permit Group Inspector, Stormwater NPDES Section
Jessica Bell	Metro Water Services	Permit Group Inspector, Stormwater NPDES Section
Mary Bruce	Metro Water Services	Watershed Group Manager, Stormwater NPDES Section
Veronica Logue	Metro Water Services	Watershed Group Inspector, Stormwater NPDES Section
Carol Edwards	Metro Water Services	Soil Conservationist, Stormwater NPDES Section
Sharon Smith	Metro Water Services, Waste Services	Nashville Zero Waste Coordinator
Phillip Jones	Nashville Department of Transportation	Assistant Director of the Street Services Division
Ernie Kurgan	Nashville Department of Transportation	Street Services Division
Wade Hill	Codes Department	Chief Plans Reviewer
Anita McCaig	Metro Planning Department	Planner
Christopher Michie	Metro Health Department	Septic System Oversight
Pamela Wilson	Metro Health Department	Restaurant Inspection
Ron Taylor	Metro Water Services	Program Manager, Overflow Abatement
Matt Lott	Metro Water Services	Program Manager, System Services Overflow Response
Tim Netsch	Metro Parks Department	Assistant Director
Ted Taylor	Metro Water Services	Laboratory Superintendent
Andy Welch	Metro Water Services	Program Manager, Pre-treatment/FOG
Anna Kuoppamaki	Metro Water Services	GIS Analyst, Stormwater Master Planning Section

Note: There are many other personnel that contribute to the overall MS4 compliance program not listed on this table (i.e. Engineers in MWS Development Services, Various Maintenance Workers, etc.).

The following list is a description of commonly used acronyms throughout the document:

303(d)	State's List of Non-attainment Waterways (Water Quality Criteria for Use Classifications)
CCTV	Closed Circuit Televising
CSS	Combined Sewer System
CWN	Clean Water Nashville Program
EMC	Event Mean Concentration
EPA	Environmental Protection Agency
EPSC	Erosion Prevention and Sediment Control
ERP	Enforcement Response Plan
FY21	Fiscal Year 2021
FEMA	Federal Emergency Management Agency
GIS	Geographic Information System software
LA	Load Allocations for Streams with Approved TMDLs
LID	Low Impact Development
MEP	Maximum Extent Practicable
MDPW	Metro Department of Public Works [known as Dept. of Transportation (NDOT) going forward - name change in 2021]
Metro	Metro Nashville Davidson County Government
MNPR	Metro Nashville Parks and Recreation
MNPS	Metro Nashville Public Schools
MS4	Municipal Separate Storm Sewer System
MWS	Metro Water Services
NOV	Notice of Violation
NON	Notice of Noncompliance
NPDES	National Pollutant Discharge Elimination System Section within MWS Stormwater Division
O&M	Operations and Maintenance
OEM	Mayor's Office of Emergency Management
PIE	Public Information/Education Plan
RMCP	Ready Mix Concrete Plant
RMP	Runoff Management Plan
SCM	Stormwater Control Measure (Post-Construction Stormwater Treatment)
SOP	Standard Operating Procedure
SSD	System Services Division
SWMC	Stormwater Management Committee
SWMM	Stormwater Management Manual
SWMP	Stormwater Management Plan
SWO	Stop Work Order
TDEC	Tennessee Department of Environment and Conservation
TMDL	Total Maximum Daily Load of Pollutants Allowed within Streams
TMSP	Tennessee Multi-Sector Permit for Industrial Stormwater Discharges
TMI	Tennessee Macroinvertebrate Index
TSS	Total Suspended Solids
WIES	Watershed Improvement Evaluation System
WLA	Waste Load Allocation

1.1 Objective of the Program

The objective of the Stormwater Management Program is to implement specific pollution prevention programs designed to improve the quality of Metro's water resources to the Maximum Extent Practicable (MEP), particularly as it relates to improving the quality of discharges from Metro's MS4. This leads to an overall goal of maintaining MS4 permit compliance, while simultaneously achieving water quality improvements in every Metro stream reach, including those listed on the Tennessee Department of Environment and Conservation's (TDEC's) 303(d) list of streams with unavailable parameters. It is Metro's long-term goal to reduce pollutant loadings from the MS4 to remove a majority of the streams from the 303(d) list that are indicated as being impaired by MS4 runoff. As Metro maintains compliance with the current MS4 permit requirements, it is important to evaluate the success of the major pollution prevention programs that have been implemented in the first 3 permit cycles. Over those permit cycles, Metro has made great strides to improve stormwater runoff from construction sites, industrial sites, commercial sites, residential sites, and Metro roadways/properties. Overall, the implementation of these control programs has worked to significantly reduce and minimize pollutants from entering the MS4 drainage system and the receiving streams.

1.2 Major Stormwater Pollution Findings

Each year over time, there are generally fewer major discoveries of pollution to the MS4 drainage system. This can be largely attributed to the long-term implementation of core pollution prevention programs described further in this document. As Metro's MS4 program has matured over the last several years, additional focus and resources have been dedicated to addressing the long-term inspection and maintenance of post-construction Stormwater Control Measures (SCMs). As a result of this new focus/dedication, Metro has had success in achieving the proper maintenance of many SCMs within the MS4 jurisdiction. The paragraphs below describe some of the more notable investigations and compliance actions that have directly benefited the water quality of the MS4 and Metro streams during FY21.

1.2.1 Illicit Discharge of Automotive Fluids

While performing an inspection of an Automotive Salvage lot's SCM, a discharge of automotive fluids was observed in a nearby tributary of Percy Priest Lake. As a result, a formal industrial inspection of the facility was initiated, which revealed the automotive fluids and automotive parts within the tributary were a direct result of inadequate pollution prevention controls. A Notice of Violation (NOV) and $900.00 Administrative Penalty was issued to the facility requiring them to remediate the lost material and obtain proper Tennessee Multi-Sector Permit (TMSP) coverage from the Tennessee Department of Environment and Conservation. The facility performed necessary remediation measures and began the process of obtaining the appropriate permit coverage.


NOTICE OF VIOLATION

Name/Location: Auto Central LLC - 12761 Old Hickory Blvd

Description of violation(s): Illicit Discharge

Other: Contributing to stormwater pollution through inadequate control measures that allowed oil and scrap metal debris to discharge from the site into the Holloway Creek branch flowing through Auto Central's property located at 12761 Old Hickory Blvd. Auto Central received an industrial Follow-up letter to a previous inspection on 10/01/2020 requesting control measures to be added to prevent any pollutant discharge to the creek.

Civil Penalty Amount (assessed to the responsible party named below): PENALTY $ 900.00

Stop Work Order: If checked, you are hereby ORDERED to STOP ALL WORK on this project until the violation(s) is/are remedied, and remediation is approved by the Stormwater Department.

Work or remediation ordered to comply with Metro Code:

- ✓ Stop Illicit Discharge Immediately.
- Other: All oil and scrap metal should be properly remediated from the Holloway Creek branch located on Auto Central's property. After proper remediation, better management practices should be implemented and effective control measures added to eliminate further oil and debris discharge.

Name: Auto Central LLC is hereby served with this Notice of Violation on 12 22 20 and ordered to correct the violation(s) &/or stop work until the Stormwater Department approves the continuance of work. Illicit Discharges Must Stop Immediately. Continued non-compliance may result in additional civil penalties and/or legal action. You have the right to appeal this decision within 15 days. Appeal information is located on the back of this Notice under 3.7.3.3 Penalties.

Notification received by: USPS Certified Mail 7020 1810 0001 5103 6852

This order served by: [illegible] Date and Time 12 22 20 @ 10:00 AM

Photographs of Automotive Parts and Fluids in Tributary

1.2.2 Field Screening Discoveries of Exposed Stormwater Pollutants

When Nashville's MS4 Permit expired in 2017, MWS petitioned TDEC to allow modifications to the dry weather field screening program during the administrative extension period. The MS4 permit-prescribed dry weather field screening involves inspecting outfalls in dry weather conditions to determine if there are any unpermitted discharges to the MS4. In the previous 20 years of dry weather field screening, NPDES has expended exhaustive effort in performing dry weather field screening activities which have yielded very few discoveries of illicit discharges. Metro believes the dry weather field screening program could be much more beneficial in reviewing commercial and industrial properties for the presence of exposed pollutants that would drain to the MS4 during a rain event. TDEC issued approval to NPDES to implement the new dry weather field screening process during the current MS4 administrative extension period. Implementation of this new dry weather field screening process has resulted in many commercial and industrial facilities with exposed stormwater pollutants such as automotive fluids, sewage, and fats, oils, and grease (FOG) having been discovered and eliminated. The paragraphs below describe some of the more-prominent discoveries of exposed stormwater pollutants during FY21.

Automotive Fluids

During a dry weather field screening inspection of an automotive repair/salvage facility, an NPDES inspector discovered large amounts of exposed oils and other automotive fluids on the parking lot and within private storm drains. Due to the large amounts of exposed pollutants, NPDES issued a Notice of Noncompliance (NON) to the facility and required them to clean up all exposed stormwater pollutants on the parking lot and within the private stormwater drainage system, which likely averted large amounts of automotive fluids from discharging to the MS4 and eventually Mill Creek. NPDES also coordinated with TDEC to ensure the facility obtains coverage under a Tennessee Multi-Sector Permit (TMSP) for industrial stormwater runoff. Based on Metro's findings, TDEC issued a violation to the facility requiring them to clean up the site and obtain proper permit coverage.

Photographs of Exposed Automotive Fluids

Exposed Industrial Lubricating Fluids

While performing a dry weather field screening inspection of an industrial facility, NPDES observed exposed industrial lubricating fluids that were impacting a private trench drain. NPDES coordinated with the facility to expedite cleanup of the exposed fluids and to implement Best Management Practices (BMPs) to prevent future exposure of industrial fluids to stormwater runoff. Coordination with the facility to remediate the industrial lubricating fluids and implementing better stormwater controls, directly prevented pollutants from reaching the MS4 during a rain event.

Photographs of Exposed Industrial Lubricating Fluids Reaching a Private Trench Drain

Discharge of Industrial Process Water

While performing a dry weather field screening inspection of an industrial facility, NPDES noted a discharge of sediment-contaminated water from an indoor industrial facility. Upon further investigation, it was determined that water utilized to cool a glass cutting operation was draining into an internal floor drain that was being pumped outside and into the MS4. As the water traveled across the floor of the building, it was picking up sediment and other pollutants. NPDES issued a Notice of Violation and accompanying $300.00 administrative penalty to the site for the unpermitted/non-stormwater discharge of industrial process water. The facility, in turn, coordinated with the MWS Pretreatment Section and re-routed the discharge to the sanitary sewer.

Photographs of the Discharge of Industrial Process Water to the MS4

Discharge of Stone-cutting Saw Slurry

During a dry weather field screening activity, NPDES observed a white-colored discharge coming out of a granite/stone cutting facility. Upon further investigation, the discharge was found to be associated with the wet slurry that is generated from cutting the stone and granite material. The material contained high levels of sediment that was discharging into the MS4. NPDES issued a Notice of Violation and accompanying $100 Administrative Penalty for the unpermitted, non-stormwater discharge and required the facility to coordinate with the MWS Pretreatment Section to filter the water and route it to the sanitary sewer.

Photographs of the Wet Saw Slurry Discharging to the MS4

1.2.3 Construction Violation

In following up on a citizen complaint, NPDES found an unpermitted grading operation that was also directly impacting the stream, as the riparian buffer vegetation had been removed and significant loads of sediment had discharged into the stream. NPDES immediately coordinated with TDEC on the impact to the stream and issued a Notice of Violation with a $700 administrative penalty to the property owner, requiring them to stabilize the site and seek proper permits. Due to the property owner's unwillingness to perform site improvements in a prompt manner, NPDES had to issue several additional enforcements and escalating penalties to the property owner that ended up totaling $7,200 of administrative penalties. Work continues into FY22 on bringing the site into compliance to include TDEC coordination.

Grading Without a Permit Notice of Violation Photos

1.2.5 Private Sanitary Sewer Discharge into a Stream

While performing post-flood stream reconnaissance work, an NPDES inspector noticed an odorous discharge into a tributary to Mill Creek. From follow-up investigation work, it was determined that the discharge was the result of a failing sanitary sewer line from a commercial laundromat. Hundreds of gallons of sewage material with high levels of detergents were discharging to the tributary. NPDES immediately alerted the laundromat of the issue and directed them to make the necessary repairs immediately. Upon a re-inspection several days later, it was noted that no repairs had been made and the sewage material was still overflowing to the tributary. Due to the lack of compliance, NPDES issued an enforcement with an accompanying $750.00 administrative penalty. Soon after the NOV and administrative penalty was issued, the laundromat made the necessary repairs and stopped the discharge of sewage to the creek.

Photos of the Sanitary Sewer Discharge from a Laundromat to Community Waters

1.2.6 Apartment Complex Sewer Discharge to Community Waters

In late July of 2020, NPDES received citizen reports of grey colored water in a tributary to the Harpeth River. NPDES responded quickly and the discharge was discovered to be coming from a private apartment complex sanitary sewer pump station that was malfunctioning. Upon speaking to management at the site, NPDES learned that they already knew about the sewage pump failure and admitted that they regularly have problems with their pumps resulting in sewage overflowing onto the pavement, so much so, that they built a catch basin to route overflowing sewage down the hill. The apartment complex was notified to stop the sewage discharge immediately. Upon re-inspecting on a few days later, the sewage discharge continued. The downstream sewage sludge field was so large, it is believed the discharge had been going on for weeks, if not months. Harpeth Valley Utility District checked their receiving sewer lines and everything was in working order, determining the failure was to be the responsibility of the private apartment complex. Once the responsibility was verified, NPDES issued an NOV and associated $1,750.00 administrative penalty to the complex. As a result of the NOV and administrative penalty, the private pump station was repaired, and the discharge was abated. The facility was also required to clean up the remaining exposed sewage sludge material.

Photographs of the Catch Basin Installed to Route Overflowing Sewage to a Creek

1.3 Major Stormwater Management Program Accomplishments and Highlights

1.3.1 MWS Stormwater Division

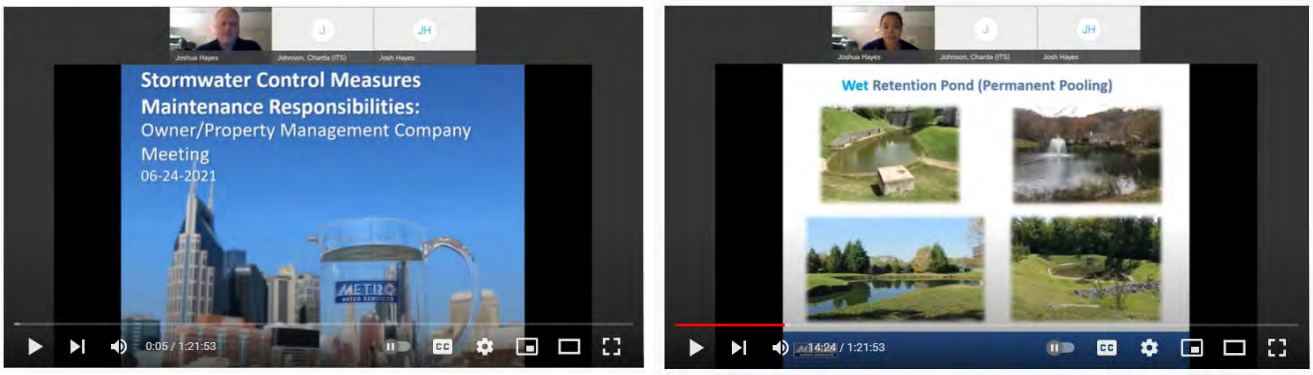
The MWS Stormwater Division has continued to facilitate major accomplishments in the development of the overall Stormwater Management Program. Accomplishments performed in recent years are listed below:

SWMP Implementation/Updates:
In FY21, NPDES continued to implement Metro's MS4 Storm Water Management Plan (SWMP) that was developed during previous permit reporting periods. The SWMP, as required by the current MS4 permit, is a formal document that provides a comprehensive narrative description of Metro's overall Stormwater Management Program. The SWMP describes Metro's methods of achieving each MS4 permit-required activity. The SWMP is an internal program document that is reviewed routinely to determine if improvements or updates are needed. All updates to the SWMP are included in the supplemental appendices. In FY21, TDEC performed a Compliance Evaluation Inspection (CEI) of Metro's Illicit Discharge Detection and Elimination (IDDE) program. As part of the IDDE CEI, TDEC requested additional narrative to be added to the SWMP and the Enforcement Response Plan. NPDES immediately updated the SWMP and Enforcement Response Plan (ERP) to the suggested language. The updated SWMP appendix and ERP are included in Attachment B of this Annual Report. As part of the July 2020 CEI, TDEC explained that the NPDES IDDE program overall was well established and in compliance with the MS4 Permit.

Please note that Metro's permit cycle ended on January 31, 2017 but is currently administratively extended until such time as the permit is reissued by TDEC. With the pending issuance of the 4th iteration of Metro's MS4 permit, Metro believes some changes can be made to improve the efficiency of certain pollution prevention programs. Attachment B also includes several communications submitted to TDEC detailing proposed changes to the Stormwater Management Program, which NPDES is currently implementing during the transition/"administrative extension" period between permits. NPDES met with TDEC on November 16, 2017 to discuss these changes and TDEC approved the testing of certain, slight MS4 program modifications during the transition/"administrative extension" period. On March 30, 2018, NPDES submitted a follow-up letter to TDEC explaining how the modifications have been beneficial to the program. During FY21, NPDES continued to implement the changes detailed in these communications to TDEC.

Public Education:
As Metro Nashville continues to grow at a record pace, with new residents moving here from different parts of the country, NPDES believes public outreach is one of the most important actions of the MS4 program. In FY21, NPDES continued to expand on public outreach activities as opportunities presented themselves, with a specific focus on educating Metro employees on proper management of Metro properties and maintenance activities. The below paragraphs highlight some of the specific public education activities that were conducted during FY21:

- Property Management Company Workshop on SCM Maintenance
  In early summer of 2021, NPDES scheduled a large virtual meeting workshop with numerous Property Management Companies and HOA representatives to discuss the proper inspection and maintenance responsibilities associated with post-construction permanent Stormwater Control Measures (SCMs). The virtual workshop had 38 participants, many of which represent owners of many SCMs around the county. The presentation involved a summary of Metro's SCM oversight program covering elements from requiring owner-submitted Annual Inspection Reports to Metro's inspection process and follow-up actions. The workshop virtual presentation was also recorded and sent out to all known property management companies that didn't get to attend the event. The link below is a recording of the workshop:
  https://youtu.be/qNguzydG9zQ



Screenshots from the Virtual SCM Property Management Workshop

- Social Media Post

  In FY21, MWS continued to expand stormwater messaging on its social media platform. MWS routinely updates Facebook, Twitter, Instagram, and NextDoor posts, which has proven to be an effective method in reaching a next generation (and community in general), who get most of their news from the various social media platforms. A benefit to using social media to distribute public education messages is that actual audience sizes can be tabulated in terms of views. Below is a summary of social media posts and views per platform. While some of the MWS social media posts were drinking water or wastewater-related, many of the posts included stormwater-specific messages. Section 4 of this document shows some stormwater-specific posts during FY21.

	Posts	Reach
Facebook	249	117,629
Instagram	113	21,770
Twitter	226	404,100
NextDoor	74	2,984,472
Total	662	3,527,971

- Metro's Adopt-A-Stream Program

  For many years, MWS has been coordinating with the Cumberland River Compact (CRC) to facilitate the Adopt-A-Stream program. The program provides an opportunity for local businesses, civic groups, watershed associations, churches, schools, etc. to work together in protecting and enhancing the watershed in which they live or work. Stream adoptions last for a period of 2 years and adopters are required to do at least one stream clean-up per year. During FY21, the CRC signed up or renewed contracts with 19 new and renewing adopters bringing the total number of stream segments adopted to 31. There were 21 stream cleanups in which 121 volunteers collected more than 258 bags of trash during the FY21 period.

Map of Adopted Stream Segments and Photos of Stream Clean-up Events

Floodplain Buyout Properties

Over the years, the MWS Stormwater floodplain buyout program has worked to restore floodplain storage and riparian habitat in various watersheds within Metro. The MWS Stormwater Division has been participating in the Federal Emergency Management Agency (FEMA) home buyout program for more than 22 years. Since MWS began participating in the home buyout program, Metro has purchased over 430 floodplain properties (over 200 acres) in which structures and other impervious surfaces such as driveways have been removed. In FY21, MWS staff coordinated the purchasing and/or home removal of 24 floodplain properties. For most of the restored floodplain parcels, Metro has ceased mowing areas directly adjacent to streams, allowing riparian buffers to naturally reestablish. MWS Stormwater has also coordinated the plantings of hundreds of native trees and shrubs within many of these floodplain properties. Many of the buyout sites are adjoining parcels within the same floodplain, resulting in the restoration of large continuous tracks of riparian floodplain. Some of these floodplain properties also provide recreational value to local neighborhoods as they are now managed and protected by the Metro's Parks Department.

Aerial View of Wimpole Drive Property Buyouts Before and After

2021 Flood Reconnaissance

On March 28, 2021, the southeastern portion of Davidson County experienced a major flash flooding event, with some areas receiving up to 9 inches of rain. The deadly flash flooding caused significant amounts of natural and unnatural debris to wash into the area streams such as Mill Creek. Following the initial emergency response actions, NPDES assisted the MWS Stormwater Maintenance Section in following up with the numerous complaints of trash and debris in the streams. In a period of a few weeks, NPDES performed field investigations of 68 different citizen complaints of trash/debris in streams and routed them to the appropriate departments. If trash/debris dams were found near Metro infrastructure, the MWS Stormwater Maintenance Section would remove the debris. Scattered trash/debris not near Metro infrastructure was reported to the area non-profit groups who were coordinating volunteer stream clean-up activities. In addition to responding to citizen complaints, NPDES also performed proactive stream reconnaissance surveys on 31.5 miles of streams. A summary report of the 2021 Flood Reconnaissance Report is attached in Section 4 of this document.

Photographs of Typical Trash and Debris in the Creeks after the Flood Event of 2021

Watershed Improvement Fund

One of the most proactive elements of Nashville's MS4 permit compliance programs is the implementation of the Watershed Improvement Fund (WIF) which is a dedication of certain stormwater user fee funds to implement projects that are specifically designed to improve the quality of stormwater runoff in various watersheds.

In previous permit years, Metro Nashville designed and constructed a large bioretention basin to capture and treat the stormwater runoff from the Pitts Dog Park located at 299 Tusculum Road. This basin is specifically designed to capture as much runoff as possible to reduce the elevated levels of *E. coli* and nutrients from discharging into nearby Sorghum Branch, which is listed as being impaired for pathogens on the Tennessee 303(d) list. After construction was completed, NPDES purchased ADS ECHO flow monitoring devices and placed them in upstream and downstream junction boxes to measure the success of runoff capture. This monitoring, which also includes collecting grab samples during certain storms, continued throughout FY21 and into FY22.

In addition to the Pitts Park bioretention project, Metro completed engineering design and/or coordination work to advance the following future WIF projects:

- Whites Creek Bank Stabilization Project
- Manskers Creek Bank Stabilization Project
- Metro Police Impound Lot Stormwater Retrofit Project
- Two Rivers Community Dog Park Stormwater Retrofit.

The Whites Creek and Manskers Creek bank stabilization projects were funded and constructed during FY21. In order to supplement the high costs of construction in FY21, MWS also pursued funding from other sources to include the National Resources Conservation Services (NRCS) Emergency Watershed Program (EWP) and the Tennessee Department of Agriculture Section 319 non-point source funding. The sections below provide descriptions of each WIF project performed by MWS in FY21.

Whites Creek Bank Stabilization Project:

This WIF project is located on private property in the upper section of the Whites Creek watershed just downstream of the Old Hickory Boulevard crossing. For this section of the creek, there was approximately 100 linear feet of severely eroding streambank where a major sanitary sewer main parallels the creek. MWS decided to pursue this bank stabilization work as a WIF funded project, due to the water quality benefits of eliminating the potential for a ruptured sanitary sewer line and removing the large source of sediment loss to Whites Creek as the bank continued to erode during storm events. Due to the threat to public infrastructure (sewer main) and a large storm in early 2020 that exacerbated the erosion, MWS determined the bank stabilization project would qualify for funding reimbursement from the NRCS EWP.

MWS procured a contractor to construct the project with the typical NRCS design method of sloping the banks and installing large rip rap over geotextile matting. MWS had to pursue an easement agreement with the landowner, involving Metro Council Legislation to ensure the bank repairs would be conserved in perpetuity.

Photographs of the Whites Creek Bank Stabilization Project Before, During and After Construction

Manskers Creek Bank Stabilization Project

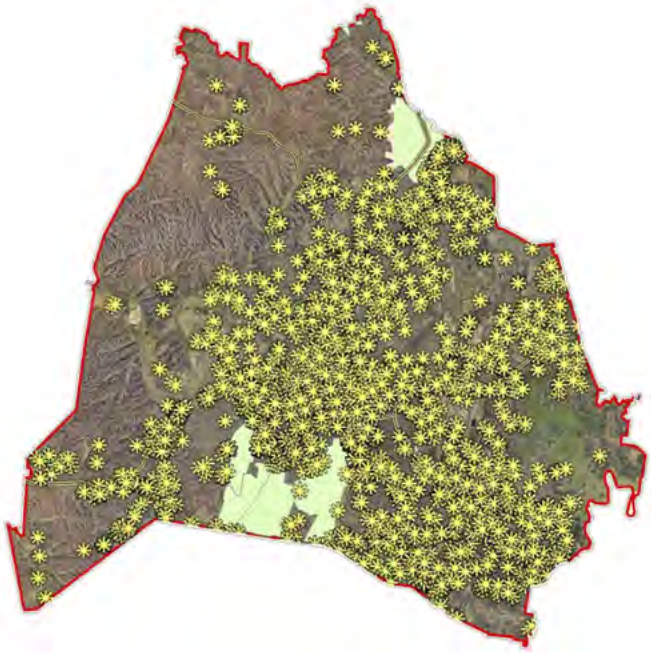
The Manskers Creek Bank Stabilization WIF Project is in the northern part of Davidson County on Metro Parks Department property. The purpose of the project was to stabilize approximately 320 linear feet of stream bank of Manskers Creek to prevent the future loss of sediment to the stream, which is listed by TDEC on the 303(d) list of streams with the unavailable parameter of sedimentation. Since eroding banks is one of the largest sources of sediment loss to streams, stabilizing this section of the stream bank will drastically reduce the sediment loads to the creek during storm events. In addition to preventing sediment loss, a sanitary sewer main and parks walking trail was also under severe threat of being compromised from the active erosion of the creek bank. Due to the threat to public infrastructure, MWS also sought supplemental reimbursement funding from the NRCS EWP program and the Tennessee Department of Agriculture (TDA) Section 319 Non-Point Source program through an already existing Cumberland River Compact grant project. Due to the size and scope of the project, the construction costs for this project were significant, but by pursuing supplemental grant funding, approximately half of the construction costs were reimbursed to Metro from the EWP and Section 319 program.

This project required ample coordination efforts between MWS, Design Consultants, Contractors, NRS, and TDA to complete the project with the appropriate documentation required for funding reimbursement. MWS chose to pursue a green design of articulated concrete block matting, to both achieve the engineering stabilization armoring requirements of NRCS design specifications and the desired vegetated bank that will improve stream bank roughness to slow water down and help to prevent future erosion downstream. The project was completed in April of 2021. Below are some photographs of the before, during, and after phases of the project.

Photographs of the Manskers Creek Bank Stabilization Project Before, During and After Construction

Stormwater Control Measure Oversight Program

At the time this report was compiled, Nashville had inventoried 6,233 post construction SCMs that have been built to treat stormwater runoff from the developed environment as required by grading permit regulations. These structures include older dry detention ponds, wet retention ponds, water quality vaults, and the relatively new "green features" such as bioretention basins, infiltration trenches and pervious pavement. NPDES began expanding its program personnel to devote more resources to SCM inspection services in FY18. NPDES's current work plan has 4 personnel dedicated to inspecting and coordinating with property owners to ensure these structures are being properly maintained. In addition, NPDES also has 1 administrative staffer receiving and documenting owner-submitted annual maintenance reports. At the time this report was compiled, NPDES just completed the first cycle of proactive SCM inspections under the expanded program, marking the first-time thousands of SCM structures had been inspected to ensure they were being maintained and functioning.



Screen Caption of the 6,233 Regulated SCMs Mapped within Davidson County

During the first cycle of the expanded NPDES SCM oversight program, NPDES performed inspections and/or re-inspections of nearly 4,000 properties that contained over 8,000 SCM structures and processed nearly 900 owner-submitted annual inspection reports. As a result of the inspection findings, NPDES issued 1,673 notices to property owners informing them of neglected maintenance needs. While some notices are in verbal or email form, the majority of the 1,673 notices issued were detailed letters that included inspection findings, a copy of the engineering plans/maintenance agreements, and photographs of the compliance issues. In addition, 39 enforcement notices were issued during first cycle when SCMs were discovered to have been intentionally altered or when SCMs were found to be non-functional and property owners failed to respond to the initial notification letters. In addition to inspecting all the privately-owned SCMs, NPDES began inspecting all the Metro-owned SCMs once a year in 2019. Prior to this change, NPDES relied on other Metro Departments to inspect their own SCMs for maintenance needs, which was determined to be inconsistent, ineffective and inefficient. With the new process, NPDES now inspects over 550 SCMs on Metro properties once a year and coordinates with each department on the maintenance needs. Since NPDES expanded the SCM oversight program in 2017, the list of private companies that special in SCM maintenance in the Metro area has grown from 18 to 29, which is directly connected to our increased notifications to properties requiring maintenance actions.

Many lessons were learned during completion of the first cycle of the expanded SCM oversight program. NPDES recognized some common findings early into the inspection cycle and quickly coordinated with MWS Development Services to pursue changes to the regulations to counter these problems. In FY21, MWS revisions to the Stormwater Management Manual were finalized, which included many of the suggested changes based on SCM field inspection findings such as the following:

- Requiring signs to be posted at the location of SCMs, such as bioretention basins so future property owners don't make unapproved alterations.
- Requiring infiltration testing for bioretention design, which should reduce the need for underdrains that drain the basin and negatively impact the health of the plants;
- Revising the standard bioretention basin design specification to include a forebay that will settle out sediment and debris prior to impacting the entire basin; and
- Requiring large residential development SCMs to be placed in open space areas that would have an HOA or Owner in Common responsible for the maintenance.

While NPDES has already strived to solve some of the more common lessons learned, there are still some common issues that NPDES is working through that are more complex to solve. One of the most common issues NPDES has encountered has been tracking down and contacting residential SCM property owners. In FY21, NPDES continued site-specific coordination with the Metro Legal Department and Metro Planning Department to determine the most effective method of requiring maintenance for residential SCMs, in which Homeowners Associations are non-existent or have never assumed responsibility of maintaining open space areas. Another common issue NPDES is working through is the lack of owner knowledge on the inspection and maintenance requirements for SCMs located on their property. NPDES began expanding SCM education resources in 2021 to include hosting a virtual workshop with area property management companies and developing SCM educational videos which describe the basic SCM functions and inspection and maintenance responsibilities for owners. NPDES will continue to expand educational outreach opportunities to SCM owners as the second cycle of inspections begins. The newly developed SCM educational videos can be found at the following website: https://www.nashville.gov/departments/water/stormwater/pollution-prevention/stormwater-control-measures

Screen Capture of the Newly Developed SCM Inspection and Maintenance Video

Urban Forestry Program and Soil and Water Conservation Programs within Stormwater

In 2018 Metro Nashville launched Root Nashville, a campaign to plant 500,000 trees by 2050. Root Nashville is a public-private partnership between the City of Nashville and the Cumberland River Compact, a local water quality-based non-profit that manages the daily operations of the campaign. To date, over twenty thousand trees have been planted and counted towards the campaign. In order to help meet Root Nashville's goals and improve the management of Nashville's urban forest, the Mayor placed the responsibility for the coordination of urban forestry efforts within the Metro Water Services, Stormwater NPDES Section. The responsibilities of this program involve overseeing a street tree inventory and interdepartmental tree meetings, managing the Emerald Ash Borer response, assisting Metro Council with tree legislation, and helping Metro lead by example in tree planting and management on their own properties.

Metro Water's urban forestry staff added an Arborist in 2020 and a Horticulturalist in 2021. Two additional positions should be filled in the upcoming FY22. They planted over 2,200 trees in FY21 and are planning plantings in the right-of-way (ROW) and at Metro schools in FY22. A five-year maintenance cycle will also begin for trees in the ROW this year. Metro's Water's urban forestry group is concentrating on street trees to help mitigate stormwater runoff from Nashville's streets and sidewalks. NPDES is planning to expand their urban forestry efforts and capacity over the next few years to increase the benefits provided by Nashville's trees and tree canopy.

Davidson County Soil and Water Conservation:
The Davidson County Soil Conservation District was established in 1946 as a subdivision of the state government. The mission of the Davidson County Soil Conservation District has been to provide conservation planning, education, information and technical assistance to landowners, groups, and units of government so they can enhance and benefit from the proper management of our natural resources. In 2018, this program was moved to the MWS Stormwater NPDES Office due to the common goals of the programs and operational efficiencies.

The Soil and Water Conservation Program is complimentary to the NPDES program as they perform various functions such as educating local landowners on soil and water conservation practices, livestock management processes that reduce impacts to water resources and local watersheds from certain landowner activities. In addition, the program also provides technical assistance to landowners on conservation techniques, specifically by offering cost share funds allocated from Tennessee Department of Agriculture and USDA/NRCS for best management practices for Davidson County Watersheds. The Conservation programs reduce soil erosion, enhance water supply, improve water quality, increase wildlife habitat, and reduce damages caused by floods and other natural disasters. This program is unique in that it promotes the installation of best management practices that can directly benefit water quality runoff from private property.

This realignment of departments paid dividends in FY21, as the Soil and Water Conservation Program identified the potential for the NPDES program to qualify some of the WIF projects for NRCS EWP funding when critical infrastructure is being protected. As mentioned earlier, NPDES utilized this new knowledge to implement the design and construction coordination on two bank stabilization projects on Whites Creek and Manskers Creek. By seeking partial reimbursement of funds, NPDES will be able to leverage more of the WIF funds toward other water quality improvement projects.

Water Quality Improvement Project (WQIP) Cooperation with the Cumberland River Compact:
In 2020, MWS entered into a new cooperative agreement with the non-profit organization Cumberland River Compact (CRC) to perform a variety of water quality improvement projects throughout various Metro sub-watersheds. This relationship with CRC started ten years ago when MWS entered into an agreement with them to assist in performing Supplemental Environmental Projects as required from the EPA Consent Decree for MWS' sanitary sewer collections system. MWS has extended this agreement even after the consent decree as it has been identified as having a huge benefit for water quality.

The WQIP agreement gives MWS the ability to leverage work being performed on private land to improve water quality and provides for even more engagement and education opportunities for Nashville citizens in water stewardship activities. With MWS' commitment of $375,000 in funding, the following bullets include just some of the deliverables that will be accomplished within the 5-year agreement:

- 1,500 trees planted on floodplain buyout properties
- Converting approximately 4,000 square feet of turf to stormwater infiltration zones
- Planting 500 trees in Davidson County in support of the Root Nashville Program
- Conducting one neighborhood de-paving project to promote stormwater infiltration
- Constructing 10 rain garden builds
- Stabilize 50 linear feet of stream banks per year.
- Reach over 2,000 citizens with direct education on water quality and green infrastructure.

Specific WQIP accomplishments to-date can be found in Section 4 of this document.

1.3.2 Other Metro Department Activities:

In addition to MWS Stormwater Division activities, many other Metro Departments perform critical roles in promoting improved stormwater quality runoff throughout Metro.

Metro Parks and Recreation Department

Metro Nashville Parks and Recreation Department (MNPR) has been a key player in improving stormwater runoff and riparian habitat on Metro properties. Below are some of the major MNPR activities that have either been performed or are planned that serve to improve the quality of stormwater runoff:

Environmental Education Programs - Metro Parks Nature Centers have a direct positive impact on water quality and conservation through its environmental education programs, interpretive exhibits, green facilities, and watershed protection. On average, nearly 30,000 individuals participate in nature center programs, many of which focus on the importance of clean water. In addition, hundreds of thousands of visitors to Metro's parks were exposed to water resources education such as the educational exhibits at the four Metro Parks nature centers. Each of these nature centers also feature amenities that conserve water resources and provide passive education opportunities to visitors. These include green roofs, water chains, rain barrels, teaching ponds, stream bank restoration areas, pervious paving materials, rain gardens and cisterns.

Dog Waste Pick-up on MNPR Property – During the reporting year, approximately 578,000 dog waste bags were distributed at MNPR properties. Based on the amount of dog waste bags distributed, it is estimated that approximately 113,000 pounds (56.5 tons) of dog waste were collected for proper disposal.

Parks Land Conservation - The majority of Parks and Recreation Department's 14,000 plus acres and over 60 miles of greenway corridor have continued to be maintained in a natural condition, providing vitally important protections to our watersheds, including many critical headwater streams. Each year MNPR plants many trees on a variety of parks properties.

Nashville Planning Department:

Nashville's Planning Department focuses on sustainable development as described in the Community Character Manual, which encourages sustainable development and preservation in Nashville/Davidson County's fourteen community plans that guide future land use entitlements and infrastructure decisions. A foundational principle of the Community Character Manual is the commitment to create sustainable communities through sustainable development. Key strategies include actions to address each property's unique location and geographic features, while avoiding sensitive environmental features. This benefits the community by protecting water quality, as well as reducing the impact of development on surrounding infrastructure and the community through the use of best practices in stormwater and wastewater management. In addition, the Community Character Manual includes objectives of the EPA and Metro Nashville's Stormwater Management Program, such as incorporating green infrastructure, protecting steep slopes and headwater areas, minimizing and/or recovering floodplain loss, and retaining or re-creating natural stream buffers. The Community Character Manual also includes a section of general principles which highlights the importance of minimizing the impact of development on the natural environment, especially air and water quality, and of integrating green space in developments for preservation, recreation, and healthy lifestyles.

In 2015, the Planning Department completed the city's update to Nashville's General Plan, which was created with city-wide community involvement and input. The process is referred to as NashvilleNext and is the vision and priorities for Nashville/Davidson County for the next 25 years. NashvilleNext includes a Growth & Preservation Concept Map that encourages additional development along the city's corridors and in mixed use centers, while preserving rural areas and areas of sensitive natural features.

One of the four foundations of the plan is a healthy environment. In addition, one of the seven principles in NashvilleNext is to champion the environment. NashvilleNext discusses the importance of how we as a city:

- Build a community founded on land and water conservation, preservation of sensitive environmental conditions, and sustainable development practices.
- Promote efficient transportation and well-designed neighborhoods to achieve healthy living, preserve the natural environment, and encourage resiliency and safety in the face of natural and manmade disasters.
- Sustain the ecological function, resource value, and character of sensitive environmental and rural lands.
- Bring nature into the city through parks, greenways, a healthy urban forest, and clean streams, creeks, and rivers.
- Leave future generations an environment that is healthier than todays.

On a day-to-day basis, having quality natural areas betters the quality of life for people, plants, and animals. Nashville's current and projected population growth could degrade the current quality of life and jeopardize Nashville's natural and built environment. In addition to the pressure of sheer growth, demographic changes—such as the growth of Baby Boomer and Millennials seeking more compact, walkable communities and the increase of single-person households—will also drive new locations and forms of development in our communities. A renewed emphasis on public outreach, education, and personal responsibility will activate new stewardship to conserve energy, eliminate and reduce waste, preserve land, build high performance buildings, and create a culture of sustainability. Meanwhile, public policies, incentives, and private decision-making must provide a clear direction on what to preserve and how to build and grow our city in a more sustainable fashion than we do today. This will enable us to secure the best Nashville for current and future generations.

NashvilleNext contains seven plan elements. Nashville/Davidson County's natural resources area discussed in three elements—Natural Resources & Hazard Adaptation; Health, Livability & the Built Environment; and Land Use, Transportation & Infrastructure. Each element discusses goals, policies, and actions that guide Nashville's future. Relevant element goals, policies, and actions include to:
Conserve natural resources in order to mitigate floods and other natural hazards, ensure clean air and water, raise food locally, provide outdoor recreation, and preserve Nashville's culture and character.
Invest in and increase Nashville's natural environment for beauty, biodiversity, recreation, food production, resiliency, and response to climate change through mitigation and adaptation strategies.
Preserve Nashville's existing tree canopy, including urban trees, street trees, and larger tracts of forested lands.

- Enjoy (all communities) equally high levels of environmental protection, equitable access to nature, and opportunities to improve their health and quality of life.
- Conserve and efficiently use land, energy, water, and resources while reducing waste and pollution.
- Establish a wide-ranging green education campaign that focuses on the "why" and "how" for water conservation, energy efficiency and reductions, recycling and waste reduction, natural resources preservation, and outdoor activity.
- Ensure all communities have access to parks, green areas, cultural amenities, and recreation opportunities that support mental and physical well-being.
- Optimize sewer, water, stormwater, and other infrastructure within Nashville's centers and corridors to prepare for or coordinate with redevelopment. Use green infrastructure to reduce the need for upgrades and to improve streetscapes.
- Reduce the impact of construction on surrounding infrastructure and community through use of best practices in stormwater management, wastewater management, and reducing heat island effect and light pollution.
- Expand programs and institute more complete regulations to protect Nashville's sensitive environmental resources.

During 2020, the Planning Department wrapped up a corridor plan for properties along Dickerson Pike from Trinity Lane north to Skyline. The study areas included properties with floodplains, stream buffers, and steep slopes associated with Pages Branch, a tributary to the Cumberland River. The plan calls for ample greenspace, including a greenway along Pages Branch that would connect with the Cumberland River as well as northwards to Ewing Creek. Creating a greenway provides additional opportunities to orient buildings and recreational activities towards the trail, provides mobility and recreation options, and enhances natural resources. As properties redevelop, other goals and objectives focus on the protection of natural resources through best practices for stormwater infrastructure and incorporation of protected natural features into any redevelopment's site designs. The addition of greenspace including pocket parks, recreation facilities, trails, and playgrounds is encouraged throughout the areas as is utilizing green infrastructure techniques. During 2021, Planning, along with a consultant team and others, began a study for the East Bank, an area along the Cumberland River across from Downtown. Planning is also part of a team helping 2nd Avenue downtown recover and rebuild from the Christmas Day bombing. Central to both these studies is activating our riverfront and highlighting the river, not only for the water functions it provides but also as an important component of our city's fabric and cultural resource, including stormwater absorption, green space, parks, greenways, and mobility options in crossing.

The Planning Department continues its collaboration with Metro Parks and Greenways and the Land Trust for Tennessee by identifying properties that would be good additions to Nashville's open space network. This includes properties that are important to preserve for headwater areas, for wildlife habitat, and for water management in flood-prone areas. On a daily basis, the Planning Department meets with property owners and development professionals to discuss property ideas and projects. Planning staff discuss the importance of preserving sensitive environmental features and working within the natural features of each site and regarding them as community amenities, including features such as waterways, wet weather conveyances, drainage patterns, steep slopes, woodlands, riparian habitat, and mature trees. Where appropriate, Planning staff direct property owners and development professionals to continue those discussions with Metro Water Services and the Stormwater Division for additional guidance and ideas.

MWS Engineering Division (Clean Water Nashville)

The MWS Engineering Division and the Clean Water Nashville (CWN) program oversees the overall functionality of the sanitary sewer systems and have worked diligently to minimize the volume of unintentional discharges of sanitary sewer overflow material to the MS4 and community waterways. MWS has dramatically increased its involvement on projects to reduce overflows from both the Combined Sewer System (CSS) and the Separate Sewer System (SSS) over the last 11 years. Due to financial delays of getting contracts awarded in FY21, caused by the COVID-19 Pandemic, the number of large Capital Improvement Projects was less than in previous years. During FY20, the Mayor and Council approved a sewer fee rate increase, which increased the funding to implement future large projects to keep up with the unprecedented population growth, while reducing the potential for sanitary sewer overflows. Table 3 lists the major projects undertaken by the MWS Overflow Abatement Program (OAP) that has been completed, which serves to greatly reduce discharges of sanitary waste to the MS4 or area streams. Table 4 provides a list of future projects that are planned to be completed in future reporting years depending on funding availability.

Table 3 – MWS Engineering Projects to Reduce Sanitary Overflows

Type of Projects	# of Projects	Miles of Sanitary Lines	Money Spent	Watersheds Where Work was Performed
Sewer Rehabilitation Projects in FY21	1	0.30	$1 Million	Mill Creek, Ewing Branch, Seven Mile Creek, Hurricane Creek
Pump Station and Equalization Projects in FY 2021	1	N/A	$6 Million	Davidson Branch
Sewer Line Replacements in FY 2021	0	0.00	0	N/A
Total Completed Projects in FY 2021	1	0.30	$7 Million	Various

Table 4 – Future MWS Engineering Projects to Reduce Sanitary Overflows

Type of Projects	Miles of Sanitary Lines	Money Spent	Watersheds Where Work was Performed
Davidson Branch WWPS and Equalization Facility: Design of this facility, which will provide a new WWPS for reliability and 6 MG of storage for wet weather flows to reduce SSO events, began in May 2015 and was completed in October 2016. Construction began in October 2020 and will continue into FY 2023.		$29 Million	Davidson Branch, Cumberland River
Gibson Creek Equalization Facility: Design of this facility, which will provide 10 MG of storage capacity for wet weather flows to reduce SSO events, began in August 2016. Design was completed in December 2017 and the bids were received for construction in April 2021. Construction will begin in FY 2022.		$19.5 Million	Gibson Creek, Cumberland River
Central Wastewater Treatment Plant - Capacity Improvements and CSO Reduction: The design process for improvements to the CWWTP for Optimization, CSO reduction, and other improvements began with the selection of two teams for Planning and Design and engagement of a Construction Manager at Risk. Design began in June 2017 and was concluded in FY 2020. Construction began in July 2020 and will continue into FY 2024.		$360 Million	Cumberland River
Annual Rehabilitation 2017 - Dry Creek: Design began in May 2017 for this project, which will reduce I/I related issues in the collection system. Design was completed in September 2017. The project was advertised for bid in June 2021 and will begin construction in FY 2022.	4.92	Estimated $4.6 Million	Dry Creek, Cumberland River
Shelby Park Rehabilitation - Area 6 - Shelby Trunk: Design began in February 2017 on this project, which will reduce I/I related issues in the trunk sewer located in the Shelby Park basin. Design was completed in December 2017 and the project was advertised for bid in December 2020. Construction will begin in FY 2022.	3.89	$8.8 Million	Cooper Creek, Cumberland River
Annual Rehabilitation 2017 - Shepherd Hills: Design began in May 2017 for this project, which will reduce I/I related issues in the collection system. Design was completed October 2017. Construction is scheduled to begin in FY 2021.	5.49	Estimated $4.4 Million	Dry Creek, Cumberland River
Smith Springs Rehabilitation - Area 3 - Harbour Town: Design began in June 2017 for this project, which will reduce I/I related issues in the collection system. Design was completed in January 2018. Construction is scheduled to begin in FY 2022.	5.30	Estimated $5.7 Million	Hamilton Creek (East Fork), Percy Priest Reservoir
Hurricane Creek Pipe Improvements: Design of this project, to increase capacity and eliminate I/I issues within the existing trunk sewer, began in April 2016, and was completed in January 2018. Construction is anticipated to begin in FY 2022 dependent upon completion of easement acquisitions.	2.29	Estimated $12.6 Million	Hurricane Creek, Percy Priest Reservoir
Sevenmile Creek Rehabilitation - Area 1: Design of this project to reduce I/I issues in the Mill Creek basin began in July 2018 and was completed in March 2019. Construction is anticipated to begin in FY 2022.	7.80	Estimated $8.2 Million	Sevenmile Creek, Mill Creek, Cumberland River
28th Avenue Rehabilitation - Area 2 - Batavia Street: Design of this project to reduce I/I issues began in May 2020 and will continue through FY2021. Construction is anticipated to begin in FY2022.	9.30	Estimated\ $7.4 Million	Cumberland River

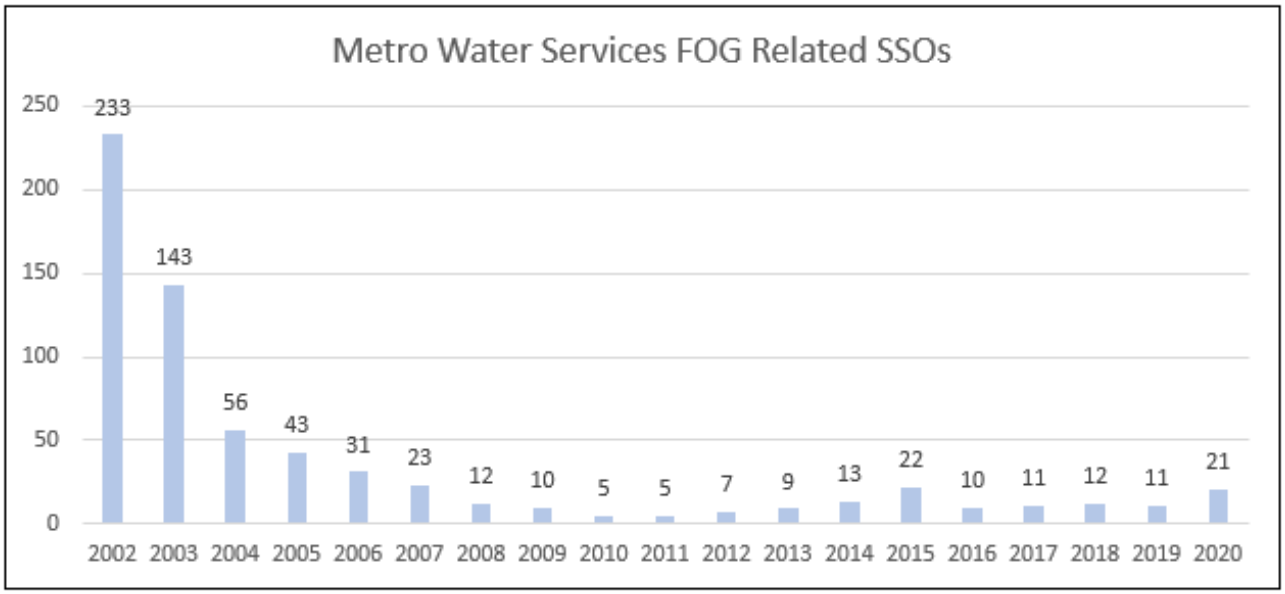
MWS System Services Division

The Metro Water Services System Services Division (SSD) and its contractors continued to inspect and clean sewers to assess conditions and prevent potential overflows. In FY21, SSD and contractors inspected with Closed Circuit TV (CCTV) approximately 561,345 linear feet and cleaned approximately 186,268 linear feet of Metro sewer line. During FY21, SSD continuously reviewed information from CCTV sewer inspection reports that indicated sewer problems with grease or roots. In some instances, letters were sent out to notify customers of roots or grease in their private service lines or main lines and recommend corrective actions to prevent private sewer overflows. The estimated/reported MWS sewer overflows for FY21 are depicted in Table 7H.5 within Section 3 of this report.

MWS Environmental Compliance Section

The MWS Environmental Compliance Section proactively inspects grease control equipment at food service establishments to ensure they are being maintained appropriately and functioning to prevent Fats, Oils, and Grease (FOG) from discharging to the sanitary sewer system. In the calendar year of 2020, MWS issued 66 Noncompliance Notifications (NCNs), 8 NOVs, and 5 Compliance Orders issued to food service establishments for a variety of discovered failures in the grease control equipment that, if left uncorrected, could cause Sanitary Sewer Overflows (SSOs) to the MS4.

When FOG is identified as the primary cause of an SSO, Metro Water Services responds by investigating the possible FOG sources and issuing enforcement action notifications as necessary to prevent any future SSO events. For the year 2020, there were 21 SSOs identified as FOG related in which MWS Environmental Compliance performed follow-up coordination and education with the facilities or residences that could have been possible contributors. Metro Water Services Environmental Compliance personnel or their FOG program contractor, meet with apartment, condominium, or duplex managers or owners regarding any FOG blockages and SSO problems that occur downstream from their facilities. In addition, MWS Environmental Compliance alerts MWS NPDES staff when issues are found during inspections that may be resulting in impacts to stormwater runoff. As a result of MWS Environmental Compliance efforts, FOG-related SSOs have been dramatically reduced over the years.



2.0 MS4 Program Annual Report Form Required By TDEC

Tennessee Department of Environment and Conservation
Division of Water Pollution Control
Enforcement and Compliance Section
L&C Annex, 6th Floor, 401 Church Street
Nashville, TN 37243
TNS068047
Municipal Separate Storm Sewer System (MS4) Annual Report

1. MS4 Information

Nashville/Davidson County Municipal Separate Storm Sewer System (No. TNS068047)
Name of MS4

Michael Hunt/Josh Hayes
Name of Contact Person

615-880-2420
Telephone (including area code)

1607 County Hospital Rd
Mailing Address

Nashville	TN	37218
City	**State**	**ZIP code**

What is the current population of your MS4? *Approximately 650,000+*

What is the reporting period for this annual report? *The reporting period for this Annual report is from 07/01/20 to 06/30/19, which is the 10th reporting period under the current permit. This Annual Report coincides with Metro's Fiscal Year 2021 (FY21) activities. This annual report period took place after the permit's expiration date, which has been administratively extended for Metro to continue to perform all MS4 Permit activities detailed within the permit.*

2. Protection of State or Federally Listed Species

A. Do any of the MS4 discharges or discharge-related activities likely jeopardize state or federally listed species ☐ Yes **X** No

B. Please attach the determination of the effect of the MS4 discharges on state or federally listed species per subpart *Endangered Species Assessment included in Attachment A.*

3. Water Quality Priorities

A. Does your MS4 discharge to waters listed as impaired on your state 303(d) list? **X** Yes ☐ No

B. If yes, identify each impaired water, the impairment(s), whether a TMDL has been approved by EPA for each, and whether the TMDL identifies your MS4 as a source of the impairment *(See below Checklist)*. *The below list represents the approved 2020 list.*

Impaired Water	Impairment	Approved TMDL	MS4 Assigned to WLA
East Fork Hamilton Creek (TN05130203-539-1000)	Habitat Alteration, Siltation	Yes X No	Yes X No
West Fork Hamilton Creek (TN05130203-539-1000)	Habitat Alteration, Siltation	Yes X No	Yes X No
Suggs Creek (TN05130203-232-1000)	Siltation, Nutrients	Yes X No	Yes X No
McCrory Creek (TN05130203-001-0150)	Alteration in stream-side or littoral veg. cover, Nitrite+Nitrate	X Yes No	X Yes No
McCrory Creek (TN05130203-001-0100)	*E. coli*, Alteration in stream-side or littoral veg. cover, Nitrite+Nitrate, Siltation	X Yes No	X Yes No
Unnamed Trib. to Stoners Creek (TN05130203-035-0400)	Siltation	X Yes No	X Yes No
Stoners Creek (TN05130203-035-1000)	*E. coli*, Siltation	X Yes No	X Yes No
Stoners Creek (TN05130203-035-2000)	*E. coli*	Yes X No	Yes X No
Stones River (TN05130203001-1000)	Low DO, Odor, Sulfides, Flow Alteration	Yes X No	Yes X No
Scotts Creek (TN051302 03-035-0100)	Total Phosphorus, Nitrate+Nitrite, Siltation	Yes X No	Yes X No
Dry Fork Creek (TN05130203-035-0300)	Siltation	Yes X No	Yes X No
West Branch Hurricane Creek (TN05130203-036-0200)	Nutrients, Siltation	X Yes No	X Yes No
East Branch Hurricane Creek (TN05130203-036-0100)	Habitat Alteration, Siltation	Yes X No	Yes X No
Hurricane Creek (TN05130203-036-0100)	*E. coli*, Siltation, Nutrients,	X Yes No	X Yes No
Mill Creek (TN05130202-007-5000)	Siltation, Total Phosphorus, Low DO	X Yes No	X Yes No
Pavillion Branch (TN05130202007-1500)	*E. coli*	X Yes No	X Yes No
Holt Creek (TN05130202-007-1100)	*E. coli*, Nitrate+Nitrite, Total Phosphorus	Yes X No	Yes X No

Impaired Water	Impairment	Approved TMDL	MS4 Assigned to WLA
Owl Creek (TN05130202-007-0900)	Alteration in stream-side or littoral veg. cover, Total Phosphorus	Yes X No	Yes X No
Indian Creek (TN05130202-007-0800)	*E. coli*, Total Phosphorus, Siltation	Yes X No	Yes X No
Turkey Creek (TN05130202-007-0700)	*E.coli*	Yes X No	Yes X No
Collins Creek (TN05130202-007-0600)	Alteration in stream-side or littoral veg. cover, Siltation	Yes X No	Yes X No
Whittemore Branch (TN05130202-007-1200)	*E. coli*, Habitat Alteration	Yes X No	Yes X No
Mill Creek (TN05130202-007-3000)	Siltation, Total Phosphorus, Low DO, *E. coli*	Yes X No	Yes X No
Sorghum Branch (TN05130202-007-1300)	Habitat Alteration, Siltation, *E. coli*	Yes X No	Yes X No
Cathy Jo (TN05130202-007-1490)	*E. coli*, Nitrate+Nitrite, Total Phosphorus, Other Anthropogenic substrate alterations, Siltation	Yes X No	Yes X No
Shasta Branch (TN05130202-007-1410)	*E. coli*	X Yes No	X Yes No
Sevenmile Creek (TN05130202-007-1450)	*E. coli*, Total Phosphorus, Nitrite+Nitrate	X Yes No	X Yes No
Sevenmile Creek (TN05130202-007-1400)	*E. coli*, Other Anthropogenic Habitat Alteration, Total Phosphorus, Nitrite+Nitrate, Low DO	X Yes No	X Yes No
Finley Branch (TN05130202-007-0300)	*E. coli*, Other Anthropogenic Habitat Alteration, Total Phosphorus	X Yes No	X Yes No

Impaired Water	Impairment	Approved TMDL	MS4 Assigned to WLA
Mill Creek (TN05130202-007-2000)	Siltation, Total Phosphorus, Low DO, *E. coli*	Yes X No	Yes X No
Sims Branch (TN05130202-007-0150)	Other Anthropogenic Habitat Alteration, Low DO, Propylene Glycol	Yes X No	Yes X No
Sims Branch (TN05130202-007-0100)	*E. coli*, Other Anthropogenic Habitat Alteration, Total Phosphorus, Low DO	X Yes No	X Yes No
Mill Creek (TN05130202-007-1000)	*E. coli*, Siltation, Total Phosphorus, Low DO	X Yes No	X Yes No
Manskers Creek (TN05130202-220-2000)	*E. coli*, Siltation, Low DO	X Yes No	X Yes No
Lumsley Fork (TN05130202-220-0100)	*E. coli*	X Yes No	X Yes No
Manskers Creek (TN05130202-220-1000)	*E. coli*, Siltation	X Yes No	X Yes No
Unnamed Trib. to Walkers Creek (TN05130202-220-1000)	Flow Alteration	Yes X No	Yes X No
West Fork Browns Creek (TN05130202-023-0300)	*E. coli*, Total Phosphorus, Nitrite+Nitrate, Other Anthropogenic Habitat Alterations	X Yes No	X Yes No
Middle Fork Browns Creek (TN05130202-023-0200)	*E. coli*, Other Anthropogenic Habitat Alterations, Total Phosphorus, Nitrite+Nitrate	X Yes No	X Yes No
East Fork Browns Creek (TN05130202-023-0100)	*E. coli*, Other Anthropogenic Habitat Alterations, Total Phosphorus, Nitrite+Nitrate, Oil & Grease	X Yes No	X Yes No

Impaired Water	Impairment	Approved TMDL		MS4 Assigned to WLA	
Browns Creek (TN05130202-023-1000)	*E. coli*, Other Anthropogenic Habitat Alterations, Total Phosphorus, Nitrite+Nitrate, Oil & Grease	X Yes	No	X Yes	No
Browns Creek (TN05130202-023-2000)	*E. coli*, Other Anthropogenic Habitat Alterations, Total Phosphorus, Nitrite+Nitrate, Oil & Grease	X Yes	No	X Yes	No
Richland Creek (TN05130202-314-3000)	Other Anthropogenic Habitat Alterations, Total Phosphorus, Nitrite+Nitrate, *E. Coli*	X Yes	No	X Yes	No
Vaughns Gap Branch (TN05130202-314-0750)	*E. coli*, Other Anthropogenic Habitat Alterations	X Yes	No	X Yes	No
Vaughns Gap Branch (TN05130202-314-0700)	*E. coli*, Other Anthropogenic Habitat Alterations, Total Phosphorus, Nitrite+Nitrate	X Yes	No	X Yes	No
Jocelyn Hollow Branch (TN05130202-314-0800)	*E. coli*, Total Phosphorus, Nitrite+Nitrate	X Yes	No	X Yes	No
Richland Creek (TN05130202-314-2000)	Other Anthropogenic Habitat Alterations, Total Phosphorus, Nitrite+Nitrate, *E. Coli*	X Yes	No	X Yes	No
Sugartree Creek (TN05130202-314-0400)	*E. coli*, Other Anthropogenic Habitat Alterations, Total Phosphorus, Nitrite+Nitrate, Low DO	X Yes	No	X Yes	No
Bosley Springs Branch (TN05130202-314-0300)	*E. coli*, Other Anthropogenic Habitat Alterations, Total Phosphorus, Nitrite+Nitrate	X Yes	No	X Yes	No
Richland Creek (TN05130202-314-1000)	Other Anthropogenic Habitat Alterations, Total Phosphorus, Nitrite+Nitrate, *E. coli,* Siltation	X Yes	No	X Yes	No
Cooper Creek (TN05130202-209-1000)	*E. coli*, Other Anthropogenic Habitat Alterations	X Yes	No	X Yes	No

Impaired Water	Impairment	Approved TMDL	MS4 Assigned to WLA
Ewing Creek (TN05130202-010-0900)	*E. coli*, Other Anthropogenic Habitat Alterations, Siltation, Total Phosphorus	X Yes No	X Yes No
Drakes Branch (TN05130202-010-0200)	*E. coli*, siltation	X Yes No	X Yes No
Whites Creek (TN05130202-010-1000)	Nutrients	Yes X No	Yes X No
Gibson Creek (TN05130202-212-1000)	Other Anthropogenic Habitat Alterations	Yes X No	Yes X No
Neelys Branch (TN05130202-212-0100)	*E. coli*	X Yes No	X Yes No
Dry Creek (TN05130202-027-2000)	Other Anthropogenic Habitat Alterations, *E.coli*	Yes X No	Yes X No
Dry Creek (TN05130202-027-1000)	*E. coli*	X Yes No	X Yes No
Loves Branch (TN05130202-211-1000)	Other Anthropogenic Habitat Alterations	Yes X No	Yes X No
Pages Branch (TN05130202-202-1000)	*E. coli*	X Yes No	X Yes No
Davidson Branch (TN05130202-001T-0700)	*E. coli*, Other Habitat Alteration	Yes X No	Yes X No
Unnamed Trib. to Cheatham Reservoir (TN05130202-001T-0700)	Iron, TDS	Yes X No	Yes X No
Cheatham Reservoir (TN05130202-001-3000)	*E. coli*	Yes X No	Yes X No
Overall Creek (TN05130202-001T-0900)	*E. coli, S*iltation, Flow Alteration	Yes X No	Yes X No
Otter Creek (TN05130204-021-0100)	Total Phosphorus, Alteration in stream-side or littoral vegetative cover, Siltation, Flow Alteration	X Yes No	X Yes No

Impaired Water	Impairment	Approved TMDL	MS4 Assigned to WLA
Little Harpeth River (TN05130204-021-1000)	Alteration in stream-side or littoral vegetative cover, Siltation, *E. coli*	X Yes No	X Yes No
Harpeth River (TN05130204-009-2000)	Total Phosphorus, Low DO	X Yes No	X Yes No
Trace Creek (TN05130204-009-0900)	Physical Substrate Habitat Alteration, Siltation	X Yes No	X Yes No
Flat Creek (TN05130204-009-0400)	Alteration in stream-side or littoral vegetative cover, Siltation	X Yes No	X Yes No
Unnamed Trib. to South Harpeth (TN05130204-010-0200)	Flow Alteration	Yes X No	Yes X No
Unnamed Trib. to South Harpeth (TN05130204-010-0300)	Alteration in stream-side or littoral vegetative cover	Yes X No	Yes X No
Harpeth River (TN05130204-009-3000)	Total Phosphorus, Low DO	X Yes No	X Yes No
Beech Creek (TN05130204-009-1100)	Alteration in stream-side or littoral vegetative cover, Siltation	X Yes No	X Yes No

C. What specific sources of these pollutants of concern are you targeting?

Pathogens (pet waste, sanitary sewer leaks), siltation (construction sites), oil & grease (industries/commercial sites), and nutrients (pet waste, sanitary sewer leaks, fertilizer application)

D. Do you have discharges to any Exceptional TN Waters (ETWs) or Outstanding National Resource Waters (ONRWs)?

X Yes ☐ No

A large portion of Metro drains to Mill Creek, which is listed as an ETW due to the presence of the federally endangered Nashville Crayfish (Faxonius shoupi). A portion of the Harpeth River in Davidson County is listed as a State Scenic Riverway.

E. Are you implementing additional specific provisions to ensure the continued integrity of ETWs or ONRWS located within your jurisdiction?

X Yes ☐ No ☐ N/A

Specific public education activities have been implemented in the past for certain residential areas that drain to the Harpeth River and commercial/industrial areas that drain to Mill Creek. Nutrient and pathogen reduction education has been and will be focused on that area. The Stormwater Maintenance Sections and the MWS Sanitary Sewer Division have been trained on limiting in-creek excavation work within the Mill Creek watershed. Metro also implements a robust construction oversight program to prevent excess sediment from draining to these high valued waterways.

4. Public Education and Public Participation

A. Is your public education program targeting specific pollutants and sources of those pollutants? X Yes ☐ No

B. If yes, what are the specific causes, sources and/or pollutants addressed by your public education program?

Pathogens (pet waste), siltation (construction sites), nutrients (residential lawn maintenance & pet waste), and oil & grease (commercial/industrial facilities).

C. Note specific successful outcome(s) (NOT tasks, events, publications) fully or partially attributable to your public education program during this reporting period.

During the reporting period of FY21, NPDES performed many activities to increase public education and awareness for many diverse stormwater issues, all of which are detailed in Section 4 of this document. In particular, NPDES continued to utilize the social media presence in order to educate a next generation (and community in general) about stormwater issues and pollution. Four main social media sources (Facebook, Twitter, NextDoor, and Instagram) were utilized to reach local citizens. Typical content of the posts focused on drawing the connection of storm drains to our local water resources to encourage the general public to work towards reducing pollution. Various types of visual media were used to depict the kinds of pollutants that can end up in our streams and how Metro residents can do their part to reduce it. Pollutants that were specifically targeted included lawn chemicals, lawn wastes, pet waste, and general trash. In particular, during FY21, MWS issued a total of 662 posts that reached 3,527,971 viewers. While some of these posts were drinking water and wastewater related, many of them included stormwater-specific messaging. NPDES also continued to perform specific stormwater educational events such as participating in citywide events with educational booths, presenting on stormwater topics at various venues, distributing neighborhood-specific door hangers, sending out email notices, etc. During FY21, NPDES reached an estimated audience size of 43,991 with these educational techniques.

D. Do you have an advisory committee or other body comprised of the public and other stakeholders that provides regular input on your stormwater program?

Metro has a Stormwater Management Committee (SWMC) that reviews cases where development/redevelopment activities are unable to meet specific provisions of the stormwater regulations and hears appeals of violation decisions by the Director's office. The members of the committee are appointed by the Mayor's office. The SWMC monthly meetings are televised on Metro's Local Channel 3 which provides visibility of Metro stormwater matters as well as public education.

X Yes ☐ No

E. Provide a summary of all public meetings required by the permit.

Metro has various agencies that perform projects involving public meetings. For example, the MWS Stormwater Remedial Maintenance Section holds meetings for certain large-scale maintenance projects on an as-needed basis. The Metro General Services Department holds various public meetings for large Metro Development activities. In addition, the Metro Planning Commission provides numerous opportunities designed to receive feedback from the general public or other stakeholders on a routine basis. Information on public meeting opportunities can be found at the following website link:

https://www.nashville.gov/departments/planning/boards/planning-commission/meetings

MWS Stormwater also specifically facilitates monthly meetings with the Stormwater Management Committee for sites appealing specific stormwater regulations. These meetings are available for the public to attend and comment and are advertised on the internet and at the property in question with a standard public notification sign. During the reporting period, Metro Stormwater facilitated 8 separate SWMC meetings. Several of the meetings were cancelled due to the COVID-19 Pandemic, however, in FY21, Metro began hosting virtual meetings through WebEx providing the public with opportunity to comment via email and/or phone. More information about the SWMC process as well as meeting minutes from each meeting is available at the following website:

http://www.nashville.gov/Water-Services/Developers/Stormwater-Review/Variance-Appeal-Information/Meeting-Dates-Deadlines.aspx

5. Codes and Ordinances Review and Update

A. Is a completed copy of the EPA Water Quality Scorecard submitted with this report? *A copy of the scorecard was submitted in the FY12 annual report (First Year of this current permit cycle)*. ☐ Yes X No

B. Include status of implementation of code, ordinance and/or policy revisions associated with permanent Stormwater management.

MWS Stormwater has already developed and revised a new volume of the Stormwater Management Manual (SWMM) (Volume 5) dedicated to promoting/incentivizing the use of Low Impact Development (LID) techniques for post development stormwater management. In 2007, Metro was promoting/incentivizing the use of runoff reduction/100% pollution reduction practices, but still allowed development sites to utilize standard stormwater quality treatment practices of 80% total suspended solids (TSS) removal. In February of 2016, Metro revised the SWMM to require all development activities to pursue runoff reduction practices for stormwater quality treatment, unless certain site constraints were demonstrated to be present (i.e. high ground water table, clay soils, karst areas, shallow bedrock, brown fields, etc.). MWS Stormwater has developed a waiver process for sites that due to site limitations are requesting to revert to the standard water quality treatment practices. Since the new regulations were implemented in 2016, MWS has received 294 LID Waiver requests in which decisions have been made. As a result, 233 of the requests were eventually approved (some with conditions), while 61 requests were denied or withdrawn. During FY21, MWS finalized the latest round of updates to the entire SWMM to improve the overall stormwater regulations, including updating some of the LID controls and requirements. The update process was slightly delayed by the COVID-19 pandemic and stakeholder coordination. The update to the SWMM became effective in November 2021. .

6. Construction

A. Do you have an ordinance or adopted policies stipulating:

Erosion and sediment control requirements?	X Yes ☐ No
Other construction waste control requirements?	X Yes ☐ No
Requirement to submit construction plans for review?	X Yes ☐ No
MS4 enforcement authority?	X Yes ☐ No
Have you developed written procedures for site plan review and approval?	X Yes ☐ No
Do the written procedures for site plan review and approval include an evaluation of plan completeness and overall BMP effectiveness?	X Yes ☐ No

Have you developed written procedures for managing public input on projects? ☐ Yes X No

Metro Nashville manages public input in a variety of different ways throughout various departments. There are no written procedures for managing the public feedback. Please refer to the above section on public engagement on stormwater development projects. MWS also publishes a list of Metro construction projects that have received coverage under a TDEC Construction General Permit once a month, which is posted on the Metro web page and distributed monthly to "subscribers" of this information. (See Notes)

Have you developed written procedures for site inspection and enforcement? X Yes ☐ No

Have all MS4 Inspectors maintained certification under the Tennessee Fundamentals of Erosion Prevention and Sediment Control, Level 1? X Yes ☐ No

Have all MS4 site plan reviewers maintained certification under the Tennessee Fundamentals of Erosion Prevention and Sediment Control, Level 2? X Yes ☐ No

Most of the engineers have taken the Level 2 training, however, a few of the newer engineers who have not taken the training have a Professional Engineer's (P.E) license, which also satisfies the MS4 permit requirement.

B. How many active construction sites disturbing at least one acre were there in your jurisdiction this reporting period?

Refer to attached Table 6B.1. In FY21, there were 308 grading permits issued, while 237 grading permit sites were completed (signed-off). Not all of the Grading Permits were for sites over an acre (requiring a TDEC General Construction Stormwater Permit). All sites that disturb over an acre are required to also obtain a grading permit and must have coverage under the State's General Construction Stormwater Permit prior to receiving a Metro Grading Permit. At the end of FY21, there were 817 active grading permits as Metro requires permits for grading over 10,000 square feet (and certain other criteria per Chapter 3 of Volume 1 of the Metro SWMM).

C. How many of these active sites did you inspect this reporting period?

NPDES Section performed 8,606 construction-related inspections in FY21. The inspections were performed on Grading Permit sites under construction and complaint inspections of construction activity without permits. In addition, MWS Stormwater also provides oversight and guidance to small residential construction activities usually with total disturbed area of less than 10,000 square feet (not requiring a standard Metro grading permit). Refer to the attached Table 6C.1 for small construction project oversight numbers.

D. On average, how many times each, or with what frequency, were these sites inspected (e.g., weekly, monthly, etc.)? Monthly

NPDES inspects all active construction sites at least once per month. Some sites become inactive and have no exposed soils. These sites are inspected on a less frequent basis (until the site reaches final administrative closure).

E. Do you prioritize certain construction sites for more frequent inspections? X Yes ☐ No

If Yes, based on what criteria?

*All **active** permit sites with active grading are prioritized to receive inspections at least once per month. This meets and exceeds the permit requirement to perform monthly inspections of 303(d) listed siltation-impaired streams. Some sites may be awaiting final as-built reviews, but are relatively stable. These sites do not receive the same level of priority inspections.*

7. Illicit Discharge Elimination

A. Have you completed a map of all known outfalls and receiving waters of your storm sewer system? X Yes ☐ No

B. Have you completed a map of all known storm drain pipes of storm sewer system? X Yes ☐ No

C. How many outfalls have you identified in your system?

Metro has migrated several iterations of mapping updates of Stormwater infrastructure into our Metro Geographic Information System (GIS). During previous reporting periods, MWS Stormwater's contractor completed a project to re-delineate the outfall layer (grid by grid) with the focus of verifying "actual" MS4 permitted outfalls. While the focus was mapping MS4-permitted outfalls, NPDES also had the contractor create the following two outfall layers: 1) Sub-MS4 Outfalls – Outfalls within the MS4 system upstream of the discharge point to Waters of the State, but usually where two large systems combine; and 2) Private Outfalls – Point at which Stormwater from private properties drain to either Waters of the State or MS4. Currently there are 11,930 MS4-permitted Outfalls, 397 Sub-MS4 Outfalls, and 2,433 Private Outfalls mapped within Metro's GIS database. Please note that in determining the point at which MS4 outfalls drain to Waters of the State, NPDES had to assume the streams layer in GIS was an accurate representation of actual streams, even though the coverage is more of an estimate and has not been field-verified.

D. How many of these outfalls have been screened for dry weather discharges?

In previous permit years, NPDES received approval from TDEC to implement a new form of field screening, where up to three commercial and industrial properties are screened within ½ mile grids for potential stormwater runoff issues such as exposed grease, waste materials, sediment, etc. Prior to this change, NPDES inspectors were required to look only at infrastructure points for potential illicit discharges, which was very time consuming and produced very few results. Refer to Attachment B for complete coordination on modifications to the field screening program.

During FY21, NPDES screened 175 separate ½ mile grids for potential stormwater runoff issues, which included looking at 377 separate business practices and infrastructure points.

E. How many of these have been screened more than once?

None are required to be screened twice per our new permit, however, if a non-stormwater/"illicit" flow is suspected, NPDES initiates an IDDE investigation that is documented within the Cityworks database until the illicit discharge is eliminated. When NPDES inspectors find site management issues at sites, they initiate education actions with site management and usually return within a few days to determine if corrective actions have taken place.

F. What is your frequency for screening outfalls for illicit discharges?

All 2,047 ¼ mile commercial and industrial-zoned grids were screened by the end of Year 5 of the MS4 permit (January 31, 2017). This requirement is no longer in effect with the approved modification to this program element per the administrative extension agreement. Despite this, NPDES is committed to continuing regular routine dry weather field screening practices, as the newly defined process has yielded very positive results.

G. Do you have an ordinance that effectively prohibits illicit discharges? X Yes ☐ No

H. During this reporting period, how many illicit discharges/illegal connections have you discovered (or been reported to you)?

In FY21, there were 7 confirmed illicit discharges in which NPDES issued a Notice of Violation and associated administrative penalty to the property owner to eliminate the discharge. In addition to the confirmed illicit discharges, NPDES initiated 112 separate water quality investigations during FY21, most of which, originated from citizen complaints. Please note that some of these investigations include random water quality checks of Metro's O&M facilities. Refer to Table 7H.1 for a complete listing of the 112 IDDE investigations initiated during FY21. There were also 14 spill response-specific investigations and 7 sanitary sewer-specific discharge investigations initiated by NPDES during the reporting period (refer to Tables 7H.2 and 7H.3 respectively.) The Metro Health Department also responds to failing septic systems and issues notices and/or citations requiring failing septic systems to be abated. During the reporting period, however, the Health Department suffered a major loss in some of their records, therefore, there is no listing of their records in our annual report. In addition to the above-listed illicit discharge-related investigations, the Metro Codes Department responds to many illegal trash dumping and private sanitary sewer discharge complaints each year that are not represented in these tables. Also, in FY 21, NPDES staff investigated 68 trash/debris in creek complaints from citizens after the March 27-28th, 2021 historic flood.

Of those illicit discharges/illegal connections that have been discovered or reported, how many have been eliminated?

All illicit connections found during the reporting period were rectified swiftly and eliminated.

J. Do you have the authority to recover cost for addressing illicit discharges? X Yes ☐ No

We have appropriate language in our Code, but have never pursued the option.

8. Stormwater Management for Municipal Operations

A. Have Stormwater pollution prevention plans (or an equivalent plan) been developed for Municipal operations:

NPDES developed a comprehensive Stormwater Management Plan (SWMP) in 2012, which was submitted in a previous annual report. The SWMP included site-specific Runoff Management Plans (RMPs) for key municipal Operations and Maintenance (O&M) facilities, which are plans equivalent to SWPPPs. Since the time the original SWMP and associated RMPs were developed, NPDES has developed additional RMPs for newly identified O&M facilities. Below is a list of current Metro operated O&M sites in which a SWPPP or RMP has been developed:

- *Metro Fairgrounds Property*
- *MWS Stormwater Maintenance Facility (County Hospital Road)*
- *Metro Transit Authority (Nestor Street) Bus Maintenance Shop*
- *Metro Nashville Public Schools Bus Maintenance Shop*
- *Shelby Park Golf Course Maintenance Shop*
- *Ted Rhodes Golf Course Maintenance Shop*
- *Two Rivers Golf Course Maintenance Shop*
- *Harpeth Hills Golf Course Maintenance Shop*
- *Percy Warner Golf Course Maintenance Shop*
- *McCabe Golf Course Maintenance Shop*
- *Cedar Hill Park Maintenance Shop*
- *Warner Park Golf Course*
- *Public Works Maintenance Facility (5th Street)*
- *Public Works West Maintenance Facility (Charlotte Avenue)*

In FY21, NPDES continued to perform random audit inspections on some of the RMP facilities.

All municipal parks, ball fields and other recreational facilities X Yes ☐ No

RMPs were developed for O&M facilities such as golf course and park maintenance facilities. RMPs were not developed for every ball field location.

All municipal turf grass/landscape management activities (*See Note Above*) X Yes ☐ No

All municipal vehicle fueling, operation and maintenance activities

As per the MS4 Permit, RMPs were created for Municipal O&M facilities, some of which include fueling stations. Some fueling sites are stand-alone with no other maintenance operations present and RMPs were not necessary (although spill kits are at those locations). X Yes ☐ No

All municipal maintenance yards. All O&M facilities located within the MS4. X Yes ☐ No

All municipal waste handling and disposal areas

SWPPPs were created for the Central Wastewater Treatment Plant and the Dry Creek Wastewater Treatment Plant as they retained a Tennessee Multi-Sector Permit for Industrial Stormwater runoff. In previous permit years, MWS applied for and received non-exposure certification for the Central Wastewater Treatment Plant, due to some changing processes that have occurred over the years. As it currently stands, Dry Creek is the only wastewater treatment plant that is currently required to have TMSP coverage. Metro Nashville does not operate any large waste transfer facilities or transfer stations, as it contracts those services out to private companies. Metro does operate some recycling/waste collection facilities where residents can bring their waste to put in large compactor dumpsters and NPDES has worked with Public Works in the previous years to correct runoff issues. X Yes ☐ No

B. Are Stormwater inspections conducted at these facilities?

Each O&M facility where the RMPs were implemented requires on-site personnel to perform weekly grounds inspections. In FY21, NPDES personnel performed audit inspections of some of the RMP facilities where issues were noted during the major audit inspections performed in the previous year, to ensure each individual site is being maintained as designated in the RMP. NPDES plans to perform detail audit inspections in FY22. X Yes ☐ No

If Yes, at what frequency are inspections conducted? *See above answer*

C. Have standard operating procedures or BMPs been developed for all MS4 field activities? (e.g., road repairs, catch basin cleaning, landscape management, etc.)

SOPs have been developed for most of the major O&M field activities. MWS posted all of the RMPs, individual water quality SOPs, and a general MS4 educational video to an internal Metro intranet web page for each O&M Department to train their own field staff. X Yes ☐ No

D. Do you have a prioritization system for storm sewer system and permanent BMP inspections?

In the first year of this permit cycle, NPDES submitted a BMP Maintenance Verification Plan to TDEC that outlined a multipronged strategy to ensure permanent Stormwater Control Measures (SCMs) are being properly maintained. The strategy varies according to which set of Metro's regulations the SCMs were constructed under. The plan includes some inspections by NPDES personnel as well as requiring owner/operators to perform their own inspections/maintenance annually. Since the original SCM maintenance verification plan was submitted to TDEC, NPDES has re-evaluated this process and has decided to dedicate a greater number of resources to ensuring the proper maintenance of these structures. NPDES found that there was very low participation in the owner self-inspection/reporting requirements for newly installed SCMs. In addition, NPDES X Yes ☐ No

discovered that some of the inspection and maintenance reports that were submitted were not accurate and lacking in content.

During previous permit years, NPDES expanded resources dedicated to SCM inspection and maintenance oversight. In FY21, NPDES maintained a total staff level dedicated to SCM inspection and maintenance oversight of 5 staff members (4 inspectors and 1 administrative support staff). Current organization of the SCM inspection and maintenance program is further explained in Section 1.3.1 of this document.

E. On average, how frequently are catch basins and other inline treatment systems inspected?

Varies depending on numbers of complaints or other maintenance tasks.

F. On average, how frequently are catch basins and other inline treatment systems cleaned out/maintained?

Frequency of cleanings depends on conditions. The Stormwater Maintenance Section has developed a rain route list of common stormwater infrastructure sites that clog with debris, leaves, gravel, and sediment on a frequent basis. Maintenance crews visit and clean out these sites and perform maintenance prior to many large rain events. Depicted within Table 8F.1 is a summary of some of the major routine maintenance activities performed on MS4 Stormwater infrastructure during FY21. It is estimated that approximately 205,785.9 cubic yards of material was removed from the MS4 ditches and culverts, approximately 396,963 pounds of material was removed from 41,107 inlets, and approximately 261,619 square feet of erosion control matting was deployed during the FY21 reporting period. In addition to performing routine maintenance and cleaning of stormwater infrastructure, the Stormwater Maintenance Section also operates a preventative maintenance program by aggressively sweeping public "curb and gutter" streets. MWS Stormwater prioritizes certain streets for sweeping activities based on the accumulation of material on the street. Refer to Table 8F.2 for street sweeping collection numbers in FY21.

In addition to the routine maintenance activities such as inlet and pipe cleaning, MWS Stormwater also performs various large projects to correct neighborhood flooding issues. In previous reporting periods, NPDES coordinated with the MWS Stormwater Remedial Maintenance group to complete a water quality evaluation form for each large flood control project. As a result, engineers are being asked to consider use of green infrastructure or other low impact design techniques. Based on the water quality evaluation sheets submitted, NPDES was able to estimate that the large flood control projects designed during FY21 would provide the following benefits to water quality.

- *Redefining and stabilization of approximately 2,528 cubic yards of open storm channel,*
- *Stabilization of approximately 103 linear feet of stream banks; and*
- *Application of approximately 1,275 linear feet of erosion control matting.*

G. Have all applicable municipal employees received training, as identified in each of the following permit sections:

Illicit discharge detection and elimination X Yes ☐ No

If *Yes*, identify the number of municipal employees trained

Throughout the majority of FY21, the Permit Group section within NPDES had 7 people that were primarily dedicated to investigating and enforcing on illicit discharge issues. Training includes internal training from senior staff and the National Stormwater Center Certified Stormwater Inspector training program. In addition to the primary on-call personnel, there were additionally 13 staff members within the NPDES office that could respond to complaints of illicit discharges. Note: NPDES has also worked with various O&M sections to properly identify and report illicit discharges. Also, please note that staff levels can fluctuate each year due to turnover.

Construction site stormwater runoff control X Yes ☐ No

If *Yes*, identify the number of municipal employees trained:

At the time this report was completed, there were 18 NPDES staff members that had adequate training (TDEC Level 1 EPSC Workshop) to respond to and inspect Stormwater runoff from construction activities. Eight of the employees are dedicated fulltime to inspecting development sites under construction. Note that staff levels can fluctuate each year based on staff turnover.

Permanent stormwater management in new development and redevelopment X Yes ☐ No

If *Yes*, identify the number of municipal employees trained

During FY21, there was an average of 8 engineers employed within the MWS Development Services Section that perform some form of review and approval of the design of permanent stormwater management controls for grading permits. The current internal policy for the MWS Development Services is to require all review engineers to take the TDEC Level II Design Principles for Erosion Prevention and Sediment Control for Construction Sites at least once. In addition to the TDEC Level II training, all inspectors within the NPDES Section that perform inspections on SCMs go through the Stormwater Control Measures Inspection and Maintenance training and certification program.

Pollution prevention/good housekeeping for municipal operations X Yes ☐ No

If *Yes*, identify the number of municipal employees trained:

In the previous permit year of FY20, NPDES coordinated with all Metro Departments to remind them of stormwater issues that may occur from normal maintenance activities. NPDES hosted a virtual training workshop with all major Metro Departments in which 39 separate staff/managers attended. Also, during FY21, NPDES audited some of the O&M sites with Runoff Management Plans for municipal maintenance facilities. This process involved coordination with on-site personnel at the facility. In FY21, NPDES continued the new process of inspecting all Metro-owned SCMs for maintenance compliance. Each department was sent a report on maintenance conditions of their department's SCMs.

9. Permanent Stormwater Controls

A. Do you have an ordinance or other mechanism to require:

Site plan reviews of all new and re-development projects? X Yes ☐ No

Maintenance of Stormwater management controls? X Yes ☐ No

Retrofitting of existing BMPs with green infrastructure BMPs? X Yes ☐ No

MWS Stormwater compiled a new volume to the Stormwater Management Manual (SWMM). Volume 5 (also referred to as the LID Manual) provides specifications for development or redevelopment sites to follow in installing "green" stormwater control measures. The requirements with this manual became mandatory in February 2016 for new development or significant redevelopment (after being a voluntary standard since 2012).

B What is the threshold for new/redevelopment Stormwater plan review? (e.g., all projects, projects disturbing greater than one acre, etc.)

Metro actually has more stringent requirements for development than TDEC's Construction General Permit. All development of redevelopment sites grading more than 10,000 square feet must obtain a Metro grading permit. In order to obtain a grading permit, engineered plans must be submitted to the Stormwater Development Review Section for review and approval per Metro's stormwater regulations. All developments increasing the impervious footprint are required to install permanent stormwater treatment measures for water quality and quantity per Metro SWMM criteria.

C. Have you implemented and enforced performance standards for permanent Stormwater controls? X Yes ☐ No

D. Do these performance standards go beyond the requirements found in paragraph and require that pre-development hydrology be met for:

Flow volumes (New LID Manual deals with reductions in site runoff volumes)	X Yes ☐ No
Peak discharge rates	X Yes ☐ No
Discharge frequency	☐ Yes X No
Flow duration	☐ Yes X No

E. Please provide the URL/reference where all permanent Stormwater management standards can be found.

https://www.nashville.gov/Water-Services/Developers/Stormwater-Review/Stormwater-Management-Manual.aspx

F. How many development and redevelopment project plans were reviewed for this reporting period?

According to queries of Metro permit tracking database Cityworks, there were 1,340 plans submitted to the MWS Development Review Section during FY21. This number includes initial grading permit plans, re-submitted plans, as-built final submittals, etc. Refer to attached Table 9F.1 for the total number of plans reviewed by Stormwater Development Review staff in FY21.

G. How many development and redevelopment project plans were approved?

According to queries of Metro permit tracking database Cityworks, there were 1,286 plans approved during FY21. This number includes initial grading permit submittals, final as-built signoffs, etc. Refer to Table 9F.1 for a complete listing. A better reflection of actual new development projects approved for construction would be the number of grading permits issued. In FY21, there were 309 grading permits issued.

H. How many permanent Stormwater management practices/facilities were inspected?

There were an estimated 4,239 inspections of individual SCM structures by NPDES staff during FY21. This is an estimate based on the number of properties inspected as we track our inspections within the database based on site grading permit. This number of inspections also includes re-inspections of grading permit properties to verify that the necessary maintenance was performed after initial coordination with the site.. Most properties have multiple SCMs, therefore, when a property is inspected or re-inspected, several SCM structures often get inspected. Inspecting the 4,239 individual SCM structures involved inspecting 1,449 individual grading permit project properties during FY21.

How many were found to have inadequate maintenance?

Of the 1,449 grading permit sites visited by NPDES in FY21, inspectors issued 520 notices to properties that were found to have issues requiring moderate to major maintenance needs. These notices include verbal notices in person or over the phone, formal letters, and/or emails.

J. Of those, how many were notified and remedied within 30 days? (If window is different than 30 days, please specify)

While NPDES has numerous informal conversations with SCM owners about the maintenance status of their SCM(s), performing the necessary maintenance on SCM takes time and not all of the SCMs in need of maintenance were remedied within 30 days. A rough estimate would be around 50% of them were maintained within 30 days of the notice. NPDES performs follow-up compliance inspections when no response is received after an average of 60 days of the notices sent. There are many nuances involved in identifying responsible parties associated with residential "open space" SCMs. Some of these residential-owned structures can take months if not years to bring into compliance.

K. How many enforcement actions were taken that address inadequate maintenance?

In FY21, 4 NONs were issued to property owners for SCM maintenance issues, mostly involving sites that have made unauthorized authorizations to the structures (i.e. modification of a small bioretention basin into a level, turfed back yard area).

L. Do you use an electronic tool (e.g., GIS, database, spreadsheet) to track post-construction BMPs, inspections and maintenance?

NPDES uses the Cityworks permitting database to track inspections, follow-up notifications, etc. The Cityworks database is a city-wide database that is used by all Metro departments to track permits ranging from plumbing permits to grading permits. The database tracks compliance by the property/parcel that the permit is tied to. MWS Stormwater NPDES also tracks each SCM structure within a GIS database, which is used to coordinate and plan inspections. All documentation notes involving inspection and maintenance records are recorded within the Cityworks database and is associated with the site's original grading permit. X Yes ☐ No

M. Do all municipal departments and/or staff (as relevant) have access to this tracking system? *All departments and general public can access the locations of SCMs on the parcel viewer program on Nashville's Planning Department website.* X Yes ☐ No

N. Has the MS4 developed a program to allow for incentive standards for redeveloped sites? X Yes ☐ No

O. How many maintenance agreements has the MS4 approved during the reporting period?

Approximately 308, which is an assumed number based on the number of grading permits issued during FY21.

10. Industrial and High Risk Runoff

A. Has the MS4 developed and implemented a program to monitor and control pollutants in runoff from the following types of industrial and high risk facilities and activities:

Municipal landfills *All municipally operated landfills in Metro were closed years ago. The Metro Water Services, Waste Services Division oversees all closed landfills' associated groundwater monitoring*. X Yes ☐ No

Hazardous waste treatment, storage, and disposal facilities X Yes ☐ No

Industries subject to reporting requirements pursuant to SARA Title III section 313 X Yes ☐ No

Industrial facilities that the MS4 determines are contributing a substantial loading of pollutants to the municipal separate storm sewer system X Yes ☐ No

B. Has the MS4 maintained a database of industrial and high risk facilities and activities in the City which includes the following types of industries:

- municipal landfills;
- hazardous waste treatment, storage, and disposal facilities;
- industries subject to reporting requirements pursuant to SARA Title III, Section 313; and
- industrial and commercial facilities that the permittee determines are contributing a substantial loading of pollutants to the municipal separate storm sewer system.

During the first permit year of this permit cycle, NPDES built a robust industrial inspection database that comprises the above categories of industrial properties. In addition to the above category of industrial sites (Metro is required to inspect), NPDES has also included within the database all of the industrial facilities with active Tennessee Multi-Sector Permits (TMSPs) for industrial Stormwater runoff, all facilities with active Ready Mix Concrete Permits (RMCPs), and all facilities with active individual NPDES permits to discharge process water. The database is a Microsoft Access database that is interactive with GIS. Please note that most TMSP or RMCP sites do not qualify as industrial facilities subject to SARA Title III, Section 313 reporting requirements and are not required to be inspected by Metro per the current MS4 permit.

Those listed in 10 (A) above — X Yes ☐ No

Facilities covered by individual NPDES permits — X Yes ☐ No

Facilities covered under the TMSP — X Yes ☐ No

Facilities regulated by the pretreatment program;
NPDES has a Microsoft Excel spreadsheet list of Pre-treatment Program sites for reference purposes, but the sites are not entered into the Industrial Monitoring Microsoft Access database. The Pre-treatment Program notifies NPDES when they become aware of stormwater issues on these sites. — X Yes ☐ No

C. Has the MS4 updated the database of industrial and high risk facilities and activities at least yearly? — X Yes ☐ No
If yes, provide a listing of any additionally identified industrial and high-risk facilities and activities which discharge stormwater into the MS4:

Facility/Activity

Refer to the attached Table 10.C.1 for a listing of all the industrial facilities NPDES has inventoried into the database. As mentioned above, Metro also inventoried other industrial facilities such as TMSP and RMCP facilities, which are not required to be inspected within the three-year period. NPDES routinely adds facilities to the database based on reviews of the TDEC permitting database.

D. Has the MS4 developed and implemented procedures, including an inspector manual and checklist, for routine inspections of industrial and high-risk facilities and activities*?*
NPDES has created a Standard Operating Procedure (SOP) for performing inspections of industrial facilities. NPDES has also performed numerous co-inspections with TDEC Nashville Field Office staff to ensure the industrial inspection process reviews site controls and paperwork similarly to TDEC inspection staff. — X Yes ☐ No

E. Is the MS4 performing these inspections at such a rate that all required industries will be inspected at least once every three years?
As per the MS4 permit, NPDES is required to inspect all SARA Title III, Section 313 industrial facilities once every 3 years. NPDES completed all of the inspections of facilities designated as having the SARA Title III, Section 313 and Treatment, Storage and Disposal (TSD) facilities by the end of the permit term (January 31, 2017). Following completion of these inspections, NPDES sent a letter to TDEC that addressed the planned modifications to inspections of industrial facilities during the transition/"administrative extension" period before the new permit is reissued. A copy of this letter can be found in Attachment B of this document. The new inspection focus during the transition/"administrative extension" period between permits will be based on the types of industrial facilities that typically have the most exposed materials that can pose a risk to stormwater runoff. TDEC approved the new approach and in FY21, NPDES vastly increased the number of inspections on facilities that typically have more pollutant exposure issues. — X Yes ☐ No

F. Provide a listing of inspections performed during this reporting year:
During FY21 NPDES performed 49 formal industrial inspections, some of which include re-inspections. . Refer to Table 10.F.1 for a list of Industrial Facilities that were inspected during FY21.

11. Enforcement

A. Identify which of the following types of enforcement actions you used during the reporting period, indicate the number of actions, the minimum measure (e.g., construction, illicit discharge, permanent stormwater control) or note those for which you do not have authority: *Please note that Stop Work Orders are included as part of the same Notice of Violation for construction sites. The enforcement data below are for grading permit sites involving the grading of more than 10.000 square feet. MWS Development Services also issues enforcements for Single Family Residential (SFR) developments. In FY21, MWS Development Services issued 16 NOVs that included an assessment of $5,500 in administrative penalties.*

Action	Construction	Permanent Stormwater Controls	Illicit Discharge	Authority?
Notice of violation	42	0	7	X Yes ☐ No
Administrative Penalties	$28,014	$0	$4,250	X Yes ☐ No
Stop Work Orders	27	#	#	X Yes ☐ No
Civil penalties	#	#	#	☐ Yes X No
Criminal actions	#	#	#	☐ Yes X No
Administrative orders	#	#	#	X Yes ☐ No
Other:		4 Notices of Non Compliance	7 Notices off Non Compliance	X Yes ☐ No

B. Do you use an electronic tool (e.g., GIS, data base, spreadsheet) to track the locations, inspection results, and enforcement actions in your jurisdiction? X Yes ☐ No

C. What are the 3 most common types of violations documented during this reporting period?

Failure to maintain erosion prevention and sediment control measures, illicit discharges from construction and non-construction sites, and grading without applying for or receiving a Metro Grading Permit.

12. Program Resources

A. What was your annual expenditure to implement the requirements of your MS4 NPDES permit and SWMP this past fiscal year?

In FY21, NPDES, which oversees various MS4 compliance activities, operated under a budget of $3,272,600 (with an additional $250,000 devoted to Watershed Improvement Project work). The overall MWS Stormwater Division's budget, which includes NPDES, Development Services Review engineers, Stormwater Planning and Stormwater Maintenance, was $27,696,200. Please note that various other Metro Departments, while not included in this budget analysis, perform activities that contribute to MS4 permit compliance.

B. What is next fiscal year budget for implementing the requirements of your MS4 NPDES permit and SWMP?

The FY22 budget includes $4,207,700 dedicated to the Stormwater NPDES Section, while the overall Stormwater Department is operating under a budget of $28,688,800.

C. Do you have an independent financing mechanism for your Stormwater program? X Yes ☐ No

D. If so, what is it/are they (e.g., Stormwater fees), and what is the annual revenue derived from this mechanism?

Source: Stormwater User Fee; Estimated Amount $36,236,000 (budget)

E. How many full-time employees does your municipality devote to the Stormwater program (specifically for implementing the Stormwater program vs. municipal employees with other primary responsibilities that dovetail with Stormwater issues)?

The anticipated FY20 budgeted Stormwater staff includes 121 employees (including 14 current vacancies).

F. Do you share program implementation responsibilities with any other entities? ☐ Yes X No

Entity	Activity/Task/Responsibility	Your Oversight/Accountability Mechanism

13. Evaluating/Measuring Progress

A. What indicators do you use to evaluate the overall effectiveness of your Stormwater Management Program, how long have you been tracking them, and at what frequency? Note that these are not measurable goals for individual BMPs or tasks, but large-scale or long-term metrics for the overall program, such as in-stream macroinvertebrate community indices, measures of effective impervious cover in the watershed, indicators of in-stream hydrologic stability, etc.?

For over 12 years, the NPDES Watershed Group has been performing detailed sampling for TMDL streams throughout Metro, some of which is proactive and not required per the MS4 permit. The data collection has proven beneficial in identifying segments of streams where pollutants are elevated or within water quality standard criteria. Please refer to the attached Table 13A.1 (TMDL Sampling Data) for the complete quarterly sampling results for the FY21 reporting period. Please note that previous Annual Reports contained additional data for monitoring conducted during those reporting periods. NPDES performs various monitoring activities as prescribed by the MS4 Permit. The MS4 permit-required sampling (i.e. Wet Weather Monitoring, Ambient Sampling, and Benthic Sampling) was changed in the current iteration of the permit (See Attachment B). The NPDES Watershed Group routinely analyzes the sampling data to determine if negative trends are observed within any of the sampled tributaries. When negative trends are found, NPDES performs source tracking investigations. Whenever identifiable sources are not found, NPDES considers initiating targeted public education campaigns in those watersheds to address other potential impacts, such as pet waste or overfertilization. The MS4 Permit-prescribed Ambient Sampling and Benthic Sampling data is summarized in Table 13A.3 and Table 13A.4 respectively. NPDES's Watershed Group collected approximately 225 water quality samples and performed visual stream assessments on approximately 113,171 linear feet of 303(d)-listed streams within FY21.

Over the years, NPDES has also looked at other non-analytical data to evaluate the program's effectiveness. Refer to Table 13A.2 (SWMP Quantifiable Statistics). Many of the functions such as IDDE efforts, public education, etc. that NPDES performs do not easily translate into quantifiable loading reduction numbers. As an attempt to quantify pollutant loading reduction numbers from various sources, NPDES hired a contractor in previous years to develop a database that will track loading reductions of structural and non-structural controls implemented as part of Metro's SWMP. This database is known as the Watershed Improvement Evaluation System (WIES) and is cloud/web-based, which will allow NPDES to track pollutant reduction efforts of current SWMP elements as well as potential benefits through program modifications. While the WIES database is still in the final development stage, the database was operational in FY21. Specific tables and graphs of FY21 estimated pollutant loading runoff numbers and pollutant loading reduction efforts by SWMP structural and non-structural controls are presented in Attachment C.

In addition to pursuing development of a database that can actively track and analyze pollution reduction efforts of the SWMP, NPDES also conducted an internal review of the SCM Inspection and Maintenance Oversight Program once the 1st cycle of county-wide inspections was completed. NPDES put together a list of many of the lessons learned in the first cycle and has already started changing some processes to make the next cycle of inspections and coordination with property owners to be more effective and efficient.

B. Provide a summary of data (e.g., water quality information, performance data, modeling) collected in order to evaluate the performance of permanent Stormwater controls installed throughout the system. This evaluation may include a comparison of current and past permanent Stormwater control practices.

Please refer to the answer above and Section 3 of this document for a summary of various water quality data collected by NPDES during this reporting period. As mentioned above, a more comprehensive evaluation of pollutant reduction estimates of major SWMP program elements is included in Attachment C.

C. What environmental quality trends have you documented over the duration of your Stormwater program? (If you have reports or summaries, you can either attach them electronically, or provide the URL to where they may be found on the Web.) *As mentioned above, while reported potential illicit discharges, have increased, NPDES has actually found fewer illicit discharges to the MS4 over the years. This reduction in actual confirmed illicit discharges to the MS4 can be contributed to a robust IDDE program and increased public awareness. In addition, there have been fewer notices of violations issued for construction site infractions. Middle Tennessee contractors have become acutely aware of Metro's construction site requirements and enforcement program and, therefore, have increasingly complied with our regulations. It has also been noted that many of the concerns from citizens usually involve relatively minor issues as compared to concerns reported in the beginning of the NPDES program many years ago.*

14. Stormwater Management Program Update

A. Describe any changes to the MS4 program, per Section 3.5 of the permit, during the reporting period including but not limited to:

Changes adding (but not subtracting or replacing) components, controls, or other requirements.

At the end of year 5 of the current MS4 permit, NPDES submitted a request to change the dry weather field screening, industrial monitoring, and wet weather sampling elements for the transition/"administrative extension" period between permit expiration and reissuance. (Refer to Attachment B) NPDES also requested these items to be adjusted in the reissued permit as well. NPDES analyzed work hours per each task verses the benefit to the program in hopes of developing the most efficient and effective program possible. A summary of the proposed changes can be found in Attachment B. NPDES made some adjustments to the IDDE enforcement policies and IDDE SWMP narrative from recommendations of the TDEC CEI conducted in the previous permit year. Those amendments to the SWMP are included in Attachment B of this document. Overall, NPDES has been pleased with the increased efficiency and effectiveness of the adjusted SWMP programs.

Changes to replace an ineffective or unfeasible BMP.

Refer to above answer

Information (e.g., additional acreage, outfalls, BMPs) on program area expansion based on annexation or newly urbanized areas.

Just prior to the issuance of this cycle of the MS4 permit, the former satellite city of Lakewood voted to dissolve and become part of Metro Nashville and Davidson County. Upon that transition becoming official, NPDES field screened the commercial areas for potential illicit discharge connections, inventoried and added all of the Stormwater infrastructure into the GIS database, and began performing stormwater maintenance services for the newly annexed area.

Changes to the program as required by the division.

Please refer to the explained SWMP narrative changes and enforcement policy changes that resulted from the TDEC CEI.

15. Certification

This report must be signed by a ranking elected official or by a duly authorized representative of that person. See signatory requirements in subpart 5.7 of the permit.

"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 the 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."

Michael Hunt	Michael Hunt	12/13/21
Printed Name and Title	Signature	Date

Utility Services Manager

3.0 Required MS4 Reporting Tables

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Table 6B.1 – Grading Permit Projects Initiated/Completed within FY21

Year	Preconstruction Meetings	Grading Permits Issued	Permits Completed
Total FY03	257	198	102
Total FY04	305	270	159
Total FY05	284	271	220
Total FY06	296	252	196
Total FY07	251	239	188
Total FY08	222	165	205
Total FY09	148	109	238
Total FY10	146	121	117
Total FY11	130	135	131
Total FY12	152	142	153
Total FY13	167	138	133
Total FY14	249	318	159
Total FY15	292	276	259
Total FY16	268	254	217
Total FY17	297	262	203
Total FY18	331	311	264
Total FY19	345	327	250
Total FY20	312	283	285
Total FY21	351	308	237
Total	**4,452**	**4,071**	**3,479**

Table 6C.1 – Small Construction Site Oversight in FY21

New Infill Permits Issued	1,292
Follow up site visits for Infill Developments	3,676
NOVs Issued to Single Family Residential Development	16

Note: Midway through FY15, Metro passed new legislation establishing the new Infill Development Permits. Projects that create 800 to 15,000 square feet of additional net impervious area though new development, redevelopment, or rehabilitation of a residential structure in existing neighborhoods are required to obtain Infill Development Permits. As such, MWS Stormwater staff provides oversight to require stormwater controls to be installed to treat stormwater runoff during and after construction, which is above and beyond MS4 permit requirements.

Table 7H.1 – Illicit Discharge (Non-Construction-Related) Investigations Initiated during FY21

Case Name	Location	Date Initiated	Initiated By
4513 Granny White Pk – Paint Runoff	4513 Granny White Pike 37204	5/7/2021 9:51	Allison Davis
7114 Highway 70s – Acid Spill	7114 Highway 70 S #109 37221	4/26/2021 13:32	Allison Davis
Acer Landscaping Dumping Material	1650 54th Ave N 37209	2/10/2021 14:00	Kevin Turner
Apartment Fire Discharge	100 Brentwood Oaks Dr 37211	6/2/2021 12:16	Kevin Turner
Apartment Sewer Overflow	3940 Apache Trl 37013	5/13/2021 13:12	Kevin Turner
Arby's Cleanout Overflow	2044 Rosa L Parks Blvd 37228	3/23/2021 13:04	Kevin Turner
Auto Central – Oil Discharge	12761 Old Hickory Blvd 37013	12/22/2020 7:54	Allison Davis
Auto Dealer Exposed Materials	1656 Antioch Pike 37013	5/12/2021 9:43	Kevin Turner
Builders Supply Paint Overflow	227 Nesbitt Ln 37115	10/28/2020 9:11	Kevin Turner
Car Oil Dumping	2185 Forge Ridge Cir 37217	11/13/2020 14:35	Kevin Turner
Car Was & Food Truck	3501 Murfreesboro Pike 37013	3/5/2021 15:04	Kevin Turner
Car Wash in Parking Lot	1310 Antioch Pike 37211	7/7/2020 9:08	Kevin Turner
Cedar Hill Park – Metro Audit	860 Old Hickory Blvd 37207	12/3/2020 15:52	Kevin Turner
Dam Hydraulic Fluid Release	0 Swinging Bridge Rd 37138	3/25/2021 14:24	Kevin Turner
Debris in Storm Easement	109 B Harrow Ct 37221	10/8/2020 12:46	Kevin Turner
Debris Left from Tree Work	711 Hill Rd 37027	6/23/2021 10:06	Kevin Turner
Diesel Pill 15-20 Gal	2 Victory Ave 37213	10/6/2020 14:42	Kevin Turner
Donelson Wrecker Trash/Oil	3551 Central Pike 37076	7/23/2020 14:05	Kevin Turner
Drilling Discharge in Spring	234 Leonard Ave 37205	4/30/2021 10:31	Kevin Turner
Dumping in Storm Ditch	2919 Harlin Dr 37211	3/18/2021 13:53	Kevin Turner
Dumping in Storm Drain	427 Lafayette St 37203	3/31/2021 14:17	Kevin Turner
Dumping in Storm Drain	427 Lafayette St 37203	5/18/2021 7:53	Kevin Turner
Dumping Vent Hood Wash Water	143 Gallatin Pike N 37115	7/17/2020 8:27	Robert Topolski
Dumpster Bins Possibly Leaking	5027 Ashland City Hwy 37218	2/3/2021 12:29	Kevin Turner
El Alteno Drainage	2580 Murfreesboro Pike 37217	3/5/2021 14:27	Kevin Turner

Table 7H.1 – Illicit Discharge Investigations Initiated during FY21 (Continued)

Case Name	Location	Date Initiated	Initiated By
Ewing Strip Mall – Creek Dumping	123 Ewing Dr #1 37207	4/20/2021 10:53	Allison Davis
Fairgrounds – Metro Audit	625 Smith Ave 37203	12/9/2020 11:40	Kevin Turner
Fish Kill (Pond)	1266 Stones River Rd 37076	3/12/2021 13:19	Kevin Turner
Foam in Creek	333 Gallatin Pike N 37115	9/16/2020 14:36	Kevin Turner
Fuel Spill in Storm Ditch	5693 Eatons Creek Rd 37080	6/24/2021 11:59	Kevin Turner
GFL Trash Trucks Oil	477 Saddle Dr 37221	3/12/2021 12:44	Kevin Turner
Grande View Apartments Sewer Discharge	6900 Sonya Dr 37209	7/27/2020 10:36	Kevin Turner
Granite and Stone Design Discharge	201 Lyle Ln 37210	7/21/2020 15:09	Kevin Turner
Granite Empire Discharge	407 Driftwood St 37210	10/28/2020 9:07	Kevin Turner
Grass Clippings in Stream	433 Clearwater Dr 37217	9/4/2020 9:40	Kevin Turner
Grass/Leaves in Storm Drains	100 Jackson Downs Blvd 37214	3/25/2021 11:17	Kevin Turner
Grease Dumping	7500 Tarmac Way 37211	9/4/2020 9:56	Kevin Turner
Grease Trap Overflowing	2580 Murfreesboro Pike 37217	9/28/2020 8:38	Robert Topolski
Green Meadows – Pool Discharge	7212 Green Meadows Ln 37221	5/17/2021 9:07	Allison Davis
Herbicide on Stream Bank	4210 Harding Pike 37205	8/21/2020 14:46	Kevin Turner
Isocyanate Container Mill Creek	3201 Old Ezell Rd 37211	9/16/2020 14:48	Kevin Turner
KFC Exposed Grease	5321 Hickory Hollow Ln 37013	3/12/2021 13:06	Kevin Turner
Landscaping Debris in Creek	4111 Little Marrowbone Rd 37080	4/30/2021 10:40	Kevin Turner
Loves Diesel Spill	130 W Trinity Ln 37207	10/21/2020 7:34	Kevin Turner
MNPD Impound Lot – Metro Audit	1201 Freightliner Dr 37210	12/9/2020 11:44	Kevin Turner
MNPS School Bus Terminal – Metro Audit	501 Interstate Blvd S 37210	12/9/2020 12:24	Kevin Turner
Mobile Shower Gray Water Dumping	701 Gallatin Pike 37115	2/2/2021 14:17	Kevin Turner
Moeller Material in Catch Basin	3048 Owen Dr 37013	1/22/2021 9:22	Kevin Turner
Mope Water Dumping	4000 Gallatin Pike 37216	1/22/2021 9:41	Kevin Turner
Motor Oil Leakage on Street	1305 Forrest Oaks Ct N 37221	8/14/2020 9:05	Allison Davis

Table 7H.1 – Illicit Discharge Investigations Initiated during FY21 (Continued)

Case Name	Location	Date Initiated	Initiated By
MTA Myatt – Metro Audit	430 Myatt Dr 37115	12/3/2020 15:59	Kevin Turner
MTA Nestor – Metro Audit	130 Nestor St 37210	12/3/2020 15:56	Kevin Turner
MTA County Hospital – Metro Audit	1607 County Hospital Rd 37218	12/10/2020 8:23	Kevin Turner
Nashboro Gc Fish Kill	171 Bell Rd 37217	7/23/2020 15:20	Kevin Turner
NT glass Discharge	1860 Air Lane Dr 37210	8/5/2020 13:22	Kevin Turner
Oil Dumping in Storm Drain	5468 Oak Chase Dr 37013	4/14/2021 14:35	Kevin Turner
Oil From Auto Shop	2408 Dickerson Pike 37207	4/14/2021 16:16	Kevin Turner
Oil Spilled in Parking Area	401 Space Park South Dr 37211	4/14/2021 17:16	Kevin Turner
Oily Water Coming from Business	3000 Nolensville Pike 37211	3/12/2021 12:49	Kevin Turner
O-Ku Sushi Dumpster	81 Van Buren St 37208	12/21/2020 16:11	Kevin Turner
Overflowing Grinder Pump	2733 Mccampbell Ave 37214	9/23/2020 11:51	Kevin Turner
Paint Discharge	307 B Seven Springs Way 37027	6/7/2021 12:57	Kevin Turner
Paint Sf Const	4617 Chalmers Dr 37215	10/19/2020 13:31	Kevin Turner
Plasticycle – Plastic Discharging	5801 Centennial Blvd 37209	8/5/2020 10:12	Allison Davis
Pool Discharge into Ms4	4401 Andrew Jackson Pkwy 37076	8/4/2020 11:14	Kevin Turner
Pop Up Auto Shop	3924 Alameda St 37209	12/2/2020 12:42	Kevin Turner
Popup Auto Shop	3924 Alameda St 37209	12/2/2020 12:54	Kevin Turner
Possible Discharge from ATX Use	526 Myatt Dr 37115	3/17/2021 14:43	Kevin Turner
Possible Gasoline Spill	512 Wagon Ct 37221	2/23/2021 10:54	Kevin Turner
Possible Oil Dumping in Street	812 Sandburg Pl 37214	3/4/2021 9:46	Kevin Turner
Possible Sewage in Creek	4890 Lickton Pike 37189	8/3/2020 14:04	Kevin Turner
Possible Sewage Leak	0 Visco Dr 37210	3/18/2021 14:34	Kevin Turner
Possible Sewer Discharge	4041 Hillsboro Cir 37215	6/2/2021 10:07	Kevin Turner
Possible Sewer Discharge into Creek	3405 Belmont Blvd 37215	6/24/2021 7:36	Kevin Turner

Table 7H.1 – Illicit Discharge Investigations Initiated during FY21 (Continued)

Case Name	Location	Date Initiated	Initiated By
Possible Sewer Overflow	5636 Old Hickory Blvd 37076	3/25/2021 12:01	Kevin Turner
Possible Sewer Overflow	2407 Eden St 37208	5/13/2021 10:39	Kevin Turner
Possible Sewer/Storm Cross Connection	1712 Rosewood Ave 37212	3/12/2021 13:34	Kevin Turner
Private Overflow	8324 Luree Ln 37076	10/19/2020 14:29	Kevin Turner
Pw 5th St – Metro Audit	750 S 5th St 37206	12/9/2020 12:14	Kevin Turner
Pw Smith Springs Salt – Metro Audit	2068 Smith Springs Rd 37217	12/9/2020 12:29	Kevin Turner
Sealant Spill Lowes	5520 Nolensville Pike 37211	10/19/2020 14:23	Kevin Turner
Sep/Cumberland River Compact		12/14/2020 13:54	Elizabeth Stienstraw
Septic Overflow	4041 Twin Oaks Ln 37013	9/4/2020 9:51	Kevin Turner
Sewage Discharging to Mill Creek	1629 Elm Hill Pike 37210	4/14/2021 7:50	Robert Topolski
Sewage Hit During Construction	210 Gallatin Pike 37115	10/6/2020 14:49	Kevin Turner
Sewage Odor Construction Site	1600 State St 37203	3/19/2021 14:40	Kevin Turner
Sewage on Ground	104 Forge Ridge Ct 37217	12/2/2020 12:40	Kevin Turner
Sewage Smell in Creek	1542 Pleasant Hill Rd 37214	6/11/2021 8:16	Kevin Turner
Sewer Overflow	5003 Linbar Dr 37211	4/27/2021 12:44	Kevin Turner
Sheen Coming from Opry Mills Outfall	577 Opry Mills Dr 37214	7/2/2020 9:34	Kevin Turner
Sheen on Cumberland	525 Basswood Ave 37209	9/4/2020 9:26	Kevin Turner
Sheen on Cumberland	5 Main St 37213	12/21/2020 16:02	Kevin Turner
Sheen on Cumberland	100 1st Ave S 37201	1/7/2021 9:51	Kevin Turner
Sheen on Cumberland	5 Main St 37213	1/22/2021 9:12	Kevin Turner
SORP 161-15-002	0 Windypine Dr 37211	12/31/2020 11:23	Kevin Turner
Spill in Browns Creek	4015 Lealand Ln 37204	5/13/2021 11:30	Kevin Turner
Spill on Road	763 Saussy Pl 37205	9/4/2020 9:29	Kevin Turner
Spilled Paint in Alley	2702 Brightwood Ave 37212	4/14/2021 15:40	Kevin Turner
Spring Causing Flooding	1303 Woodland St 37206	12/31/2020 11:26	Kevin Turner
Taqueria El Alteno Cont.	2580 Murfreesboro Pike 37217	10/26/2020 15:25	Kevin Turner

Table 7H.1 – Illicit Discharge Investigations Initiated during FY21 (Continued)

Case Name	Location	Date Initiated	Initiated By
Till Five Pizza Grease	701 Union St 37219	12/21/2020 14:59	Kevin Turner
Trash in Storm Drain	4160 Polk Forest Cir 37207	7/2/2020 8:23	Kevin Turner
Water Leaking in Alley	1513 Elmwood Ave 37212	8/21/2020 14:47	Kevin Turner
Water Quality Complaint	1236 Cliftee Dr 37027	3/3/2021 7:04	Mary Bruce
Water Quality Complaint	4015 Lealand Ln 37204	3/9/2021 11:34	Matthew Lockhart
Water Quality Complaint	4025 Lealand Ln 37204	3/10/2021 9:49	Matthew Lockhart
Water Seep	0 Cochran Dr 37220	12/21/2020 16:30	Kevin Turner
Wellmoor Residence – Oil Runoff	1013 Wellmoor Ct 37209	5/17/2021 8:37	Allison Davis
Wet Saw Discharge	520 Swiss Ave 37211	12/31/2020 11:18	Kevin Turner
White Discharge From Spring	1114 Brookmeade Dr 37204	6/2/2021 7:34	Kevin Turner
White Discharge Servier Park	3021 Lealand Ln 37204	5/17/2021 10:21	Kevin Turner
Wing Stop Wash Water	331 Gallatin Pike N 37115	11/17/2020 9:56	Kevin Turner

Note: Some of these investigations were proactive water quality investigations of Metro's O&M facilities.

Table 7H.2 – Spill Response Investigations Initiated by NPDES during FY21

Case Name	Location	Initiated Date	Initiated By
Fuel Spill On Murfreesboro Pike	2500 Murfreesboro Pike 37217	6/24/2021 7:37	Kevin Turner
Stratas Foods - Soybean Oil Spill	189 Spence Ln 37210	6/21/2021 7:13	Allison Davis
Gas Spill	700 Main St 37206	5/10/2021 7:25	Dale Binder
Muddy Water In Creek	4848 Redcastle Ridge 37211	4/19/2021 10:55	Dale Binder
I24 EB EXIT 60 Fuel Spill	0 UNKNOWN 00000	4/8/2021 17:06	Dale Binder
Vehicle In Waterway	107 Moss Trail 37072	1/22/2021 9:34	Kevin Turner
Drum Spill	3240 Franklin Limestone Rd 37013	1/2/2021 11:26	Dale Binder
Overturned Tractor Trailer I-40/I-65	1114 Jefferson St 37208	10/22/2020 9:29	Joshua Hayes
Transformer Spill	2300 Elm Hill Pike 37214	9/16/2020 14:43	Kevin Turner
137 Caden Dr. - Spill	201 Terminal Ct 37210	9/8/2020 8:08	Kenneth Tranter
Fuel Spill - Target Shopping Center	26 White Bridge Pike 37205	8/20/2020 8:12	Dale Binder
Fuel Spill Airways Blvd	60 Airways Blvd 37217	8/7/2020 6:14	Dale Binder
2226 Cruzen Street - Spill	2226 Cruzen St 37211	7/27/2020 10:34	Kevin Turner
Fuel Spill Thornton's	13010 Old Hickory Blvd 37013	7/2/2020 6:16	Dale Binder

Table 7H.3 – MWS Sewer Discharge Investigations Initiated by NPDES during FY21

Number	Location	Initiated Date	Initiated By Name
Sanitary Sewer Overflow	2801 22nd Ave S 37215	4/30/2021 11:00	Kevin Turner
Wooddale Lane - Sewer Odor	2153 Wooddale Ln 37214	4/20/2021 11:07	Allison Davis
Avery Apartments - Sewer Overflow	914 Winthorne Dr 37217	4/5/2021 13:04	Allison Davis
Creek Losing To Sewer	320 Cedarmont Dr 37211	1/28/2021 10:47	Stephanie Petty
Sewer Leak To Ms4	1415 Murfreesboro Pike 37217	1/28/2021 10:27	Stephanie Petty

Table 7H.5 – MWS Estimated/Reported Sewage Overflows in FY21

	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	Total
Wet Weather Overflows - CSO Permitted	29	19	8	15	2	12	5	9	19	9	17	9	153
Wet Weather Overflows - sewer (non pumps)	0	4	4	2	1	5	2	11	50	1	5	3	88
Wet Weather Overflows - Pump Stations	0	1	25	1	0	3	5	15	46	0	2	1	99
Wet Weather Overflows SSO- TOTAL	0	5	29	3	1	8	7	26	96	1	7	4	187
Dry Weather Overflows - sewer (non-pumps)	4	2	7	6	9	7	10	3	11	8	5	4	76
Dry Weather Overflows - Pump Stations	0	0	1	0	0	0	1	0	0	0	0	0	2
Dry Weather Overflows - TOTAL	4	2	8	6	9	7	11	3	11	8	5	4	78
# of Overflows that Reached Creeks - Sewer	2	2	3	2	3	10	7	6	28	5	8	3	79
# of Overflows that Reached Creeks - Pump Stations (All)	0	1	26	1	0	3	6	15	46	0	2	1	101
# of Overflow Response Staff per sewer event	2	2	2	2	2	2	2	2	2	2	2	2	2
# of Sewer Vac Trucks per sewer event	1	1	1	1	1	1	1	1	1	1	1	1	1

*Note: Most of the dry-weather overflows involve a small level of clean-up performed by Department personnel. Most of the overflows that reach creeks occur during wet weather conditions.

Table 8F.1 - MWS Stormwater Maintenance Work Order Numbers for FY21

ITEM	TOTAL
Ditch Excavated/Repaired (Linear Feet)	148,844
Debris Removed - Ditch Exc. & Repair (cubic yards)	5,923.25
Debris Removed - General (cubic yards)	205,785.93
Inlets Cleaned	44,107
Inlets Repaired	19
Material Removed (lbs)	396,963
Walls/Headwalls Built	368
Walls/Headwalls Repaired	68
Cross Drains Cleaned	310
Cross Drains Replaced	8
Matting Used (square feet)	261,619
Driveway Pipes Cleaned	1,374
Driveway Pipes Replaced	176
Preventative Maintenance Hours	8,319.6
Rain Routes Hours	1,395.75

Note: (Some assumptions are used in the quantity estimates)
*All statistics are reported based on the actual finish date of the task(s), not the work order(s).
*All cubic yardage is computed from the loads reported for each truck size.
*Debris Removed' under Ditch Exc. & Repair is the total of all cubic yardage reported under work orders that had a *Redefine Ditch' task. 'Debris Removed' under Debris Removal (misc.) is the total of cubic yardage reported under all other work orders not counted in the first Debris Removal figure.
*Inlets Repaired number includes those that were replaced with "bike-friendly" grates.

Table 8F.2 - MWS Stormwater Contracted Street Sweeping Collection Numbers for FY21

	July	August	September	October	November	December	January	February	March	April	May	June	Total
Debris Collected (tons)	302.69	328.63	282.19	447.63	461.32	507.1	377.34	378.34	467.7	393.96	312.88	253.16	4,512.94
Miles of Street Swept	1,625.55	2,235.22	1,827.25	1,710.62	1,484.21	1,934.16	1,804.72	1,459.89	2,088.417	2,031.04	1,626.956	1,697.44	2,1525.44

Table 9F.1 - Development and Review Section Plan Review Numbers for FY21

	July	August	September	October	November	December	January	February	March	April	May	June	Total
Number of Plan Submittals	139	146	91	123	110	123	94	81	104	109	106	114	**1,340**
Number of Plan Approvals	129	137	85	119	104	117	91	79	103	106	103	113	**1,286**

Note: This spreadsheet represents all plan submittals, re-submittals, including grading permit plans, plat reviews/approvals, as-built drawings, including Single Family Stormwater plan reviews, etc.

Table 10C.1 - Industrial Sites Inventoried within Metro's Database

Site Name	Site Location	TMSP Site	RMCP Site	TDEC Permit Number
3M Company	1002 Industrial Rd	Yes	No	TNR058417
48Forty Solutions (CHEP Recycled Pallet Solutions, LLC)	601 Space Park S.	Yes	No	TNR059311
A &C Auto Parts	4701 Ashland City Highway	Yes	No	TNR050702
A. Schulman, Inc. (Out of Business)	481 Allied Dr	Yes	No	TNR050726
AAA Industries Inc.	3141 Ambrose Ave	Yes	No	TNR050753
Abernathy Truck Salvage, Inc.	865 W Trinity Ln	Yes	No	TNR055940
ABF Freight System, Inc. - Nashville	890 Visco Dr	Yes	No	TNR051577
Advanced Composites (TN)	3050 Sidco Dr	Yes	No	TNR050238
Airgas USA LLC	7236 Centennial	No	No	
Akzo Nobel Coatings Inc.	20 Culvert St	Yes	No	TNR050546
All Star Recycling	460a Craighead Street	Yes	No	TNR056304
All State Auto Parts, Inc.	515 Nawakwa Trl	Yes	No	TNR056026
Allied Waste (BFI of Nashville)	700 Murfreesboro Park	Yes	No	TNR053390
Ammazon.Com Services, LLC	3818 Logistics Way	Yes	No	TNR059700
Amazon, LLC Sort Center / BNA5	50 Airways Blvd	Yes	No	TNR058257
Amazon.com Services, Inc. - DNA1	2813 Brick Church Pike	Yes	No	TNR059540
Amazon.com Services, Inc. - DNA12	1508 Gallatin Pike S	Yes	No	TNR059681
American Airlines Fuel Storage Facility at BNA	929 Airport Service Road	No	No	TN0063908
American Appliance Products - Madison	1129 Myatt Blvd	Yes	No	TNR050823
American Fabricators Inc	570 Metroplex Drive	Yes	No	TNR050340
Ashland Distribution (Nexeo Solutions)	2315 Clifton Ave	Yes	No	TNR056863
Associated Wholesale Grocers	500 S Cartwright St	Yes	No	TNR053328
Auto Central	12761 Old Hickory Blvd	Yes	No	TNR059790
Bellar Auto Parts, Inc.	670 James Ave	Yes	No	TNR050770
Berry Global Group (Clopay Plastics Products)	463 Harding Industrial Dr	Yes	No	TNR056368
Besway Systems Inc	305 Williams Ave	Yes	No	TNR050298
BFI Waste Services of TN (BFI of Nashville)	1160 Freightliner Dr.	Yes	No	TNR058639
Blanchard Terminal Company, LLC (Marathon Terminal)	1409 51st Ave N	Yes	No	TNR053661
Bridgestone Americas Tire Operations, LLC	1201 Bridgestone Parkway	No	No	
Carlex Glass America	7200 Centennial Blvd.	No	No	
Central Pike Class IV Landfill	3530 Central Park	Yes	No	TNR054259

Table 10C.1 - Industrial Sites Inventoried within Metro's Database (Continued)

Site Name	Site Location	TMSP Site	RMCP Site	TDEC Permit Number
Cherokee Marine Terminal	520 Cowan St	Yes	No	TNR050033
Circle Delivery Service, Inc.	125 Caden Dr	Yes	No	TNR053354
Clemons Concrete Coatings	505 Cave Road	No	No	
Clopay Advanced Printing	555 Harding Industrial Dr	Yes	No	TNR056671
CMC REBAR NASHVILLE	851 Visco Dr	No	No	
CMC Steel US, LLC	4280 Sidco Drive	Yes	No	TNR054524
Coca-Cola Bottling Co. of Nashville	407 Craighead Street	Yes	No	TNR050373
CONE SOLVENTS INC NASHVILLE (Frontier Logistical Services)	1830 Linder Industrial Dr	No	No	
COUNTRY DELITE FARMS LLC (Suiza)	1401 Church St	No	No	
CSX Intermodal, Inc - Nashville Terminal	3086 Sidco Dr	Yes	No	TNR058111
Cumberland Terminals, Inc.	7260 Centennial Blvd.	Yes	No	TNR056673
Cummings Signs Arch. and Banking Div. (Inactive)	4560 Trousdale Dr	Yes	No	TNR051909
D & R Motors & Recycling	616 Durrett Dr	Yes	No	TNR054251
Delek Logistics LLC	90 Van Buren St	No	No	TNR056587
Dicaperl Minerals Corp. (Chemrock)	2601 Osage St	Yes	No	TNR056770
Dixie Wire	5901 California Avenue	Yes	No	TNR053684
Dry Creek Wastewater Treatment Plant	61 Edenwold Rd	Yes	No	TNR053255
Dynamic Lifecycle Innovations TN LLC	3520 Ambrose Ave	Yes	No	TNR058723
E. I. DuPont De Nemours & Co., Inc. - Old Hickory	1002 Industrial Dr	Yes	No	TNR053980
Earthgrains Banking Co., Inc (Sara Lee Bakery)	2407 Franklin Pike	No	No	TNR051900
Embraer Aircraft Maintenance Services, Inc	10 Airways Blvd	Yes	No	TNR058982
Ergon Terminaling, Inc. - Nashville	1114 Visco Dr	Yes	No	TNR056603
Essex Plastics Midwest, LLC D.B.A. Flexol Packaging Corp.	1105 Visco Dr	Yes	No	TNR055073
EXXON MOBIL Pipeline CORP NASHVILLE TERMINAL	1741 Ed Temple Blvd	No	No	
Fed Ex Ground - Nashville Knight Rd	3301 Knight Dr	Yes	No	TNR053369
Federal Express - BNAA	1931 Air Lane Dr	No	No	TNR053436
Fiberweb, Inc. (Polymer Group)	70 Old Hickory Blvd	Yes	No	TNR056004
First Response, Inc.	1411 Dickerson Pike	Yes	No	TNR056591
Firstexpress Inc.	1135 Freightliner Dr	Yes	No	TNR053075

Table 10C.1 - Industrial Sites Inventoried within Metro's Database (Continued)

Site Name	Site Location	TMSP Site	RMCP Site	TDEC Permit Number
Five Star Foods (Cargil)	2621 Eugenia Ave	No	No	
Flexsol Packaging Corp.	1105 Visco Drive	Yes	No	TNR055073
Florida Rock & Tank Lines	2921 Hydes Ferry Rd.	Yes	No	TNR059227
Foley Products (Sherman-Dixie Concrete Industries, Inc.)	3641 Central Pike	No	Yes	TNR053492
Ford Nashville Property (Automotive Components)	7228 Centennial Blvd	Yes	No	TN0080675
Four Lane Auto Salvage Inc.	400 W Trinity Ln	Yes	No	TNR050223
GAF Materials Corp.	970 Fiber Glass Rd	Yes	No	TNR050872
Green tree Processing (Onsite Environmental)	1421 Baptist World Center Drive	Yes	No	TNR05309
Green Tree Processing (On-site Environmental)	1501 Baptist World Center Dr	Yes	No	TNR053609
Greer Stop Nut	481 McNally Dr	Yes	No	TNR050038
Greyhound Lines	709 5th Ave. South	Yes		TNR058664
Grooms Engines	611 4th Ave S	Yes	No	TNR054498
Hamilton Machine Co Inc	464 Woodycrest Ave	Yes	No	TNR054334
HARCROS CHEMICALS INC	1418 Poplar Ln	Yes	No	
Harpeth Valley Utility District	5910 River Road	No	No	TN0074748
Hennessy Industries	1601 J P Hennessy Dr	No	No	
Hilltop Auto Salvage	2408 Dickerson Park	Yes	No	TNR056159
IMI Nashville Airport	141 Bush Rd	No	Yes	TNG110189
IMI Ready Mix - Cowan Street	1433 Cowan Ct	No	Yes	TNG110099
IMI Ready Mix- Robertson Road	6616 Robertson Ave	No	Yes	
Industrial Machine and Tool Co.	88 Polk Avenue	No	No	
Innophos, Inc.	4600 Centennial Blvd.	Yes	No	TNR050060
January Environmental Services, Inc.	91 Van Buren St	Yes	No	TNR055999
John Bouchard & Sons Co	1024 Harrison St	No	No	TNR050185
John C. Tune Airport	110 Tune Airport Dr	Yes	No	TNR053942
John W. McDougall Co., Inc.	3731 Amy Lynn Dr	Yes	No	TNR056432
Jones Bros. Contractors Asphalt Plant #1 (Danley)	820 Old Ezell Road	Yes	No	TNR050885
Jones Brothers, LLC	129 Bush Rd	Yes	No	TNR051878
Jones Stone Co Inc	2705 Larmon Drive	Yes	No	TNR054460
Kano Laboratories, LLC	1000 E. Thompson Lane	Yes	No	TNR059830
Kennametal Inc (ATI Metal Working Products)	1 Teledyne Place	Yes	No	TNR053523
Kohl & Madden Plant #1	404 Harding Ind Dr	Yes	No	TNR053583

Table 10C.1 - Industrial Sites Inventoried within Metro's Database (Continued)

Site Name	Site Location	TMSP Site	RMCP Site	TDEC Permit Number
KYZEN Corporation	430 Harding Industrial Drive	No	No	
Lawson Ready Mix	5915 River Rd	No	Yes	TNG110101
Lee Building Products (Southland Brick and Block)	3201 Franklin Limestone Rd	Yes	No	
Living Earth - East Nashville	1511 Elm Hill Pike	Yes	No	TNR059260
Living Earth - West Nashville	6401 Centennial Blvd	Yes	No	TNR059259
LKQ Pick Your Part Southeast LLC	2030 Lucas Lane	Yes		TNR058938
Lojac Downtown Plant	500 Cowan St	Yes	No	TNR053266
Lojac Nashville River Road Plant	4404 River Rd	Yes	No	TNR050735
Lone Star Industries, Inc. d/b/a Buzzi Unicem USA - Nashville	1702 2nd Ave N	Yes	No	TNR050218
M & W Transportation Co., Inc.	101 Terminal Ct	Yes	No	TNR053706
Magellan Nashville I Terminal	1609 63rd Ave N	Yes	No	TNR056545
Magellan Nashville II Terminal - Holding, LP	1441 51st Ave N	Yes	No	TNR056486
Marathon Petroleum Company LLC	930 Youngs Ln	Yes	No	TNR056654
Marathon Petroleum Company, LLC - Bordeaux Terminal	2920 Hydes Ferry Rd	Yes	No	TNR056512
Metro Nashville Airport Authority	1 Terminal Drive	No	No	TN0064041
Metro Nashville District Energy System	90 Peabody St	Yes	No	TNR056643
Metro Salvage, Inc.	1975 Springfield Hwy	Yes	No	TNR056220
Mid TN Recycling	3533 Hermitage Industrial Drive	Yes	No	
Mid-South Wire	1070 Visco Dr	Yes	No	TNR050712
Milan Express Co., Inc. - Nashville	825 Visco Dr	Yes	No	TNR053247
Motiva Nashville Terminal	1717 61st Ave N	No	No	
MPLX Terminals LLC-Nashville (Marathon)	5 Main St	Yes	No	TNR058168
Music City Pick A Part, LLC	922 Lebanon Pike	Yes	No	TNR058703
Music City Processing	1629 Elm Hill Pike	No	No	
N & S Inc.	361 Herron Dr	Yes	No	TNR050716
Nashville Central STP	1600 2nd Ave N	Yes	No	TNR053258
Nashville Chemical & Equipment CO INC	7001 Westbelt Dr	No	No	
Nashville Machine Company	530 Woodycrest Ave	Yes	No	TNR050889

Table 10C.1 - Industrial Sites Inventoried within Metro's Database (Continued)

Site Name	Site Location	TMSP Site	RMCP Site	TDEC Permit Number
Nashville Machine Elevator Inc	510 Interstate Blvd S	Yes	No	TNR055927
Nashville Ready Mix - Cowan Ct.	1436 Cowan Ct	Yes	Yes	TNG110236
Nashville Ready Mix West Nashville	5853 River Rd	No	Yes	TNG110308
Nashville Ready Mix, Inc. Baptist World	1326 Baptist World Center Dr	Yes	Yes	TNG110237
Nashville Recycling Co	10 Van Buren St	Yes	No	TNR050515
Nashville VMF	707 Chestnut St	Yes	No	TNR053104
Nashville Wilbert Burial Vault Co.	432 Woodycrest Ave	Yes	No	TNR053618
Nashville Wire Products	1604 County Hospital Rd	Yes	No	TNR050806
NASHVILLE WIRE PRODUCTS	295 Driftwood St	No	No	
Neely's Bend Inc.	1327 Neelys Bend Rd	Yes	No	TNR051976
New Image Auto Dealer	1656 Antioch Pike	Yes	No	TNR059906
North American Galvanizing Co.(AZZ Galvanizing)	200 32ND AVE N Or 3201 Elkins Ave	Yes	No	TNR053495
Palm Commodities International, Inc Sales	1717 J P Hennessy Dr	No	No	
Parman Energy	7101 Cockrill Bend Blvd.	No	No	
Paulo Products Company	3206 Ambrose Ave	Yes	No	TNR050762
Pepsi Bottling Group	715 Thompson Ln	Yes	No	TNR051157
Perfection Molders	213 Connell St	No	No	
Peterbilt Motors Company	430 Myatt Dr	Yes	No	TNR050562
Pine Bluff Materials (formerly Hunter Marine)	6615 Robertson Ave.	Yes	No	TNR059211
Pine Bluff Materials- Visco	1030 Visco Dr	Yes	No	TNR053697
PlastiCycle	5801 Centennial Blvd	No	No	
POLAR TECHNOLOGY LLC (Hudson)	1360 Foster Ave	No	No	
Portland Express, Inc.	531 Woodycrest Ave	Yes	No	TNR051361
Precision Design and Machine Inc	6124 Cockrill Bend Circle	Yes	No	TNR054425
Precision Fabrics Group, Inc	530 Myatt Drive	No	No	
PSC Metals, Inc.	710 S 1st St	Yes	No	TNR051488
Pull-A-Part, LLC	7114 Centennial Boulevard	Yes	No	TNR056537
Purity Dairies	360 Murfreesboro Pike	Yes	No	TNR053516
Quad Graphics Nashville	2947 Brick Church Pike	No	No	
Quality Plating	71 Fesslers Ln	Yes	No	TNR056370
Quikrete - Nashville	6614 Robertson Ave	Yes	No	TNR053497
Radiant Technologies	1845 Elm Hill Park	Yes	No	TNR054346

Table 10C.1 - Industrial Sites Inventoried within Metro's Database (Continued)

Site Name	Site Location	TMSP Site	RMCP Site	TDEC Permit Number
Reading Midwest Distribution (FTEC, Inc. (Palfleet Truck))	1801 Lebanon Park	Yes	No	TNR056769
Reddy Ice-Nashville	7261 Centennial Blvd.	No	No	
RelaDyne (J B Weimar)	7281 Centennial Blvd	Yes	No	
Reostone Quarry	711 Basswood Ave	No	Yes	TNG110167
River Cement Sales Co dba Buzzi Unicem USA	1818 Cement Plant Rd	Yes	No	TNR054581
River Hills MRF	208 River Hills Drive	Yes	No	TNR053058
Rivergate Auto Parts, Inc. (Nashville Truck Parts)	1471 Gallatin Pike	Yes	No	TNR056268
Rivergate MRF (QRS River Hills Recycling Facility)	630 Myatt Dr	Yes	No	TNR058691
Rock Harbor Marine/Marina	525 Basswood Ave	Yes	No	TNR058737
Rogers Group (Whites Creek Asphalt Plant)	2827 Whites Creek Pike	Yes	No	
Rogers Group, Inc. (Reostone Quarry)	6514 Robertson Avenue	Yes	No	TNR050886
Rogers Manufacturing Company	110 Transit Avenue	Yes	No	TNR050478
Rolling Frito-Lay Sales, LP - Nashville DC	130 Spence Ln	Yes	No	TNR056640
S&H Plating	817 Madison Industrial Road	No	No	
Sadler Bros Trucking & Leasing Company, Inc.	436 Enos Reed Dr	Yes	No	TNR050326
Safety-Kleen Systems, Inc.	215 Whitsett Rd	Yes	No	TNR053225
Schreiber Foods, Inc.	4350 Hurricane Creek Blvd	Yes	No	TNR055926
Sequatchie Concrete Service, Inc.	306 Cowan St	Yes	No	TNR053083
Servitech Industries, Inc.	550 Brick Church Park Dr	Yes	No	TNR053500
Sessions Paving	6535 Robertson Ave	Yes	No	
Shrum Auto Salvage	1050 Old Buck Hill Road	Yes	No	
Sinomax East, Inc.	1740 J P Hennessey Drive	Yes	No	TNR059275
Siskin Steel	4040 Jordonia Station Road	Yes		TNR058950
Smitty's Auto Parts	1609 Bell Rd	Yes	No	TNR053717
Smyrna Mix Concrete	6677 River Road Pike	No	Yes	TNG110044
Smyrna Ready Mix	3040 Brandau Rd	No	Yes	TNG110270
Smyrna Ready Mix (Hailey's Harbor, Inc.)	3730 Amy Lynn Dr	Yes	No	TNR053535
Smyrna Ready Mix Concrete INC. - Visco Drive	1020 Visco Dr	No	Yes	TNG110138
Smyrna Ready Mix Concrete, 2nd Ave	1136 2nd Ave N	No	Yes	TNG110268

Table 10C.1 - Industrial Sites Inventoried within Metro's Database (Continued)

Site Name	Site Location	TMSP Site	RMCP Site	TDEC Permit Number
Snatra Old Hickory (Jacob Holm Inc)	326 Swinging Bridge	Yes	No	TNR058900
Southeastern Freight Lines, Inc.	4141 Murfreesboro Park	Yes	No	TNR053861
Southern Recycling (Metal Management Nashville, LLC)	1840 Linder Industrial Dr	Yes	No	TNR056650
Southern Services (Waste Management of Tennessee-Nashville)	4651 Amy Lynn Dr	Yes	No	TNR051258
Southland Brick and Block	686 Franklin Limestone Rd	Yes	No	TNR053089
Springs Global US-Nashville Plant	7200 Cockrill Bend Blvd	Yes	No	TNR053690
Steel Summit Tennessee	1718 J P Hennessy Dr	Yes	No	TNR055890
Summit Constructors	1516 Ft. Negley Blvd.			
Superior Solvents & Chemicals	518 Swinging Bridge Rd	No	No	
Superior Trim	511 Bridgeway Ave	No	No	
Supreme Oil Central, Inc. (Stratas Foods)	189 Spence Ln	Yes	No	TNR053774
Sysco Nashville	1 Hermitage Plaza	Yes	No	TNR058838
TDSI- Auto Distribution Center	600 Veritas St	Yes	No	TNR053065
TDSI Nashville Auto Distribution Center (Allied Systems Ltd)	743 Harding Pl	Yes	No	TNR051727
Techno-Aide, Inc.	7117 Centennial Blvd.	Yes	No	TNR054596
Tennessee Air National Guard	240 Knapp Blvd	Yes	No	TNR051762
Tennessee Commercial Warehouse - Nashville	22 Stanley St	Yes	No	TNR053626
Tennessee Imports Auto Salvage	326 Oriel Ave	Yes	No	TNR055923
The Mulch Company	665 Vernon Ave	Yes	No	TNR053751
Titan Logistics LLC (BNE Properties, Inc).	317 Arlington Ave	Yes	No	TNR051617
Tradebe Treatment and Recycling of Nashville LLC.	450 Edenwold Road	No	No	
TRANSFLO Terminal Services, Inc. (Nashville)	426 Chestnut St	Yes	No	TNR053444
TREW Industrial Wheels Inc.	310 Wilhagan Rd	Yes	No	TNR053987
Triumph (Vought) Aircraft Industries INC (Triumph)	1432 Vultee Blvd	No	No	
Truck Center, Inc. (Business Moved)	518 Hagan St	Yes	No	TNR056457
Truck Shine	332 Wilhagan Rd	Yes	No	TNR056508
TWB Antioch	6050 Dana Way	No	No	
U S Smokeless Tobacco Manufacturing CO	800 Harrison St	No	No	

Table 10C.1 - Industrial Sites Inventoried within Metro's Database (Continued)

Site Name	Site Location	TMSP Site	RMCP Site	TDEC Permit Number
United Parcel Service - Nashville Massman Dr.	705 Massman Dr	Yes	No	TNR053562
United Parcel Service - Nashville Whites Creek Pike	3205 Whites Creek Park	Yes	No	TNR053554
United Parcel Service - TCI	7525 Hickory Hills Ct	Yes	No	TNR053556
USF Holland, Inc.	500 Oakbluff Ln	Yes	No	TNR058068
Vaughn Manufacturing Co	757 Douglas Ave	Yes	No	TNR054519
VF Imagewear, Inc.	554 Hickory Hl	Yes	No	TNR051734
Vietti Foods Company, Inc.	636 Southgate Ave	Yes	No	TNR053850
Vintage Millworks Inc	525 Merritt Ave	Yes	No	TNR054564
Volunteer Express (Star Transportation)	1125 Foster Ave	Yes	No	TNR053957
Vulcan Construction Materials - Hermitage Asphalt (Lojac)	3552 Hermitage Industrial Dr	Yes	No	TNR055996
Vulcan Construction Materials - Hermitage Sign Shop	3552 Hermitage Industrial Drive	Yes	No	TNR058118
Vulcan Construction Materials, LLC - Danley Asphalt (Lojac)	3185 Franklin Limestone Rd	Yes	No	TNR053269
Vulcan Quarry - Hermitage	5301 Old Hickory Blvd	No	No	
Warren Paint & Color Co	700 Wedgewood Ave	Yes	No	TNR051129
Waste Management – North Nashville (Rivergate)	630 Myatt Drive	Yes	No	TNR058691
Waste Management C&D Recycle Center	3211 Franklin Limestone Rd	No	No	
Waste Management Truck Maintenance Facility/Garbage Transfer St	1428 Antioch Pike	Yes	No	TNR051258
West Nashville Auto Recycling Inc.	5604 Centennial Blvd.	Yes	No	TNR051899
WestRock (Smurfit-Stone Container)	707 19th Ave N	Yes	No	TNR053040
WHIRLPOOL CORP	1714 Heil Quaker Blvd.	No	No	
Whites Creek Wastewater Treatment Plant	1360 County Hospital Rd	No	No	
Wikoff Color Corporation	214 Omonhundro Place	Yes	No	TNR050089

Table 10F.1 - Industrial Sites Inspected during FY21

Site Name	Site Location	TMSP Site	RMCP Site	Date Inspected	TDEC Permit Number
Lone Star Industries, Inc. d/b/a Buzzi Unicem USA - Nashville	1702 2ND AVE N	Yes	No	28-Jun-21	TNR050218
Purity Dairies	360 Murfreesboro Pike	Yes	No	25-Jun-21	TNR053516
Green tree Processing (Onsite Environmental)	1421 Baptist World Center Drive	Yes	No	24-Jun-21	TNR05309
Fed Ex Ground - Nashville Knight Rd	3301 KNIGHT DR	Yes	No	17-Jun-21	TNR053369
Berry Global Group (Clopay Plastics Products)	463/555 HARDING INDUSTRIAL DR	Yes	No	10-Jun-21	TNR056368
Greyhound Lines	709 Representative John Lewis Way South	Yes		07-Jun-21	TNR058664
Sontara Old Hickory (Jacob Holm Inc.)	326 Swinging Bridge Rd	Yes	No	03-Jun-21	TNR058900
Sinomax East, Inc.	1740 JP Hennessey Drive	Yes	No	25-May-21	TNR059275
Innophos, Inc.	4600 CENTENNIAL BV	Yes	No	20-May-21	TNR050060
Pine Bluff Materials (formerly Hunter Marine)	6615 Robertson Ave.	Yes	No	11-May-21	TNR059211
Quikrete - Nashville	6614 ROBERTSON AVE	Yes	No	11-May-21	TNR053497
Fiberweb, Inc. (Berry Global)	70 OLD HICKORY BLVD	Yes	No	07-May-21	TNR056004
Quad Graphics Nashville	2947 Brick Church Pike	No	No	06-May-21	
Living Earth - East Nashville	1511 Elm Hill Pike	Yes	No	15-Apr-21	TNR059260
Supreme Oil Central, Inc. (Stratas Foods)	189 SPENCE LN	Yes	No	23-Mar-21	TNR053774
Summit Constructors	1516 Ft. Negley Blvd.			05-Mar-21	
Superior Solvents & Chemicals	518 SWINGING BRIDGE RD	No	No	05-Mar-21	
Waste Management - North Nashville (Rivergate MRF)	630 MYATT DR	Yes	No	23-Feb-21	TNR058691
Waste Management Truck Maintenance Facility/Garbage Transfer St	1428 ANTIOCH PIKE	Yes	No	23-Feb-21	TNR051258
TWB Antioch	6050 Dana Way	Yes	No	12-Feb-21	TNR059269
The Mulch Company	665 VERNON AVE	Yes	No	08-Feb-21	TNR053751
Smitty's Auto Parts	1609 BELL RD	Yes	No	02-Feb-21	TNR053717
Vulcan Nashville- River Road Asphalt Plant	5853 River Road	Yes	No	25-Jan-21	TNR050735
All Star Recycling	460A Craighead Street	Yes	No	14-Jan-21	TNR056304

Table 10F.1 - Industrial Sites Inspected during FY21 (Continued)

Site Name	Site Location	TMSP Site	RMCP Site	Date Inspected	TDEC Permit Number
Four Lane Auto Salvage Inc.	400 W TRINITY LN	Yes	No	14-Jan-21	TNR050223
Hennessy Industries	1601 J P HENNESSY DR	Yes	No	12-Jan-21	TNR050446
American Appliance Products - Madison	1129 MYATT BLVD	Yes	No	07-Jan-21	TNR050823
Siskin Steel	4040 Jordonia Station Road	Yes		15-Dec-20	TNR058950
ABF Freight System, Inc. - Nashville	890 VISCO DR	Yes	No	10-Dec-20	TNR051577
3M Company	400 Swinging Bridge Rd	Yes	No	24-Nov-20	TNR058417
Servitech Industries, Inc.	550 BRICK CHURCH PARK DR	Yes	No	18-Nov-20	TNR053500
Sessions Paving	6535 Robertson Ave	Yes	No	04-Nov-20	
Titan Logistics LLC (BNE Properties, Inc).	317 ARLINGTON AVE	Yes	No	27-Oct-20	TNR051617
Mid TN Recycling	3533 Hermitage Industrial Drive	Yes		21-Oct-20	
Safety-Kleen Systems, Inc.	215 WHITSETT RD	Yes	No	15-Oct-20	TNR053225
Vulcan Construction Materials, LLC - Danley Asphalt (Lojac)	3185 FRANKLIN LIMESTONE RD	Yes	No	13-Oct-20	TNR053269
Rivergate Auto Parts, Inc. (Nashville Truck Parts)	1471 GALLATIN PIKE	Yes	No	23-Sep-20	TNR056268
Nashville Wire Products	1604 COUNTY HOSPITAL RD	Yes	No	17-Sep-20	TNR050806
Vulcan Construction Materials - Hermitage Asphalt (Lojac)	3552 HERMITAGE INDUSTRIAL DR	Yes	No	01-Sep-20	TNR055996
Vulcan Construction Materials - Hermitage Sign Shop	3552 Hermitage Industrial Drive	Yes	No	01-Sep-20	TNR058118
Lee Building Products (Southland Brick and Block)	3201 FRANKLIN LIMESTONE RD	Yes	No	27-Aug-20	
Living Earth - West Nashville	6401 Centennial Blvd	Yes	No	13-Aug-20	TNR059259
PlastiCycle	5801 CENTENNIAL BLVD	No	No	13-Aug-20	
Vintage Millworks Inc	525 MERRITT AVE	Yes	No	11-Aug-20	TNR054564
Besway Systems Inc	305 WILLIAMS AVE	Yes	No	14-Jul-20	TNR050298
Parman Energy	7101 Cockrill Bend Blvd.	Yes	No	14-Jul-20	TNR059092
BFI Waste Services of TN (BFI of Nashville)	1160 Freightliner Dr.	Yes	No	13-Jul-20	TNR058639

Table 13A.1 – TMDL Monitoring Data for FY21

Date	Time	Watershed	Site Name	Sampler (initials)	Diss. Ox mg/L	Cond. µS	Temp. °C	pH	Flow ft3/sec	E. coli MPN/100mL	PCR huback
7/15/2020	8:00	Sevenmile	Shasta	SP	7.56	653	20.2	7.87	0.286	344.1	ND
7/15/2020	8:20	Sevenmile	Sevenmile 2	SP	7.56	529	22	7.84	0.553	435.2	ND
7/15/2020	8:49	Mill	Mill 1	MB VL	6.03	512	24.8	7.21		579.4	ND
7/15/2020	8:52	Mill	Cathy Jo	SP	7.45	470	20	8.03	1.444	325.5	ND
7/15/2020	9:12	Mill	Sims 1	MB VL	7.14	536	23.1	7.33	4.455	360.9	ND
7/15/2020	9:26	Sevenmile	Sevenmile 1	SP	8.26	495	22.1	8.14	3.496	517.2	ND
7/15/2020	9:41	Mill	Pavillion	MB VL	6.67	586	21.3	7.53	0.439	816.4	ND
7/15/2020	10:02	Mill	Mill 2	MB VL	7.24	525	24.4	7.88	60.100	183.5	ND
7/15/2020	10:18	Mill	Finley	MB VL	6.74	388.5	22.4	8.05	0.348	151.5	ND
7/16/2020	7:40	Sevenmile	Shasta	SP	6.54	679	21.2	8.01	0.316	648.8	ND
7/16/2020	7:58	Sevenmile	Sevenmile 2	SP	7.04	545	23.6	8.14	0.915	410.6	ND
7/16/2020	8:20	Mill	Cathy Jo	SP	7.69	473	20.4	8.1	1.333	157.6	ND
7/16/2020	8:23	Mill	Mill 1	MB VL	5	542	26	8.1		162.4	ND
7/16/2020	8:39	Mill	Sims 1	MB VL	7.73	556	23.9	7.21	1.987	387.3	ND
7/16/2020	8:50	Sevenmile	Sevenmile 1	SP	7.47	500	23.4	8.16	2.970	727	ND
7/16/2020	9:07	Mill	Mill 2	MB VL	6.98	552	25.6	7.48	45.200	261.3	ND
7/16/2020	9:18	Mill	Finley	MB VL	6.98	389.7	23	7.67	0.084	275.5	ND
7/16/2020	9:38	Mill	Pavillion	MB VL	6.88	593	22.2	7.58	0.113	770.1	0.5
7/20/2020	7:43	Sevenmile	Shasta	SP	6.69	687	22	7.85	0.455	686.7	0.3
7/20/2020	8:01	Sevenmile	Sevenmile 2	SP	5.7	411.6	24.9	7.93	2.864	387.3	0.3
7/20/2020	8:23	Mill	Cathy Jo	SP	7.55	426	20.5	7.75	1.431	613.1	ND
7/20/2020	8:49	Sevenmile	Sevenmile 1	SP	6.98	496	24.9	7.96	7.340	248.9	ND
7/20/2020	8:59	Mill	Sims 1	MB VL	6.42	627	24.5	6.77		579.4	ND
7/20/2020	9:25	Mill	Pavillion	MB VL	5.83	599	23	6.95		816.4	ND
7/20/2020	9:41	Mill	Mill 2	MB VL	5.81	555	28.6	7.29		222.4	ND
7/20/2020	9:53	Mill	Finley	MB VL	6.42	373.7	23.7	7.39		214.3	ND
7/20/2020	10:22	Mill	Mill 1	SP	3.4	549	28.8	8		125.9	ND
7/21/2020	8:37	Mill	Mill 1	MB L	4.3	560	28.8	8		59.3	ND
7/21/2020	8:50	Mill	Sims 1	MB VL	6.78	672	24.3	7.5	1.551	365.4	ND
7/21/2020	9:13	Mill	Pavillion	MB VL	5.81	611	22.7	7.21	0.197	387.3	ND
7/21/2020	9:30	Mill	Mill 2	MB VL	5.87	562	27.7	7.88	34.300	154.1	ND
7/21/2020	9:41	Mill	Finley	MB VL	6.27	381.1	23.1	7.34	0.031	365.4	ND
7/21/2020	10:05	Sevenmile	Sevenmile 1	MB VL	6.89	497	24.4	7.92	3.282	260.3	ND
7/21/2020	10:23	Mill	Cathy Jo	MB VL	8.15	476	21	7.96	1.706	151.5	0.2
7/21/2020	10:39	Sevenmile	Sevenmile 2	MB VL	8.26	544	25.1	8.14	0.310	461.1	ND
7/21/2020	10:53	Sevenmile	Shasta	MB VL	6.11	687	22.2	7.74	0.306	547.5	ND
8/5/2020	9:00	Mill	Pavillion	MB VL	6.99	542	20.3	7.96	0.391	290.9	0.2
8/5/2020	9:50	Sevenmile	Sevenmile 2	VL MB						325.5	0.6
8/5/2020	11:00	Mill	Shasta	VL MB	7.38	686	20.5	7.8		579.4	ND
8/6/2020	7:52	Mill	Cathy Jo	SP	8.23	476	19.7	7.67	3.385	142.1	ND
8/6/2020	8:27	Sevenmile	Sevenmile 1	SP	7.47	500	21.2	8.04	8.487	613.1	ND

Table 13A.1 – TMDL Monitoring Data for FY21 (Continued)

Date	Time	Watershed	Site Name	Sampler (initials)	Diss. Ox mg/L	Cond. µS	Temp. °C	pH	Flow ft3/sec	E. coli MPN/100mL	PCR huback
8/6/2020	8:53	Mill	Finley	SP	7.25	403.5	21.4		0.283	517.2	ND
8/6/2020	9:15	Mill	Mill 2	SP	7.33	498	23.1	8.03	45.200	178.2	0.5
8/6/2020	9:22	Mill	Mill 1	MB VL	7	555	23.1	8.1		161.6	ND
8/6/2020	9:38	Mill	Sims 1	MB VL	8.32	635	21.7	8.08	1.260	248.9	ND
8/26/2020	7:36	Sevenmile	Sevenmile 2	SP	8.09	547	22.7	8.08		461.1	ND
8/26/2020	7:52	Sevenmile	Shasta	SP	7.05	706	21.1	8.03		410.6	0.3
8/26/2020	8:07	Mill	Cathy Jo	SP	7.04	494	20.4	7.92		579.4	ND
8/26/2020	8:35	Sevenmile	Sevenmile 1	SP	7.33	514	22.6	8.13		686.7	ND
8/26/2020	8:56	Mill	Finley	SP	6.81	413.9	22.9	7.82		101.7	0.7
8/26/2020	9:11	Mill	Pavillion	MB	7.86	547	21.3	7.91		517.2	ND
8/26/2020	9:25	Mill	Mill 2	MB	6.95	538	24.5	8.23		517.2	ND
8/26/2020	9:50	Mill	Sims 1	MB	7.89	612	22.9	8.04		344.8	ND
8/26/2020	10:05	Mill	Mill 1	MB	6.3	531	24.6	7.8		410.6	ND
9/21/2020	8:01	Sevenmile	Shasta	SP	8.36	701	16	8.1	0.367	325.5	0.6
9/21/2020	8:21	Sevenmile	Sevenmile 2	SP	9.15	549	16.7	8.26	2.707	290.9	ND
9/21/2020	8:42	Mill	Cathy Jo	SP	8.35	482	16.8	8.08	1.208	325.5	ND
9/21/2020	9:11	Sevenmile	Sevenmile 1	SP	7.78	512	17.4	8.29	4.301	547.5	0.4
9/21/2020	9:24	Mill	Mill 1	MB VL	8.2	565	19	8.1		259.5	ND
9/21/2020	9:45	Mill	Sims 1	MB VL	7.99	657	18.4	7.99		307.6	ND
9/21/2020	10:07	Mill	Pavillion	MB VL	7.94	520	17.6			686.7	ND
9/21/2020	10:23	Mill	Mill 2	MB VL	8.82	534	19	8.15		178	0.7
9/21/2020	10:32	Mill	Finley	MB VL	8.07	404.1	18.8	7.73		151.5	ND
10/15/2020	7:50	Sevenmile	Shasta	SP	7.99	705	15.7	8.01		461.1	ND
10/15/2020	8:03	Sevenmile	Sevenmile 2	SP	8.86	570	15.9	8.21		224.7	ND
10/15/2020	8:14	Mill	Cathy Jo	SP	7.58	489	17.9	8.08		260.3	ND
10/15/2020	8:37	Sevenmile	Sevenmile 1	SP	8.3	511	16.7	8.21		613.1	ND
10/15/2020	9:42	Mill	Mill 1	MB VL		567	17.4	7.8		148.3	ND
10/15/2020	9:49	Mill	Sims 1	MB VL	8.79	600	18	7.75		228.2	ND
10/15/2020	10:11	Mill	Pavillion	MB VL	7.64	565	17.7	7.7		461.1	ND
10/15/2020	10:30	Mill	Mill 2	MB VL	9.16	563	17.3	8.18		131.4	ND
10/15/2020	10:50	Mill	Finley	MB VL	8.21	403.3	18.3	8.03		218.7	ND
11/9/2020	7:40	Sevenmile	Shasta	SP	6.91	707	15	7.93		648.8	ND
11/9/2020	7:53	Sevenmile	Sevenmile 2	SP	9.86	559	14.7	8.24		307.6	ND
11/9/2020	8:08	Mill	Cathy Jo	SP	6.83	477	16.9	8.01		461.1	ND
11/9/2020	8:24	Sevenmile	Sevenmile 1	SP	8.4	502	15.5	7.99		107.6	0.3
11/9/2020	9:36	Mill	Mill 1	MB VL	7.4	573	15.9	7.8		77.1	ND
11/9/2020	9:55	Mill	Sims 1	MB VL	10.1	656	16.6	7.94		435.2	ND
11/9/2020	10:14	Mill	Pavillion	MB VL	7.67	562	16.5	7.71		193.5	ND
11/9/2020	10:30	Mill	Mill 2	MB VL	9.36	585	16	8.11		131.4	ND
11/9/2020	10:45	Mill	Finley	MB VL	8.22	384	17.3	7.85		31.1	0.3
12/10/2020	7:36	Mill	Mill 1	VL	10.3	581	7.5	8		238.2	ND
12/10/2020	7:50	Mill	Sims 1	VL	11.49	695	8.8	7.86		172.3	ND

Table 13A.1 – TMDL Monitoring Data for FY21 (Continued)

Date	Time	Watershed	Site Name	Sampler (initials)	Diss. Ox mg/L	Cond. µS	Temp. °C	pH	Flow ft3/sec	E. coli MPN/100mL	PCR huback
12/10/2020	8:06	Mill	Paviliion	VL	6.97	587	8.9	7.02		81.6	0.2
12/10/2020	8:20	Mill	Mill 2	VL	6.64	553	8.7	7.36		88	ND
12/10/2020	8:34	Mill	Finley	VL	11.25	379.4	9	7.42		7.5	ND
12/10/2020	8:48	Sevenmile	Sevenmile 1	VL	7	489	9	7.99		36.4	0.8
12/10/2020	9:04	Mill	Cathy Jo	VL	8.26	504	9.1	7.89		74.4	ND
12/10/2020	9:28	Sevenmile	Sevenmile 2	VL	16.43	590	8.2	8.55		172.3	ND
12/10/2020	10:02	Sevenmile	Shasta	VL	10.55	762	9.3	8.3		98.8	ND
1/14/2021	8:49	Sevenmile	Shasta	SP	12.34	653	6.2	8.34		160.7	2.3
1/14/2021	9:02	Sevenmile	Sevenmile 2	SP	18.79	533	5	8.74		110.6	0.3
1/14/2021	9:15	Mill	Cathy Jo	SP	9.46	465	11	8.14		325.5	ND
1/14/2021	9:29	Sevenmile	Sevenmile 1	SP	13.87	453.2	6	8.64		155.3	1.5
1/14/2021	9:43	Mill	Finley	SP	11.48	471	7.7	8.19		8.5	ND
1/14/2021	10:07	Mill	Mill 2	SP	14.04	509	4.6	8.5		43.2	ND
1/14/2021	10:33	Mill	Paviliion	SP	13.15	504	8.1	8.13		10.9	ND
1/14/2021	11:02	Mill	Sims 1	SP	15.85	604	7.8	8.68		58.1	ND
1/14/2021	11:21		Mill 1		12.5	534	4.9	8.1		24.3	0.3
2/10/2021	9:25	Mill	Mill 1	MB	10.7	532	8.2	8.3		42	ND
2/10/2021	9:40	Sevenmile	Shasta	VL	11.87	724	9.2	8.05		129.6	ND
2/10/2021	9:55	Sevenmile	Sevenmile 2	VL	15.58	540	8.8	8.46		98.8	ND
2/10/2021	10:10	Mill	Cathy Jo	VL	95.8	10.11	467	12.9		261.3	ND
2/10/2021	10:30	Mill	Sims 1	MB	14.45	612	9.7	8.09		86.9	ND
2/10/2021	10:48	Mill	Pavillion	MB	12.69	544	10.4	8.19		29.2	ND
2/10/2021	10:48	Sevenmile	Sevenmile 1	VL	10.94	439	8.6	8.23		71.2	ND
2/10/2021	11:01	Mill	Finley	VL	12.13	503	9.4	8.06		137.6	ND
2/10/2021	11:01	Mill	Mill 2	MB	13.98	518	8.4	8.46		82	ND
3/10/2021	7:14	Sevenmile	Shasta	SP	12.07	509	10.4	8.02		178.9	ND
3/10/2021	7:25	Sevenmile	Sevenmile 2	SP	12.27	541	10	8.25		344.1	ND
3/10/2021	7:32	Mill	Sims 1	MB VL	10.9	667	11.4	8		146.7	ND
3/10/2021	7:35	Mill	Cathy Jo	SP	8.82	391.6	13.5	8.01		410.6	ND
3/10/2021	7:53	Mill	Paviliion	MB VL	11.2	538	11.1	8.26		1119.9	ND
3/10/2021	7:56	Sevenmile	Sevenmile 1	SP	11.4	507	10.9	8.13		214.2	ND
3/10/2021	8:14	Mill	Mill 2	MB VL	11.32	518	10.8	8.45		93.3	ND
3/10/2021	8:20	Mill	Mill 1	SP	10.1	543	11	8.2		284.2	ND
3/10/2021	8:26	Mill	Finley	MB VL	12.1	518	10.6	8.32		27.2	ND
4/19/2021	8:41	Sevenmile	Shasta	SP ML	8.98	670	12.2	8		920.8	ND
4/19/2021	8:57	Sevenmile	Sevenmile 2	SP ML	12.19	522	12.7	8.86		209.8	ND
4/19/2021	9:16	Mill	Cathy Jo	SP ML	7.88	475	14.1	8.12		313	ND
4/19/2021	9:34	Sevenmile	Sevenmile 1	SP ML	9.67	485	13.2	8.67		325.5	ND
4/19/2021	9:37	Mill	Mill 1	MB VL	10.9	508	15.6	8.4		32.7	ND
4/19/2021	9:57	Mill	Sims 1	MB VL	11.95	512	14.2	8.05		98.5	ND
4/19/2021	11:01	Mill	Mill 2	MB VL	11.75	484	14.7	8.15		68.9	ND
4/19/2021	11:13	Mill	Finley	MB VL	9.28	495	15.3	7.86		56.5	ND

Table 13A.1 – TMDL Monitoring Data for FY21 (Continued)

Date	Time	Watershed	Site Name	Sampler (initials)	Diss. Ox mg/L	Cond. µS	Temp. °C	pH	Flow ft3/sec	E. coli MPN/100mL	PCR huback
2/10/2021	11:01	Mill	Mill 2	MB	13.98	518	8.4	8.46		82	ND
3/10/2021	7:14	Sevenmile	Shasta	SP	12.07	509	10.4	8.02		178.9	ND
3/10/2021	7:25	Sevenmile	Sevenmile 2	SP	12.27	541	10	8.25		344.1	ND
3/10/2021	7:32	Mill	Sims 1	MB VL	10.9	667	11.4	8		146.7	ND
3/10/2021	7:35	Mill	Cathy Jo	SP	8.82	391.6	13.5	8.01		410.6	ND
3/10/2021	7:53	Mill	Paviliion	MB VL	11.2	538	11.1	8.26		1119.9	ND
3/10/2021	7:56	Sevenmile	Sevenmile 1	SP	11.4	507	10.9	8.13		214.2	ND
3/10/2021	8:14	Mill	Mill 2	MB VL	11.32	518	10.8	8.45		93.3	ND
3/10/2021	8:20	Mill	Mill 1	SP	10.1	543	11	8.2		284.2	ND
3/10/2021	8:26	Mill	Finley	MB VL	12.1	518	10.6	8.32		27.2	ND
4/19/2021	8:41	Sevenmile	Shasta	SP ML	8.98	670	12.2	8		920.8	ND
4/19/2021	8:57	Sevenmile	Sevenmile 2	SP ML	12.19	522	12.7	8.86		209.8	ND
4/19/2021	9:16	Mill	Cathy Jo	SP ML	7.88	475	14.1	8.12		313	ND
4/19/2021	9:34	Sevenmile	Sevenmile 1	SP ML	9.67	485	13.2	8.67		325.5	ND
4/19/2021	9:37	Mill	Mill 1	MB VL	10.9	508	15.6	8.4		32.7	ND
4/19/2021	9:57	Mill	Sims 1	MB VL	11.95	512	14.2	8.05		98.5	ND
4/19/2021	11:01	Mill	Mill 2	MB VL	11.75	484	14.7	8.15		68.9	ND
4/19/2021	11:13	Mill	Finley	MB VL	9.28	495	15.3	7.86		56.5	ND
4/21/2021	13:24	Mill	Pavillion	SP	11.11	510	12.9	7.77		113.7	0.2
5/20/2021	8:14	Mill	Sevenmile 2	MB VL			18.2	8.21		488.4	
5/20/2021	8:34	Mill	Shasta	MB VL			17.2	8.04		410.6	ND
5/20/2021	9:02	Mill	Cathy Jo	MB VL			17.8	8.09		185	0.2
5/20/2021	9:16	Mill	Sevenmile 1	MB VL			18.4	8.14		365.4	ND
5/20/2021	9:52	Mill	Finley	MB VL			17.7	7.71		67.7	ND
5/20/2021	10:03	Mill	Mill 2	MB VL						101.7	1.1
5/20/2021	10:16	Mill	Pavillion	MB VL						344.8	0.1
5/20/2021	10:28	Mill	Sims 1	MB VL						172.5	ND
5/20/2021	10:42	Mill	Mill 1	MB VL						261.3	ND
6/8/2021	859	Mill	Sevenmile 2	AD/VL	8.64	563	20.8	8.07		1553.1	0.7
6/8/2021	914	Mill	Shasta	AD/VL	6.37	681	19.6	8.04		488.4	0.8
6/8/2021	929	Mill	Cathy Jo	AD/VL	8.5	468	18.9	8.15		435.2	0.4
6/8/2021	945	Mill	Sevenmile 1	AD/VL	7.9	509	20.6	8.02		272.3	ND
6/8/2021	1004	Mill	Finley	AD/VL	6.54	535	19	7.9		80.9	0.5
6/8/2021	1017	Mill	Mill 2	AD/VL	7.45	528	22.6	8.11		272.3	0.3
6/8/2021	1034	Mill	Pavillion	AD/VL	7.96	555	19	8.01		648.8	0.7
6/8/2021	1058	Mill	Sims 1	AD/VL	8.4	625	20.9	8.12		307.6	0.8
6/8/2021	1115	Mill	Mill 1	AD/VL	4.39	535	22.7	8.12		307.6	0.5

Table 13A.2 - SWMP Quantifiable Statistics

Categories	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21
Recycled Oil (tons)	17.82	20.27	26.88	35.38	36.4	35.32	36.52	28.15	33	23.31	18.85	32.73	29.95	29.35	18.42	7.63
Recycled Glass (tons)	1,107.05	1,116.52	1,607.48	2,110.05	1,866.14	2,207.29	2,160.19	2,199.85	2,136.16	1,654.97	2,264.46	2,339.31	2,582.55	2,608.48	2,594.74	2,682.86
Total Brush Collection (tons)	30,498.85	30,269.40	27,785.25	30,972.21	29,456.10	38,634.89	32,795.37	28,486.59	27,178.37	21,014.68	26,742.01	31,893.67	25,932.64	25,287.66	35,755.60	28,411.34
Total Waste Collected (tons)	150,972.54	152,430.24	153,266.01	149,474.79	151,425.06	151,501.17	148,297.40	151,131.01	153,795.70	155,738.78	163,340.77	162,884.18	165,720.90	175,580.57	179,135.55	178,483.99
# of Water Quality Complaints (non-construction) Investigations Initiated in Database	287	156	135	133	139	138	122	131	114	99	100	107	120	123	130	112
# of Construction Stormwater-Related Inspections	5,721	6,552	6,327	6,160	5,079	5,457	5,843	5,170	6,064	6,082	6,684	6,787	7,277	8,342	8,590	8,606
# of Grading Permits Issued	252	239	165	109	121	135	142	138	318	276	254	262	311	327	283	308
# of Engineered Plans Submitted to Stormwater Development and Review	1,427	1,505	1,970	1,600	1,367	1,319	1,525	1,791	1,813	2,572	3,034	3,636	3,293	2,911	1,646	1,340
# of Construction Plans Approved or Declared No Permit Needed by Stormwater Development and Review	507	619	871	687	506	559	1,174	1,411	1,360	1,998	1,450	1,419	1,415	1,205	1,537	1,286
# of Stormwater Enforcements (NOVs and SWOs)	283	190	342	188	123—	148	94	96	168	128	116	159	112	125	87	76

Note: Due to the pandemic many of the Household Hazardous Waste Collection numbers were down due to closures.

Table 13A.3 – Ambient Monitoring Data for the FY21 Reporting Period

Date	Time	Site Name	Samplers (initials)	DO	DO	Cond.	Temp	pH	Flow	E. coli	BOD5	COD	NH3	TKN	Nitrate-Nitrite	Total N	Diss. P	Total P	Pb	Zn	Cr	Cu	Ni	Oil and Grease	TSS
				%	mg/L	uS	C		ft3/sec	mpn	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L
9/17/2020	7:50	Pages Branch	MB VL	72.4	6.67	672	19.0	7.23	0.44	686.7	ND	ND	ND	0.11	1.40	1.51	0.18	0.19	ND	1.000	ND	0.464	0.446	ND	ND
9/17/2020	8:20	Cooper Creek	MB VL SP	90.3	8.48	500	18.3	7.56	0.52	547.5	ND	ND	ND	ND	2.46	ND	0.23	0.25	ND	ND	ND	0.347	0.121	ND	ND
9/23/2020	9:04	Mill Creek 2	VL/MB/AS	84.7	7.87	548	18.5	8.18	48.70	155.3	ND	ND	ND	0.17	0.52	0.69	0.20	0.21	ND	ND	ND	0.450	0.246	ND	ND
9/23/2020	8:27	Trip Blank	MB VL	---	---	---	---	---	---	<1	ND	0	ND	ND	ND	ND	0.03	0.00	ND	ND	ND	0.122	ND	ND	ND
11/19/2020	9:01	Pages Branch	MB VL	93.2	10.13	680	11.3	7.80	0.93	56.5	ND	ND	ND	0.11	0.79	0.90	0.18	0.19	ND	1.462	ND	ND	0.340	ND	ND
11/19/2020	9:26	Cooper Creek	MB VL	94.8	10.04	491	12.8	8.19	0.25	101.0	ND	ND	ND	0.10	1.73	1.83	0.23	0.24	ND	ND	ND	ND	0.118	ND	ND
11/19/2020	9:30	Field Blank	MB VL	---	---	---	---	---	---	<1	ND	ND	ND	ND	ND	ND	ND	0.02	ND	ND	ND	ND	ND	ND	ND
11/19/2020	10:18	Mill Creek 2	MB VL	98.0	11.31	562	8.8	8.19	19.40	156.5	ND	ND	ND	0.16	ND	0.16	0.19	0.21	ND	ND	ND	ND	0.301	ND	11
3/4/2021	9:40	Pages Branch	VL/AD	115.9	11.75	707	12.9	7.69	1.61	61.4	ND	0	ND	ND	1.50	1.50	0.12	0.17	0.100	1.513	ND	ND	0.272	ND	ND
3/4/2021	10:10	Cooper Creek	VL/AD	104.8	10.55	439	15.0	7.58	3.96	56.4	ND	ND	ND	ND	2.93	2.93	0.20	0.26	0.165	ND	ND	ND	ND	ND	ND
3/4/2021	11:00	Mill Creek 2	VL/AD	114.5	12.51	507	11.5	8.10	251.00	72.0	ND	ND	ND	ND	1.03	1.03	0.17	0.23	0.168	ND	ND	ND	0.246	ND	8
3/4/2021	10:10	Cooper Creek Duplicate	VL/AD	---	---	---	---	---	---	60.9	ND	ND	ND	ND	2.93	2.93	0.19	0.25	0.211	1.709	ND	1.977	0.151	ND	ND
5/13/2021	8:51	Pages Branch	VL MB	90.7	9.29	667	14.2	8.02	0.15	273.3	ND	10	ND	0.25	0.97	1.22	0.37	0.44	1.026	7.081	ND	ND	0.566	ND	ND
5/13/2021	9:15	Cooper Creek	VL MB	99.2	9.91	450.4	15.3	7.69	1.31	36.9	ND	6	ND	0.16	2.03	2.19	0.28	0.30	0.125	ND	ND	ND	0.117	ND	ND
5/13/2021	10:27	Mill Creek 2	VL MB	105.6	10.64	498	15.7	8.40	115.00	214.3	ND	11	ND	0.20	0.63	0.83	0.27	0.26	0.122	1.194	ND	ND	0.290	ND	ND

ND = Nondetect

Table 13A.4 – Benthic Monitoring Data for TMDL Streams during FY21 Reporting Period

Station ID	Site Name	Date	Eco-region	QC	Habitat Score	Collection	TMI	Comments	HUC	X Coordinate	Y Coordinate
SEVEN003.8DA	Sevenmile 2	8/5/2020	71h		119	SQKICK	24		TN05130202007_1450	-86.74180	36.06350
SEVEN000.2DA	Sevenmile 1	8/11/2020	71h		134	SQKICK	28		TN05130202007_1400	-86.71370	36.09860
FINLE000.1DA	Finley Branch	8/13/2020	71h		117	SQKICK	32		TN05130202007_0300	-86.70850	36.10970
SIMS000.2DA	Sims 1	8/19/2020	71h		126	SQKICK	24		TN05130202007_0150	-86.69540	36.15700
SIMS000.8DA	Sims 2	8/25/2020	71h		142	SQKICK	24		TN05130202007_0100	-86.68340	36.15210
COOPE001.5DA	Cooper Creek	9/17/2020	71h		134	SQKICK	24	Ambient	TN05130202209_1000	-86.71390	36.20880
PAGES001.0DA	Pages Branch	9/18/2020	71h		136	SQKICK	18	Ambient (chemical data 09/17/2021)	TN05130202202_1000	-86.77250	36.20780
MILL005.3DA	Mill Creek 2	9/23/2020	71h		150	SQKICK	22	Ambient	TN05130202007_2000	-86.72230	36.12430
CJO000.1DA	Cathy Jo Branch	9/23/2020	71h		118	SQKICK	26		TN05130202007_1490	-86.72660	36.08530
CJO000.9DA	Cathy Jo Zoo	9/25/2020	71h		135	SQKICK	16		TN05130202007_1490	-86.74350	36.08900
MILL003.3DA	Mill Creek 1	9/28/2020	71h		139	SQKICK	22		TN05130202007_1000	-86.71310	36.14530
COOPE001.5DA	Cooper Creek	5/13/2021	71h		126	SQKICK	26	Ambient	TN05130202209_1000	-86.71390	36.20880
PAGES001.0DA	Pages Branch	5/19/2021	71h		139	SQKICK	18	Ambient (chemical data 05/13/2021)	TN05130202202_1000	-86.77240	36.20790
PAGES001.0DA	Pages Branch	5/19/2021	71h	Duplicate	141	SQKICK	18	Ambient (chemical data 05/13/2021)	TN05130202202_1000	-86.77240	36.20790
HURRI000.26DA	Hurricane Creek	5/25/2021	71i		157	SQKICK	34		TN05130203036_1000	-86.56290	36.03510
LHARP000.6DA	Little Harpeth	5/26/2021	71h		134	SQKICK	24		TN05130204021_1000	-86.91940	36.05120
LHARP000.6DA	Little Harpeth	5/26/2021	71h	Duplicate	----	SQKICK	22	Duplicate sample only	TN05130204021_1000	-86.91940	36.05120
MILL005.3DA	Mill Creek 2	6/1/2021	71h		146	SQKICK	24		TN05130202007_2000	-86.72230	36.12430
FINLE000.1DA	Finley Branch	6/7/2021	71h		118	SQKICK	24		TN05130202007_0300	-86.70850	36.10970
FINLE000.1DA	Finley Branch	6/7/2021	71h	Duplicate	----	SQKICK	22	Duplicate sample only	TN05130202007_0300	-86.70850	36.10970
CJO000.1DA	Cathy Jo Branch	6/14/2021	71h		114	SQKICK	18		TN05130202007_1490	-86.72660	36.08530
CJO000.1DA	Cathy Jo Branch	6/14/2021	71h	Duplicate	122	SQKICK	----	Duplicate habitat only	TN05130202007_1490	-86.72660	36.08530
SEVEN000.2DA	Sevenmile 1	6/15/2021	71h		130	SQKICK	24		TN05130202007_1400	-86.71380	36.09840
SEVEN003.8DA	Sevenmile 2	6/15/2021	71h		136	SQKICK	24		TN05130202007_1450	-86.74180	36.06350
MILL003.3DA	Mill Creek 1	6/17/2021	71h		139	SQKICK	28		TN05130202007_1000	-86.71310	36.14530
SIMS000.2DA	Sims 1	6/21/2021	71h		118	SQKICK	26		TN05130202007_0150	-86.69540	36.15700
SIMS000.8DA	Sims 2	6/23/2021	71h		113	SQKICK	26		TN05130202007_0100	-86.68340	36.15210

4.0 Supporting Program Data

The following is supplemental data that supports Metro Nashville's MS4 Permit Compliance:

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Various Stats Tracked for the Water Quality Improvement Project with the Cumberland River Compact as of the Date the Annual Report was Compiled 80
Example Meeting Minutes from the Stormwater Management Committee during FY21 81
NPDES Public Education Events/Presentations during FY21 94
Metro Department of Public Works Waste Collection During FY21 102
Metro Department of Public Works Hazardous Spills Responses During FY21 103
Metro's SCM Inspection and Maintenance Workshop for Property Management Companies 104
NPDES 2021 Flood Response Investigations Summary 105

Examples of MWS Stormwater Social Media Posts in FY21

Metro Water Services @NashvilleMWS · Jun 22

HOAs are invited to attend our Virtual Stormwater Control Measure Inspection & Maintenance Workshop, 6/24/2021, 9-10:30am. Learn about your responsibilities to maintain, inspect, & report on shared property features that collect and filter rain runoff. rebrand.ly/SCMWorkshop_Ne...

2 3

Metro Water Services @NashvilleMWS · Jun 9

We had a great time with Leadership Academy Campers @CampWarnerPark talking about what we can all do to keep our creeks and streams clean. #SummerCamp #GetOutside #CleanCreek #PollutionPrevention

2

Examples of MWS Stormwater Social Media Posts in FY21 (Continued)

Metro Water Services @NashvilleMWS · Jun 7

We got to spend some of this weekend talking TN Smart Yards w/ the Second Sunday Gardeners. Find out how you can get smart yard certified and help protect our neighborhood creeks and streams here: tnyards.utk.edu #TNSmartYards #gardening #CleanStream #GetOutside

2

Metro Water Services @NashvilleMWS · Jun 4

Yesterday, MWS was at @owlshill Summer Camp with a hands-on activity about what we can all do to keep our creeks & streams clean. #CleanStream #SummerCamp #waterpollution #STEM #GetOutside #OwlsHill

6

Examples of MWS Stormwater Social Media Posts in FY21 (Continued)

Various Stats Tracked for the Water Quality Improvement Project with the Cumberland River Compact as of the Date the Annual Report was Compiled

MWS/CRC Partnership Agreement	Current Project		
Data as of: 08/05/2021	05/06/20 - 05/05/25		
Partnership Progress Summary Table	W-QIP		
WQIP Goal Criteria	W-QIP Goal	Current # Done	% Done
Facilitate rain garden builds	50	44	88%
Facilitate planting of trees 1" or greater	2500	2511	100%
Educate Davidson County residents about green infrastructure & reach Title 1 school students with stream ecosystem education	15000	8973	60%
Recreation Opportunities on the River (People engaged)	10000	93	1%
Facilitate the adoption of stream segments	25	9	36%
Remove impermeable pavement (reporting square footage removed)	NA	19000	NA
Stream Cleanup Requests Received	NA	17	NA
Stream Cleanup Events Held	160	40	25%
Stream Banks Stabilized (linear ft)	250	505	202%
start date = end date =			

Example Meeting Minutes from the Stormwater Management Committee during FY21

JOHN COOPER
MAYOR

METROPOLITAN GOVERNMENT OF NASHVILLE AND DAVIDSON COUNTY

DEPARTMENT OF WATER AND SEWERAGE SERVICES
Development Services
800 Second Avenue South
P.O. Box 196300
Nashville, Tennessee 37219-6300

Minutes
of the
Stormwater Management Committee (SWMC)
May 6, 2021
* * * * * * * * * * * *
8:15 AM
700 Second Avenue South
Howard Office Building, Sonny West Conference Center

STORMWATER MANAGEMENT COMMITTEE
(Quorum Required: Four Members)
Committee Members Present:
Mr. Dodd Galbreath –Chair
Ms. Anna Maddox, P. E. – Vice Chair
Ms. Carrie Stokes, P. E.
Mr. Roy Dale, P. E.
Mr. Trey Lewis
Mr. Kabir Sandhu, P. E.

Committee Members Absent:
Ms. Ronette Adams-Taylor

I. CALL TO ORDER

Mr. Dodd Galbreath, (chair) called meeting to order at 8:15 a.m.

II. APPROVAL OF JANUARY 7, 2021 MEETING MINUTES & DECISION LETTERS

A motion was made by Ms. Anna Maddox and seconded by Ms. Carrie Stokes on approval of January 7, 2021 minutes & decision letter as presented. Mr. Dodd Galbreath, Ms. Maddox, Ms. Stokes, Mr. Trey Lewis, Mr. Kabir Sandhu, and Mr. Roy Dale voted in favor of the motion. The motion carried.

New members of the Stormwater Management Committee, Mr. Trey Lewis and Mr. Kabir Sandhu were welcomed to the first in-person meeting. Members give a brief introduction of themselves.

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

Example Meeting Minutes from the Stormwater Management Committee during FY21 (Continued)

III. STORMWATER MANAGEMENT COMMITTEE AGENDA

Comments were solicited from the Planning and Codes Departments for the following Agenda items.

1. 202100003 Lake Providence Missionary Baptist Church
5891 Nolensville Pike — APN 17200007900
Inspector: (Kenneth Tranter) — CD-04 (Robert Swope)

APPLICANT'S REQUEST: Request is to appeal the adverse decision of Metro Water Services (MWS) National Pollutant Discharge Elimination System (NPDES) Program regarding a Notice of Non-Compliance (NON) to Lake Providence Missionary Baptist Church, located at 5891 Nolensville Pike, Nashville, TN 37211 for disturbance of a regulated stream buffer. The no-disturb stream buffer requirements went into effect as a result of the original development activity under grading permit 2001-096.

A Notice of Non-Compliance was presented to Lake Providence August 14, 2020 informing the church that it was in violation of no-disturb stream buffer requirements that went into effect as a result of the original development activity under grading permit 2001-096. Notice stated, "cutting the trees disturbed a regulated stream buffer" and was in direct violation of Metro Nashville Stormwater Management Manual Section 6.9. The Appellant is appealing the decision of Metro Water Services.

APPELLANT: Lake Providence Missionary Church, Inc.
REPRESENTATIVE: James B. Johnson (Attorney)
COMMENTS:
SW STAFF: Case to be presented by staff
CODES: No comment provided
PLANNING: No comment provided
GREENWAYS: No comment provided

Ms. Rebecca Dohn and Ms. Liz Stienstraw (Metro Water Services) give history and timeline on the case of Lake Providence Missionary Baptist Church. Ms. Dohn discussed the original variance for the location which was to allow the clearing of the stream buffer and or floodway and floodway buffer along Whittemore Branch and stated that variance was approved.

Ms. Liz Stienstraw issued a Notice of Non-Compliance to Lake Providence on August 14, 2020 informing the church that it was in violation of no-disturb stream buffer requirements that went into effect as a result of the original development activity under grading permit 2001-096. Notice stated, "cutting the trees disturbed a regulated stream buffer" and was in direct violation of Metro Nashville Stormwater Management Manual Section 6.9.

Ms. Stienstraw concluded that "corrective action was required to include restoration of the disturbed stream buffer." The Storm Water Division instructed Lake Providence to implement the following corrective actions:

Example Meeting Minutes from the Stormwater Management Committee during FY21 (Continued)

Submittal of a buffer restoration plan to her office by September 14, 2020. The restoration plan shall be prepared by a registered Landscape Architect (LA) and must include the replanting of at least 238 native trees to offset the tree removal. It was noted by Ms. Stienstraw that, the plan should detail a specific timeline for when the tree replacement schedule will be completed and shall detail 75 percent survivability of plantings through two full growing seasons. Replacement trees should be nursery stock, at least 1.5 inches DBH, and 6 feet tall. Understory and ornamental trees can be 1-inch DBH and 5 feet tall.

Pastor Bruce Maxwell (Pastor of Lake Providence Missionary Baptist Church), Attorney James Johnson (representing attorney), and Mr. Clyde Rountree (Rountree & Associates), spoke on the location of 5891 Nolensville Pike. Pastor Maxwell stated that, on March 3, 2020, a severe tornado hit the city of Nashville, and several severe storms occurred in the city between the time March 2020 and June 2020. As a result of the storms, the stream in front of the property of Lake Providence Missionary Baptist Church overflowed on several occasions, washing away some of the embankment in the stream, weakening the soil system, and causing some trees inside the stream buffer to fall.

Pastor Maxwell went further to state that, the first Sunday of May 2020, another storm went through the area and uprooted trees, broke several trees in half, blew the roof off the church and caused other damage to the property and stream. However, the problems that were described to the SWMC on October 15, 2002 were still present in May 2020 and had become worse after the recent storms that occurred in the area. It was concluded that the damages from the storms had created a safety hazard to the property, people visiting the property and the stream itself. Therefore, it was concluded that the damaged trees and others needed to be removed.

Pastor Maxwell asked the committee to notice the following: 1) Lake Providence acted in good faith and attempted to obtain consent from the agency it believed had jurisdiction over the stream buffer. TDEC's representative met with the Lake Providence representatives and gave verbal consent to cut down the trees. 2) After receiving the Notice of Non-Compliance from MWSSD, Lake Providence continued to operate in good faith as it hired a landscape architect who prepared a buffer restoration plan in accordance with Section 6.9.6.1 of the Stormwater Management Manual. 3) Lake Providence's proposal cost for the church was between $19,600 and $24,600. However, MWSSD's required replanting will cost for the church was between $41,650 and $50,575. (Tables were submitted for review). 4) MWSSD's only objection to the Lake Providence restoration plan was that, Lake Providence's plan recommended the replanting of 74 trees instead of the 238 trees recommended by MWSSD. Noting neither plan will achieve significant restoration of the stream buffer. 5) MWSSD's suggested number of 238 replacement trees appears to be arbitrary and capricious when using the formulas identified by MWSSD. The RTR formula appears to be subjective as MWSSD has not provided Lake Providence with any evidence which establishes that "Metro's tree replacement schedule" is reliable authority for determining the RTR. Hence, the RTR numbers are not reliable and should be negotiable.

Example Meeting Minutes from the Stormwater Management Committee during FY21 (Continued)

Stormwater Management Committee
May 6, 2021
Page 4

Mr. Rountree stated that he prepared a Conceptual Landscape Plan that was supported with detailed written notes. Under his plan, Lake Providence would provide a two-year survival guarantee. The planting will occur during optimal planting season. Also, the newly planted trees will be installed by professional landscape contractors who will comply with industry standards. The plan proposes to install slope stabilizing grasses to shore up the embankment's erosion and provide filtration and shade to the stream buffer.

Mr. Rountree stated, the plan addresses all of the following: scope of work, inspection and approval, job conditions, materials (including topsoil, planting mix), seed, sod, mulch, fertilizer, and the establishment of grass to all the disturbed areas in the site.

Mr. Johnson stated to the committee that Lake Providence did receive consent to remove the trees, however that consent was given to them by Tennessee Department of Environment and Conservation ("TDEC") and realized later that this is not who was needed to contact for this matter.

Mr. Johnson went further to state that at today's meeting was the first time that he has heard the word compromise from Metro Water and its staff and would like to take a further look at what is being proposed.

The Committee Members were advised of comments sent into Metro Water on variance # 202100003 Lake Providence Missionary Baptist Church and that these comments were provided to them for review. Mr. Steve Mishu (Metro Water Services) noted that all comments were in favor of the church replacing trees at the location.

Mr. Roy Dale stated that he felt one of the things that the committee members needed to examine is what is necessary to restore the tributary.

After discussion during the Executive Session of the Committee on May 6, 2021 and review of the information presented Mr. Dodd Galbreath made a motion to defer and Mr. Roy Dale seconded the motion. Ms. Carrie Stokes, Ms. Anna Maddox, Mr. Dale, Mr. Trey Lewis, Mr. Kabir Sandhu, and Mr. Galbreath voted in favor of the motion. The motion carried.

The applicants are to work with staff to see if a compromise can be met.

NOW THEREFORE, it is the decision of the Committee that the request in Variance Request No. 202100003 as set out above and further described in the case record, be and is hereby **DEFERRED."**

2. 202100004 The Farm at Natchez Trace
9479 Highway 96 — APN 178000003400
Inspector: (Leigh Nelson) — CD-35 (Dave Rosenberg)

Given some confusion regarding their site's Grading Permit-related buffer provisions, the site was found to be mowing "no-disturb" areas of their buffer as a normal course of site maintenance (during a stormwater control measure inspection).

Example Meeting Minutes from the Stormwater Management Committee during FY21 (Continued)

APPLICANT'S REQUEST:
1. Stream buffer disturbance
2. Continuous mowing & maintenance of the buffer

APPELLANT: Linda F. Burnsed.
REPRESENTATIVE: Skip Heibert (Heibert + Ball Land Design, LLC)
COMMENTS:
SW STAFF: No comment provided
CODES: No comment provided
PLANNING: No comment provided
GREENWAYS: No comment provided

Mr. Michael Hunt (Metro Water Services) gave staff comments and brief background for the location of The Farm at Natchez Trace. Mr. Hunt stated that the location has some historical usage of what was a zone one buffer that owner was unaware had to end once site was developed. Instead of allowing the area to grow-up some mowing was taking place.
Mr. Hunt went further to state that the property has been and is currently being used as a pet boarding facility. The area along the stream is used to walk dogs during their stay at the facility. It is a policy of the facility that the pets are always walked on a leash and the handlers always carry plastic bags to pick up any solid waste. The pets are never left unattended. This is a very important component of the day to day operations of the facility. The area is mowed to allow access for this activity.

Ms. Linda Burnsed (Appellant) and Mr. Skip Heibert (Heibert + Ball Land Design, LLC) spoke on the location of 9479 Highway 96. Ms. Burnsed gave background of the property and her usage of the location when first purchased in 1999. When property was purchased, Little East Fork Road was still in use and was an asphalt surface road. Ms. Burnsed stated that she ceased use of the road, the majority of the asphalt was removed, and the roadbed was scarified, and is currently a grassed area which now helps filter and slows any runoff from the abandoned road bed into the stream.

Ms. Burnsed made note as well that the handlers carry plastic bags to pick-up any solid waste and that the area is mowed to allow access for this activity. Ms. Burnsed stated that she would like to be able to continue the mowing and maintenance in the area and proposed some planting to provide additional filtration along the steam.

Mr. Heibert stated that he has six mitigation measures for the site which include:
1. A detention/ bio pond which was installed in 2014 during the construction of the new barn (Grading Permit #201400113) providing natural infiltration and detention.
2. Soil and turf have been installed over the existing asphalt roadbed. This provides a pretreatment filter for runoff drainage toward the creek.
3. Indigenous species will be planted at the inlet of the bio pond to provide additional filtration of runoff from the large bio pond.
4. River rounds (4"-6" diameter) will be installed at the inlet and outlet of the culvert from the bio pond to the river to provide additional filtration and dissipate the energy of the water flow.
5. Additional indigenous plantings along stream bank are proposed for planting to provide additional filtration along the steam.
6. All existing trees will remain undisturbed. No trees will be removed.

Example Meeting Minutes from the Stormwater Management Committee during FY21 (Continued)

After discussion during the Executive Session of the Committee on May 6, 2021 and review of the information presented Mr. Roy Dale made a motion to approve as presented with the following standard Conditions # 1-2 and Mr. Trey Lewis seconded the motion. Ms. Carrie Stokes, Ms. Anna Maddox, Mr. Dale, Mr. Lewis, Mr. Kabir Sandhu, and Mr. Dodd Galbreath voted in favor of the motion. The motion passed.

1. The Appellant shall have the landscaper who installs the required mitigation plantings to certify to the MWS Stormwater – NPDES Office, in writing (referencing Variance #202100004), once plantings are installed per approved variance plans, and again once plantings have been found to meet a two full growing season requirement. The owner shall maintain a minimum of 75 percent survivability of plantings through two full growing seasons.

2. This variance will expire on May 6, 2022. However, if a Grading Permit, Stormwater Single Family Permit, or Building Permit is issued within that period, the variance expiration date will run concurrent with that permit expiration date. The variance is valid only so long as the plan presented to the Stormwater Management Committee does not change.

NOW THEREFORE, it is the decision of the Committee that the request in Variance Request No. 202100004 as set out above and further described in the case record, be and is hereby **GRANTED."**

V. ITEMS OF BUSINESS

SR# 830338 Resolution Letter-5135 Hickory Hollow Parkway (Lynda Kelley – Metro Water). Ms. Kelly gave update on 2020 Buffer and Floodplain Monitoring Report for the location of 5135 Hickory Hollow Parkway which was approved under variance #201700004.

A Notice of Violation (NOV) and Stop Work Order (SWO), SR# 830338, was issued to the site on February 1, 2017 (with a $1,400 penalty) for the following violations:

1. Grading/Filling without Permit
2. Inadequate Erosion/Sediment Controls
3. Buffer Disturbance
4. Clearing of 12+/- acres of property located in the floodway

Owners BDY Environmental met with the Metro Stormwater staff and discuss the Long-Term Maintenance Plan, Declaration of Restrictions and Covenants, and Greenways Conservation easement. Additionally, BDY and stormwater staff discussed revisions to the original *Buffer and Floodplain Restoration Plan* dated March 1, 2017. The revisions were based upon site observations by both BDY and Metro after a flood event that occurred on April 22, 2017 and recent natural regeneration and stabilization observed within the limits of the disturbed area since the issuance of the variance.

Ms. Kelly stated that as outlined in the long-term maintenance plan, BDY conducted monitoring on October 16, 2020 within the previously disturbed areas to document the density of sapling in these areas and determine if the total number of volunteer saplings and planted trees were more than 75% of the initial number of planted trees. This inventory was documented to show the previously disturbed area is undergoing natural succession and is transitioning back into a forested floodplain.

Example Meeting Minutes from the Stormwater Management Committee during FY21 (Continued)

Stormwater Management Committee
May 6, 2021
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Fontanel – Update (Michael Hunt – Metro Water)
Mr. Michael Hunt spoke on the " Floodway Impact Terms Agreement" between Metro Water Service Stormwater and Fontanel per Metro Stormwater Management Committee Variance #202000014 – Condition #9; which went into effect 5/1/2021 "The applicant shall coordinate with Stormwater Staff on the frequency, duration, and size of events that would be allowed to utilize parking within the floodplain and floodway stream buffers of White's Creek."

The Agreement states:

- 48 Impact Days per year will be permitted in each of the Floodway Impact Zones as depicted on exhibit A-1 (which was a part of slide presented).
- The parking of vehicles or motorcycles shall not be permitted in Field A.
- The owner shall make best efforts to place food trucks and portable toilets away from Whites Creek and the associated buffer.

Records of the date of the impact day and which Floodway Buffer Zone was utilized shall be kept by Fontanel's Event Manager and sent to Stormwater Management staff on a quarterly basis. Beginning May 1, 2022, an annual meeting shall be held on site with Fontanel's Event Manager and Stormwater Management staff to review the years activities and reports. The agreement terms shall remain in place for a period of three years and thereafter may be amended or revised with agreement from both parties. Mr. Hunt stated that condition #9 is now met.

River North – Update (Steve Mishu – Metro Water)
Mr. Mishu spoke on Variance #202000001which was presented before the committee on several occasion in 2020 requesting uncompensated fill in the flood plan. At the last meeting that the case was placed on the agenda, it was deferred, and appellant decided not to return to the committee.

Mr. Mishu stated that River North at the location of 520 Cowan Street has a buyer for the property and according to report will not be looking to go before the committee for a variance based on discusses with the new designer.

FEMA Flood Insurance Changes (Roger Lindsey – Metro Water)
Mr. Lindsey spoke on articles referencing Risk Rating 2.0 and its effects on the rising cost of Flood Insurance. The National Flood Insurance Policy (NFIP), which is run by the Federal Emergency Management Agency, is overhauling its methodology for setting flood insurance prices for the first time in about 50 years. Starting Oct. 1, premiums for new NFIP policies will be based on individual properties' flood risk and the estimated cost of rebuilding those properties if flood damage occurs.

Mr. Lindsey went further to state that, about 95% of current policyholders in Tennessee will see their premiums decrease or increase by $20 or less per month under the new system, according to FEMA. In Tennessee, FEMA expects Risk Rating 2.0 will decrease premiums for 28% of the state's existing flood insurance policies. About 59% are expected to see an average premium increase of $0 to $10 per month (or $0 to $120 per year).

Example Meeting Minutes from the Stormwater Management Committee during FY21 (Continued)

Mr. Lindsey stated that there is work being done in congress on affordability to find ways to make flood insurance more accessible.

Ethics Training (Theresa Costonis – Metro Legal)
Ms. Costonis stated that the refresh on Ethics Training was recommended by the "Mayors Taskforce on Integrity" and to be presented to all metro boards and committees. Ms. Costonis discussed the six "Goals of Training" which are:

1. Understand that you cannot accept benefits related to your role on the board.
2. Understand when you may be biased or have a conflict and should recuse yourself.
3. Remember to disclose knowledge you have received about an agenda item from outside the meeting.
4. Remember to articulate the specific reasons and basis for your decision.
5. Understand that the Open Meetings Act prohibits deliberation outside board meetings & Public Records Act makes almost all your emails open to the public.
6. Understand best practices for making informed decisions.

VI. ADJOURNMENT

Mr. Roy Dale made a motion to adjourn the May 6, 2021Stormwater Management Meeting and seconded by Ms. Anna Maddox. Mr. Trey Lewis, Ms. Carrie Stokes, Ms. Maddox, Mr. Dale, Mr. Kabir Sandhu, and Mr. Dodd Galbreath voted in favor of the motion. The motion passed.

The meeting adjourned at 12:00 p.m.

Metropolitan Stormwater Management Committee
Approved:

By: Peninsula Gilbert
Secretary

Date: 07/01/2021

MWS Classroom-Based Public Education Program Activities during FY21

Metro Water Services Programs & Activities

Report Dates: From 7/1/2020 to 6/30/2021

87 Programs/Activities **881 Students** **157 Adults**

ActivityType: Classroom Program **50 Programs/Activities**

TOTAL Classroom Program **50 Programs/Activities** **733 Students** **Adults**

Career Fair		**2 Programs/Activities**		**70 Students**	**Adults**
12/1/2020	Overton High Panel for student questions	1	20		
3/25/2021	MNPS ALL SCHOOLS Engineering, Manufacturing, and Industrial Tech Career Fair panel	1	50		
Careers in Water		**1 Programs/Activities**		**20 Students**	**Adults**
2/26/2021	Whitsitt Elem. Engineering Week programs	1	20		
Job Shadow - virtual		**1 Programs/Activities**		**20 Students**	**Adults**
3/1/2021	Overton High Engineering Class	1	20		
Mock Interviews		**5 Programs/Activities**		**Students**	**Adults**
3/31/2021	Overton High	5		High school	
Special School Program		**11 Programs/Activities**		**188 Students**	**Adults**
11/9/2020	Overton High Engineering Class water utility presentation	2	60		
11/19/2020	Special Group Student Capstone Presentation to MWS panel	1	1		
2/9/2021	McMurray Middle i3 STEM club	1	15		
2/25/2021	GirlScouts Wonders of Water Journey badge program	1	15		
3/25/2021	Overton High Virtual Q&A session, Foundations of Technology class	3	60		
4/1/2021	GirlScouts Wonders of Waterjourney program	1	15		
4/9/2021	Margaret Allen Middle Moves and Groves afterschool program	1	15	Middle School	
4/27/2021	McMurray Middle i3 STEM project presentations by students	1	7	middle school	
The Water Cycle & Me		**30 Programs/Activities**		**435 Students**	**Adults**
7/9/2020	Special Group Owls Hill Summer Camp	3	24		

Friday, September 24, 2021 Page 1 of 5

MWS Classroom-Based Public Education Program Activities during FY21 (Continued)

7/16/2020	Special Group Owls Hill Nature Sanctuary summer camp	3	24	
7/23/2020	Special Group Owls Hill Nature Center Summer Camp	3	24	elementary
7/30/2020	Special Group Owls Hill Summer Camp	3	21	
6/3/2021	Special Group Owls Hill Nature Sanctuary Summer camp	1	20	Elementary - Middle
6/9/2021	Special Group LeadershipAcademy Camp Warner Park	3	60	6-12 years old
6/10/2021	Special Group Owls Hill Nature Sanctuary Summer Camp	1	25	6-12 years old
6/14/2021	Special Group Community Center program with Outdoor Recreation/Parks	1	10	middle school
6/16/2021	Special Group Leadership Academy Warner Park Summer Camp	2	40	elementary
6/17/2021	Special Group Owls Hill Nature Sanctuary Summer Camp	1	25	
6/21/2021	Special Group Martha O-Bryan Center Summer Camp at Explore Community School	2	30	middle school
6/21/2021	Special Group Community Center water program at Hamilton Creek Rec Area	1	12	
6/23/2021	Special Group Leadership Academy Warner Park Summer Camp	3	60	Elementary - middle
6/30/2021	Special Group Leadership Academy Camp Warner Park	3	60	elementary - middle

ActivityType: Teacher Professional Development — **2 Programs/Activities**

TOTAL Teacher Professional Development — **2 Programs/Activities** — **Students** — **38 Adults**

Teacher Professional Development	**2 Programs/Activities**		**Students**	**38 Adults**
7/8/2020	Teachers Urban Green Lab Professional Development for Teachers: Sustainability and MWS	1		18
6/27/2021	MNPS ALL SCHOOLS STEAM Partnership Opportunities -MNPS conference	1		20

ActivityType: Tour — **17 Programs/Activities**

TOTAL Tour: Virtual Biosolids — **1 Programs/Activities** — **10 Students** — **Adults**

Biosolids Virtual Tour: Students	**1 Programs/Activities**		**10 Students**	**Adults**
3/30/2021	Lipscomb Academy (HS) Ignite STEM	1	10	

TOTAL Tour: Virtual KRH — **4 Programs/Activities** — **5 Students** — **60 Adults**

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MWS Classroom-Based Public Education Program Activities during FY21 (Continued)

KRH Virtual Tour: College		**3 Programs/Activities**		**Students**	**60 Adults**
8/3/2020	Special Group SAE Environmental Science class	1			20
8/4/2020	Special Group SAE Environmental Science Class	1			20
4/21/2021	University: Nashville State Community College Electrical Engineering Technology	1			20
KRH Virtual Tour: Students		**1 Programs/Activities**	**5 Students**		**Adults**
3/9/2021	Lipscomb Academy (HS) Ignite STEM	1	5		
TOTAL Tour: Virtual WCWWTP		**10 Programs/Activities**	**117 Students**		**44 Adults**
WCWWTP Virtual Tour: College		**4 Programs/Activities**		**Students**	**44 Adults**
10/7/2020	University: Belmont University	1			12
10/8/2020	University: Belmont University	1			12
3/8/2021	Belmont University ENV-1155-1SL: Intro to Environmental Sci Lab	1			15
4/17/2021	Special Group : CWEA-AWWA student banquet, Cal Poly (CSU)	1			5
WCWWTP Virtual Tour: Students		**6 Programs/Activities**	**117 Students**		**Adults**
10/15/2020	Special Group After School program	1	10		
11/30/2020	Vanderbilt School of Science & Math (High Schoo	1	30		
3/24/2021	Hume Fogg High Magnet APES class	1	27		
3/30/2021	Hume Fogg High Magnet APES class	1	29		
4/12/2021	Overton High ISR class	1	20		
4/30/2021	MNPS ALL SCHOOLS Tutor and student	1	1		
TOTAL Tour: WTP		**1 Programs/Activities**	**8 Students**		**Adults**
K.R. Harrington Tour: Students		**1 Programs/Activities**		**8 Students**	**Adults**
6/22/2021	Special Group MWS interns	1	8		
TOTAL Tour: WWTP		**1 Programs/Activities**	**8 Students**		**Adults**
Whites Creek Tour: Students		**1 Programs/Activities**		**8 Students**	**Adults**
6/28/2021	Special Group MWS interns	1	8		

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MWS Classroom-Based Public Education Program Activities during FY21 (Continued)

ActivityType:	**Tout**		**1 Programs/Activities**	
TOTAL Tour: Virtual Biosolids	**1 Programs/Activities**		**Students**	**15 Adults**
Biosolids Virtual Tour: College	**1 Programs/Activities**		**Students**	**15 Adults**
10/20/2020	David Lipscomb Univsersity	1		15
ActivityType:	**Virtual Programming**		**17 Programs/Activities**	
TOTAL Materials Development	**17 Programs/Activities**		**Students**	**Adults**
Virtual Program Development	**17 Programs/Activities**		**Students**	**Adults**
7/10/2020	Special Group Responsible water play video for Kidsville At Home Facebook series	1		
8/10/2020	MNPS ALL SCHOOLS Careers: Engineers - Words of Wisdom	1		
8/10/2020	MNPS ALL SCHOOLS Careers: Utility Field Technician	1		
8/10/2020	MNPS ALL SCHOOLS Careers: HS Job Shadow Orientation: MWS Intro	1		
8/10/2020	MNPS ALL SCHOOLS Careers: Engineers - A Typical Day	1		
8/10/2020	MNPS ALL SCHOOLS Careers: Engineers - Interests and Career Paths	1		
8/10/2020	MNPS ALL SCHOOLS Careers: HS Job Shadow Orientation: Professionalism	1		
8/10/2020	Special Group Kidsville: Responsible Water Play	1		
8/14/2020	MNPS ALL SCHOOLS Careers: MWS Job Sites and Sounds	1		
8/19/2020	MNPS ALL SCHOOLS Pitts Dog Park Project and SCM	1		
9/16/2020	MNPS ALL SCHOOLS Careers: MWS Careers	1		
9/22/2020	MNPS ALL SCHOOLS Careers: Overview of MWS jobs	1		
9/23/2020	MNPS ALL SCHOOLS Careers: Laboratory Careers	1		
9/24/2020	MNPS ALL SCHOOLS Careers: Safety Inspector	1		
9/30/2020	MNPS ALL SCHOOLS Watersheds and non-point source pollution	1		
10/26/2020	MNPS ALL SCHOOLS Fire Hydrant Math	1		

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MWS Classroom-Based Public Education Program Activities during FY21 (Continued)

10/26/2020	MNPS ALL SCHOOLS How a Fire Hydrant Works	1

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NPDES Public Education Events/Presentations during FY21

Date	Event	Education Type	Estimated Audience #	Audience	Target Audience/ Pollutant	Notes
6/24/2021	SCM Inspection and Maintenance Virtual Workshop	Presentation	50	Property Management Companies and HOAs	SCM Inspection/Maintenance	MWS Stormwater NPDES SCM Inspection & Maintenance Oversight Program Staff presented a virtual presentation to property management companies and HOAs on the inspection and maintenance requirements.
6/24/2021	Smart Gardening in the Summer	Presentation	6	Nashville residents through Nashville Seed Exchange	General Stormwater Pollution	As the summer heat builds and plants are growing, we will look into some ways to make the most of the rain we do get, continue to care for our plants and soil, and welcome native wildlife without panicking about our garden's health. Metro Water Services w
6/19/2021	TN Smart Yards - Walking and Certifying Class	Public/Group Meeting	4	Nashville residents	General Stormwater Pollution	Julie Berbiglia teaches yard and gardening tips on how residents can improve their yard to help improve water quality. Everyone was also given a free sample of MWS Music City Gold fertilizer.
6/17/2021	TN Smart Yards - Oak Valley Garden Club	Public/Group Meeting	12	Oak Valley Garden Club Members	General Stormwater Pollution	Julie Berbiglia, the Education Specialist for Metro Water, talked to the gardeners about certifying their yard as a Tennessee Smart Yard and presented the benefits to the environment.
6/5/2021	Second Sunday Gardeners	Public/Group Meeting	22	Second Sunday Gardener members	General Stormwater Pollution	Julie Berbiglia, the Education Specialist for Metro Water, talked to the gardeners about certifying their yard as a Tennessee Smart Yard and presented the benefits to the environment.
6/3/2021	Wise Watering - Neighbor to Neighbor	Presentation	10	12 South, NW Nashville, Bellshire, Lockeland Springs Residents	General Stormwater Pollution	Julie's Presentation: The average person uses 80-100 gallons of water a day. Using water wisely is especially important during the summer. Many homes double or triple their winter water use in the summer months. A majority is used for lawns and gardens, a
5/27/2021	Volunteer Gardener Episode #2918 - "Bare Root Tree Stock"	Tree/Urban Forestry	18268	TV Households	General Stormwater Pollution	Volunteer Gardener #2918 that featured the segment "Bare Root Tree Stock (Eric K. and the gravel tree growing bed)" broadcast on May 27th and May 30th on NPT. As of 6/15/21, there have been 626 views of the segment on the Volunteer Gardener You Tube Chan
5/26/2021	Stormwater Outreach via Social Media	Social Media Post	848	Twitter, Facebook, Instagram users	Fertilizer/Pesticides	Community Gardens Music City Gold: Our sustainable Music City Gold fertilizer donations are helping community gardens make their neighborhoods more sustainable. #communitygardens #nashville pic.twitter.com/7MihF1fDJa

NPDES Public Education Events/Presentations during FY21 (Continued)

Date	Event	Education Type	Estimated Audience #	Audience	Target Audience/ Pollutant	Notes
5/18/2021	Stormwater Outreach via Social Media	Social Media Post	1210	Twitter, Facebook, Instagram users	Fertilizer/Pesticides	Community Gardens with Music City Gold: Music City Gold is going to help the raised beds at the @NowatNPL in Hermitage flourish! #communitygardens #sustainability pic.twitter.com/wvKtRyeAbA
5/14/2021	Pool Discharge Complaint	Brochure/Door Hanger Distribution	1	Nashville Resident	General Stormwater Pollution	A complaint of pool water being discharged into the storm drains was submitted to NPDES. Allison Davis spoke with the pool owner and explained that water must be discharged after it is dechlorinated and filtered through a grassy area. The pool discharge bro
5/13/2021	Smart Gardening with TN Smart Yards Webinar	Presentation	16	Nashville residents	General Stormwater Pollution	Julie Berbiglia hosted Smart Gardening webinar focusing on TN Smart Yards and the benefits each person's yard can have to water quality.
5/13/2021	Stormwater Outreach via Social Media	Social Media Post	2393	Twitter, Instagram users	General Stormwater Pollution	TN Smart Yards Workshop: Andrea Ludwig, TN Smart Yards program director, is consulting with Cooper Creek neighbors on what they can do in their yard to improve the creek health. Learn how you can have a Tennessee Smart Yard: https://tnyards.utk.edu #Susta
5/10/2021	Herb Society Meeting: TN Smart Yards Program	Presentation	26	Herb Society	General Stormwater Pollution	Julie Berbiglia joined the Herb Society for their monthly meetings and presented on TN Smart Yards and how becoming a certified yard can help improve water quality in Nashville.
5/6/2021	Stormwater Outreach via Social Media	Social Media Post	657	Twitter, Facebook users	General Stormwater Pollution	TN Smart Yards Workshop: Curious about how to build a more sustainable garden and how to get TN Smart Yard Certified while doing it? Join us on May 13 for a TN Smart Yard lunch and learn. #gardening #Sustainability
5/4/2021	River Talks Podcast Interview on Urban Streams	Presentation	74	CRC Listeners	General Stormwater Pollution	Urban streams often face water quality challenges as they flow through densely populated urban areas. In River Talk podcast, Mary Bruce and Michael Hunt from Metro Water Services speak about the urban stream syndrome along with some of the opportunities
5/4/2021	Citizens Water Academy	Presentation	9	Citizens Water Academy Participants	General Stormwater Pollution	Josh Hayes presented an overview of the stormwater MS4 program to the Citizens Water Academy.
5/4/2021	Wise Watering with TN Smart Yards	Presentation	17	Nashville residents	General Stormwater Pollution	Julie Berbiglia co-hosted a Wise Watering webinar with Bellevue Library's Seed Exchange Program to discuss how becoming a TN smart yard certified yard can lead to cleaner waterways in Nashville and how to become certified.

NPDES Public Education Events/Presentations during FY21 (Continued)

Date	Event	Education Type	Estimated Audience #	Audience	Target Audience/ Pollutant	Notes
5/4/2021	Stormwater Outreach via Social Media	Social Media Post	906	Twitter, Facebook, Instagram, NextDoor users	General Stormwater Pollution	Healthy Streams 101/201 Announcement: We have 2800+ miles of creeks, streams, and rivers in Nashville! Together, we all play a role in keeping our waterways healthy. Healthy Streams 101 will point you toward actions we can all take. Healthy Streams 201
4/19/2021	Virtual Earth Day Photo Scavenger Hunt	Social Media Post	22	MWS Social Media	SCM Inspection/Maintenance	A social media photo scavenger hunt ,running from 4/19/2021 - 5/7/2021, to get the public involved in searching for SCM's in their neighborhood and learning about the importance of these structures for water quality and flood prevention. MWS social media
4/16/2021	AWRA	Presentation	46	AWRA attendees	General Stormwater Pollution	Julie Berbiglia co-presents with Andrea Ludwig from UT on 'Gaining Ground for Healthy Waterways with Sustainable Residential Landscapes'.
4/15/2021	Volunteer Gardener Episode #2913 - "Harpeth Conservancy"	Presentation	16482	TV households	General Stormwater Pollution	Volunteer Gardener #2913 that featured the segment "Harpeth Conservancy" broadcast on April 15th and April 18th on NPT. As of 6/15/21, there have been 652 views of the segment on the Volunteer Gardener You Tube channel.
4/15/2021	AWRA	Presentation	30	AWRA attendees	Pathogens	Veronica Logue presented on “evaluation of next generation sequencing for microbial source tracking in pathogen impaired streams” at AWRA.
4/13/2021	Beautification Commission Meeting	Presentation	28	Members	SCM Inspection/Maintenance	Julie Berbiglia, Matthew Lockhart, and Jessica Bell presented at the Beautification Commission Meeting on SCM maintenance requirements, inspections, and reporting. They also explained the importance to water quality maintaining SCM's has.
4/13/2021	Library Seed Exchange Talk	Presentation	21	Nashville residents	General Stormwater Pollution	Julie Berbiglia spoke about wise watering with TN Smart Yards and how this can protect neighborhood creeks and streams from rain runoff pollution.
4/8/2021	Farm Bureau Annual Meeting	Presentation	50	Insurance Agents, Board members	General Stormwater Pollution	Julie Berbiglia spoke at the Annual Farm Bureau Meeting focusing on TN Smart Yards which included an overview of a demo garden, rain gardens, and rain barrels.
4/6/2021	East Nashville Farmers Market	Educational Booth/Citywide Event	90	East Nashville residents	General Stormwater Pollution	MWS NPDES teamed up with Root Nashville at the East Nashville Farmers Market to educate the public on TN Smart Yards opportunities, maintaining a sustainable yard, and Music City Gold benefits. Samples of Music City Gold and stormwater educational brochure

NPDES Public Education Events/Presentations during FY21 (Continued)

Date	Event	Education Type	Estimated Audience #	Audience	Target Audience/ Pollutant	Notes
3/30/2021	Proprietary Device Roundtable Discussion	Presentation	12	MWS Development Services	SCM Inspection/Maintenance	Matthew Lockhart present findings and issues with inspection and maintenance of proprietary water quality devices.
3/26/2021	Nashville Downtown Farmers Market	Educational Booth/Citywide Event	60	Farmers Market Attendees	General Stormwater Pollution	MWS NPDES teamed up with Root Nashville at the Downtown Farmers Market to educate the public on TN Smart Yards opportunities, maintaining a sustainable yard, and Music City Gold benefits. Samples of Music City Gold and stormwater educational brochures
3/24/2021	Sustainability in the City	Presentation	80	Litter Program Attendees	Leaves/Brush/Trash Dumping	Veronica Logue spoke on "The Life of Litter in Our Environment and Ecological System" in Metro Public Work's Sustainability in the City program.
3/23/2021	TN Smart Yards e-blast/newsletter	Mail-out	274	Subscribers of TN Smart Yards Newsletter	General Stormwater Pollution	A newsletter focusing on TN Smart Yards education and updates was sent out via email to all subscribers.
3/20/2021	Richland Park Farmers market	Educational Booth/Citywide Event	80	west Nashville residents	General Stormwater Pollution	MWS NPDES teamed up with Root Nashville at the Richland Park Farmers Market to educate the public on TN Smart Yards opportunities, maintaining a sustainable yard, and Music City Gold benefits. Samples of Music City Gold and stormwater educational brochure
3/17/2021	Virtual Presentation for Roanoke Tree Webinar	Presentation	110	Professionals	General Stormwater Pollution	3/17/21-A virtual presentation was given for the annual Roanoke Tree Workshop talking about MWS's use of its urban forest as a stormwater control measure.
3/11/2021	Smart Gardening With Tennessee Smart Yards Webinar	Presentation	48	Davidson county residents	General Stormwater Pollution	In this webinar, the discussion surrounds TN Smart Yards and how they are diverse and can be all sizes and types. The one thing they have in common are sustainable practices that protect our neighborhood creeks, streams, and rivers from polluted rain runoff
3/4/2021	Tree Talk with the Nashville Tree Advisory Committee	Presentation	67	Tree Advisory Committee	General Stormwater Pollution	In this webinar that the Nashville Tree Advisory hosts, Julie speaks about TN Smart Yards and how they are diverse and can be all sizes and types. The one thing they have in common are sustainable practices that protect our neighborhood creeks, streams, a
2/25/2021	Smart Gardening with Tennessee Smart Yards Webinar	Presentation	65	Davidson County residents	General Stormwater Pollution	In this webinar, the discussion surrounds TN Smart Yards and how they are diverse and can be all sizes and types. The one thing they have in common are sustainable practices that protect our neighborhood creeks, streams, and rivers from polluted rain runoff

Date	Event	Education Type	Estimated Audience #	Audience	Target Audience/ Pollutant	Notes
2/10/2021	Creating a Smart Yard: Composting, Pollution Prevention, and Planting Native	Presentation	169	Davidson County residents	General Stormwater Pollution	In this webinar hosted by Public Works for promoting a more sustainable city, the discussion surrounds TN Smart Yards and how they are diverse and can be all sizes and types. The one thing they have in common are sustainable practices that protect our neighbors
2/1/2021	MS4 Discharge Education	Brochure/Door Hanger Distribution	1	Nashville Residents	General Stormwater Pollution	MWS received information that a mobile shower operation for homeless at this church near Neely's Bend and Gallatin may be dumping their tanks in the MS4. KT met with the site and was informed that they had been discharging the gray water to the MS4. KT e
1/28/2021	Smart Gardening With Tennessee Smart Yards Webinar	Presentation	74	Davidson County residents	General Stormwater Pollution	In this webinar, the discussion surrounds TN Smart Yards and how they are diverse and can be all sizes and types. The one thing they have in common are sustainable practices that protect our neighborhood creeks, streams, and rivers from polluted rain runoff
1/27/2021	Greening Nashville's Neighborhoods	Presentation	15	Private citizens	General Stormwater Pollution	In this presentation, Eric discussed basic tree biology and how trees impact stormwater runoff.
1/26/2021	Robertson Avenue Meeting	Public/Group Meeting	16	Robertson Avenue Industrial Sites	Sediment Runoff from Non-Construction	MWS Stormwater hosted a virtual meeting with four industrial sites on Robertson Avenue and TDEC members. Sediment track out complaints have been an ongoing issue with this area and a presentation was given by Josh Hayes illustrating the issue and impacts
1/23/2021	Adventures with a Purpose Water Quality Event	Educational Booth/Citywide Event	100	Nashville Residents	General Stormwater Pollution	MWS residential stormwater brochures were included in a packet that Adventures with a Purpose handed out at the Winter Water Quality Festival. The festival focused around the 20 cars that were pulled from the Cumberland River and the divers who are a part
12/16/2020	Neighborhood Leaf Dumping	Brochure/Door Hanger Distribution	1	West Meade Neighborhood	Leaves/Brush/Trash Dumping	AD spoke with Christina about the issues of dumping leaves into a waterway which she has been observing in her neighborhood in West Meade. She requested some public education to share with her community as she is part of a neighborhood association. AD pro

Date	Event	Education Type	Estimated Audience #	Audience	Target Audience/ Pollutant	Notes
12/15/2021	O-Ku Grease Issue	Brochure/Door Hanger Distribution	1	O-Ku Employees	Restaurant Impacts	Jessica Bell notified Kevin Turner that O-Ku located in Germantown had a messy dumpster area with grease overflowing onto the ground. The site is in the CSS, but their site has drains that connect to the Cumberland. KT went to the site and talked to the ma
12/9/2020	Leaf Dumping Complaint	Brochure/Door Hanger Distribution	1	Resident	Leaves/Brush/Trash Dumping	(12/9/2020) Complainant submitted another hub request stating the neighbor has continued to blow leaves into the ditch and roadway. AD responded and spoke with the neighbor who has been blowing the leaves and provided additional educational material. He e
11/19/2020	TN Smart Yards - Davidson County Master Gardeners	Public/Group Meeting	37	Master Gardeners	General Stormwater Pollution	Julie Berbiglia teaches yard and gardening tips on how residents can improve their yard to help improve water quality. Everyone was also given a free sample of MWS Music City Gold fertilizer.
11/16/2020	Peach Tree Landscaping Dumping	Brochure/Door Hanger Distribution	2	Peach Tree Landscaping Employees	Leaves/Brush/Trash Dumping	NPDES received a complaint by SW maintenance employee who observed an employee of Peach Tree Landscaping blowing grass clippings into a storm drain. AD reached out to the company managers explaining that all employees should be properly trained on how to
11/12/2020	Oil Dumping - Complaint	Brochure/Door Hanger Distribution	12	Forge Ridge Community	Oil and Grease	KT responded to a complaint of oil being dumped into a storm drain which discharged to a dry pond. He handed out door hangers to the surrounding community explaining how to properly dispose of oil.
11/12/2020	Tree and Yard Debris Dumping	Brochure/Door Hanger Distribution	4	Nashville Residents	Leaves/Brush/Trash Dumping	NPDES received a complaint of tree and yard debris being dumped into a creek. Some large branches were observed beside the creek, although these would not hinder water flow. AD distributed door hangers focusing on proper yard debris disposal.
10/30/2020	Pool Discharge Education	Brochure/Door Hanger Distribution	1	Nashville Resident	General Stormwater Pollution	AD spoke with a Nashville resident who is looking into purchasing a property along a creek and installing a pool. AD informed him that if he proceeds with the installation that all pool water should be discharged into the sanitary sewer, not a storm drain

Date	Event	Education Type	Estimated Audience #	Audience	Target Audience/ Pollutant	Notes
10/29/2020	Leaf Dumping Complaint	Brochure/Door Hanger Distribution	1	Alpha Church	Leaves/Brush/Trash Dumping	AD distributed educational material to the Alpha Church on how to properly dispose of yard debris. AD spoke with a church member about informing their landscaper to avoid blowing leaves into the storm drain.
10/29/2020	Metro Nashville School of Rock	Presentation	53	ASCE members	Construction/Development Education	MWS Construction group presented on post installation inspections, evaluation and repairs, and panel discussions at the ASCE School of Rock event.
10/22/2020	Metro Nashville School of Rock Session 3	Presentation	48	ASCE members	Construction/Development Education	MWS Construction group presented on pipe handling, inspection, and evaluation through a webinar hosted by ASCE School of Rock.
10/21/2020	TNSA Virtual Annual Conference	Presentation	15	Conference attendees	General Stormwater Pollution	MWS Eric Kuehler presented on Nashville's Urban Forestry Program
10/15/2020	Metro Nashville School of Rock Session 2	Presentation	42	ASCE members	Construction/Development Education	MWS Construction group presented on pipe production, quality control, and manufacturing in a webinar hosted by the School of Rock.
10/13/2020	Yard Debris Complaint	Brochure/Door Hanger Distribution	1	Resident of neighborhood	Leaves/Brush/Trash Dumping	AD distributed a door hanger about proper disposal of yard debris and blowing of leaves to a resident. AD also spoke with this resident on the phone and explained the water quality issue associated with dumping or blowing debris into a storm drain.
10/9/2020	TN STEAM Event	Presentation	50	Nashville residents	General Stormwater Pollution	The presentations included topics of Poop Scoop Challenge, Thirsty Tree Challenge, and Microorganism Farts and Energy.
10/9/2020	TN STEAM Event	Presentation	50	Nashville residents	General Stormwater Pollution	The presentations included topics of Poop Scoop Challenge, Thirsty Tree Challenge, and Microorganism Farts and Energy.
10/8/2020	Wingstop - general waste issues	Brochure/Door Hanger Distribution	1	Wingstop Manager/Employees	Oil and Grease	There was a complaint that grease was being dumped by employees at Wingstop. Rob gave a brochure to the manager and discussed their housekeeping issues out back and proper handling of grease.

Date	Event	Education Type	Estimated Audience #	Audience	Target Audience/ Pollutant	Notes
10/8/2020	ASCE - School of Rock History	Presentation	55	School of Rock attendees	Construction/Development Education	Michael Hunt presented a 25 minute overview of pipe design and installation inspections on as-builts for the School of Rock through webex.
9/30/2020	Development Community Email	Mail-out	191	Grading permit pre-con meeting contacts	Construction/Development Education	Welcome email sent to new grading permit pre-con meeting contacts.
9/30/2020	Development Community Email	Mail-out	911	Grading permit pre-con meeting contacts	Construction/Development Education	Email sent to grading permit pre-con meeting contacts for special online webinar notice. Pipe install.
8/18/2020	Tree Talk	Tree/Urban Forestry	45	General public	General Stormwater Pollution	Eric Kuehler was asked by Public Works to be a guest on their monthly Tree Talk presentation to discuss the current tree inventory and its benefits for the citizens.

Note: Each Social Media posts were not input into the NPDES Public Education database. NPDES can run reports from the social media sites to determine the number of views.

Metro Department of Public Works Waste Collection During FY21

	July	August	September	October	November	December	January	February	March	April	May	June	Total
Recycling													
Curbside Recycling/Inhouse Recycling/Recycling Dumpsters													
Mixed Recyclables	896.49	957.24	770.57	1,148.41	703.02	1,027.63	1,144.71	941.75	912.00	1,168.32	1,125.79	999.97	**11,795.90**
Monthly Totals	896.49	957.24	770.57	1,148.41	703.02	1,027.63	1,144.71	941.75	912.00	1,168.32	1,125.79	999.97	**11,795.90**
Household Hazardous Waste Facility													
Oil	2.76	3.99	0.88	0	0	0	0	0	0	0	0	0	**7.63**
Anti-Freeze	1.18	2.8	0	0	0	0	0	0	0	0	0	0	**3.98**
Electronics	5.06	10.15	10.99	0	0	9.43	0	2.82	4.92	2.24	0	0	**45.61**
Batteries	0	0	0	0	0	0	0	0	0	0	0	0	**-**
Tanks	0	0	0	0	0	0	0	0	0	0	0	0	**-**
Clean Harbors	6.65	6.86	0	0	0	0	0	0	0	0	0	0	**13.51**
Monthly Totals	**15.65**	**23.8**	**11.87**	**0**	**0**	**9.43**	**0**	**2.82**	**4.92**	**2.24**	**0**	**0**	**70.73**
Drop Off Recycling Centers & Convenience Centers													
Carpet/Carpet Pad	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Mixed Recyclables	57.84	50.74	45.10	44.18	20.77	53.06	54.62	44.36	53.72	47.07	48.81	50.49	**570.76**
Aluminum & Tin	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Glass	231.79	236.59	228.80	204.91	105.67	268.12	257.83	200.77	272.07	225.74	227.69	222.88	**2,682.86**
Mixed Paper	103.09	101.78	98.37	119.80	55.89	129.37	103.24	80.83	120.48	105.09	109.37	101.41	**1,228.72**
OCC	249.09	258.10	245.76	264.63	144.92	415.99	296.14	169.11	309.42	286.46	267.26	279.31	**3,186.19**
Plastic	34.08	33.01	31.65	35.12	17.27	30.98	31.89	31.08	35.91	34.64	31.70	33.46	**380.79**
Plastic Bottles & Metal Cans	45.80	45.46	40.22	62.41	18.60	47.21	50.49	39.00	46.21	42.87	41.23	60.67	**540.17**
Scrap Metal	80.75	41.16	82.72	116.08	71.77	58.28	48.70	46.54	93.56	81.33	45.74	73.12	**839.75**
Tires	537.14	527.83	627.22	609.57	526.72	718.14	547.25	522.91	812.05	774.96	722.13	754.74	**7,680.66**
Monthly Totals	**1,339.58**	**1,294.67**	**1,399.84**	**1,456.70**	**961.61**	**1,721.15**	**1,390.16**	**1,134.60**	**1,743.42**	**1,598.16**	**1,493.93**	**1,576.08**	**17,109.90**
Waste Collection													
Total Metro Public Works Trash Collection	3,723.94	3,706.21	4,190.86	5,575.38	3,758.22	4,348.13	3,883.84	3,222.68	4,611.10	4,544.78	4,459.30	4,851.40	**50,875.84**
Total Convenience Center Trash	2,023.34	2,135.93	2,054.06	2,109.54	1,269.59	1,747.92	1,707.75	1,164.76	2,038.47	1,697.84	1,799.64	1,467.22	**21,216.06**
Contracted Residential	10,179.10	8,632.71	9,351.28	8,872.10	8,387.55	9,320.77	8,334.85	6,925.60	9,424.15	9,382.78	8,355.90	9,225.30	**106,392.09**
Monthly Totals	**15,926.38**	**14,474.85**	**15,596.20**	**16,557.02**	**13,415.36**	**15,416.82**	**13,926.44**	**11,313.04**	**16,073.72**	**15,625.40**	**14,614.84**	**15,543.92**	**178,483.99**
Brush Collection													
Unground -- Metro	3,667.33	2,685.28	2,820.67	2,494.88	1,527.26	2,051.56	1,557.26	962.39	1,757.44	1,533.53	1,631.46	2,664.38	**25,353.44**
Unground -- Metro Citizens	245.25	240.05	227.30	199.32	203.04	143.68	120.18	51.42	175.65	169.65	220.95	194.83	**2,191.32**
Unground -- Parks	39.45	45.69	51.33	50.48	10.33	17.38	13.68	8.88	18.02	45.86	39.79	60.54	**401.43**
Ground -- Board of Education	106.42	81.48	5.48	26.45	24.28	12.76	42.02	3.69	27.90	8.18	32.07	27.20	**397.93**
Ground -- Library	0.31	1.70	0.17	9.28	2.62	0.63	7.93	1.94	0.92		1.45	1.84	**28.79**
Ground--Sheriff	2.57	0.95	13.91	8.78		0.32	6.23					2.41	**35.17**
Ground--Water	-	-	-	-	-	-	-	-	-	-	-	-	**-**
MDHA	-	-	-	0.19	-	1.07	2.00	-	-	-	-	-	**3.26**
Monthly Totals	**4,061.33**	**3,055.15**	**3,118.86**	**2,789.38**	**1,767.53**	**2,227.40**	**1,749.30**	**1,028.32**	**1,979.93**	**1,757.22**	**1,925.72**	**2,951.20**	**28,411.34**

Metro Department of Public Works Hazardous Spills Responses During FY21

Date	Notified	Location	Situation	Arrived	Actions	Departed	Agencies	Report By
05/19/2021	12:15	1018 Ferris Ave	Hydraulic Spill on Road	12:40	Put Down 300 Lbs. Absorbent	13:50	PW RIR	George Allen
05/16/2021	2:00	Douglas Ave & Ellington Pkwy	Fatal Accident Gas Spill on Road	2:40	Cleaned Up Biohazard	3:05	PW RIR, MNPD	George Allen
04/21/2021	17:37	12th & Jackson	Hydraulic Oil Spill on Road	17:43	Used 500lbs Absorbent on Road	19:15	MPW RIR	Chris Dotye
04/20/2021	9:00	Harpeth River Greenway @ Morton Mill Trailhead	Oil Drum on Walking Trail Spilled Oil in Ditch Line 50 Gallons	9:30	Picked Up Drum and Put 10 Absorbent Pads Down Parks Taking Care of Clean Up on Oil Spill	10:00	MWS, PW RIR	Ernie Kurgan
04/20/2021	8:00	6614 Robertson Ave	Hydraulic Spill on Road	8:20	Put Down 200lbs. Absorbent on Road	8:30	MWS, PW RIR	Ernie Kurgan
04/13/2021	13:00	Ezell Recycling Center	Hydraulic Spill at Center	13:20	Applied 350 lbs. Absorbent	14:00	PW RIR	Chris Dotye
04/08/2021	15:10	2704 Brightwood Ave	House Paint Spill in Alley	15:30	Applied Absorbent 75 Lbs.	15:45	PW RIR	Chris Dotye
03/30/2021	17:20	Spence Ln & Elm Hill Pike	Diesel Spill	17:52	Applied 150 lbs. Absorbent on Road	19:00	NFD, PD	Steve Nickens
01/07/2021	9:32	4833 Foley Dr	50 Gal. Hydraulic Spill on Road from Trash Truck 50 Gal. Hydraulic Spill on Road from Trash Truck	9:42	Covered With 100 Lbs. Spill Gone Absorbent Petro Free	10:32	PW RIR	Brandon Gann
12/11/2020	13:00	2502 9th Ave S.	Hydraulic Spill on Road (Solid Waste)	13:15	Applied 500 lbs. Absorbent on Spill	14:30	PW RIR	Steve Nickens
08/16/2020	14:00	Oil Spill on Road	Hydraulic Spill on Road	14:55	Put Down 150 Lbs. Absorbent	16:05	PW RIR	Steve Nickens
07/11/2020	11:45	Rosa Parks & Jefferson St.	Oil Spill on Road	11:50	Applied 250 Lbs. Absorbent to Roadway	12:50	PW RIR	Steve Nickens
05/17/2020	20:18	Buena Vista Pk & Cliff Dr.	Oil Spill on Road from Wreck	21:08	Used 25 Lb. Absorbent On spill	21:30	PW RIR	Brandon Gann

Note: PW RIR (Public Works Roadway Incident Response), MNPD (Metro Nashville Police Department), MWS (Metro Water Services, NFD (Nashville Fire Department)

Metro's SCM Inspection and Maintenance Workshop for Property Management Companies

User	Join Time	Duration
Amy Delvin	6/24/2021 8:52	01:30:36
Ann Claud	6/24/2021 8:54	01:28:08
Ashley Prislinger	6/24/2021 9:09	01:13:25
Becca Novotny	6/24/2021 9:12	01:10:30
Call-In User_10 (931206****)	6/24/2021 9:03	01:18:28
Call-In User_11 (615502****)	6/24/2021 9:04	07:33
Call-In User_12 (931273****)	6/24/2021 9:07	06:42
Call-In User_13 (615430****)	6/24/2021 9:11	01:07:32
Call-In User_14 (615390****)	6/24/2021 9:24	58:08
Call-In User_2 (615210****)	6/24/2021 8:50	13:05
Call-In User_3 (615476****)	6/24/2021 8:55	01:14:12
Call-In User_4 (615334****)	6/24/2021 8:56	01:12:55
Call-In User_5 (615613****)	6/24/2021 8:57	26:54
Call-In User_6 (615892****)	6/24/2021 8:59	00:31
Call-In User_7 (615892****)	6/24/2021 9:00	01:21:42
Call-In User_8 (615250****)	6/24/2021 9:01	47:58
Call-In User_9 (615501****)	6/24/2021 9:03	01:14:21
Chanel Mumford	6/24/2021 9:02	01:20:01
Connie Adams	6/24/2021 9:16	01:06:19
Daniel Terrell	6/24/2021 9:05	01:17:09
David Hines	6/24/2021 9:15	01:07:21
Eric Kuehler	6/24/2021 8:54	01:27:45
Johnson, Charda (Its)	6/24/2021 8:37	01:44:51
Josh Hayes	6/24/2021 8:38	01:44:12
Kathleen Sutherland	6/24/2021 9:02	01:13:30
Kerry Chapman	6/24/2021 9:22	01:00:04
Mark Darden	6/24/2021 9:00	01:22:07
Michael Hunt	6/24/2021 8:57	01:25:45
Phillip Buckner	6/24/2021 9:13	01:08:51
Scott Alessi	6/24/2021 9:02	01:20:37
Susan Ogburn	6/24/2021 9:08	01:14:38
Tammy Cain	6/24/2021 8:58	01:23:42
Wayne Plump	6/24/2021 9:04	01:18:02
Deborah Wallace	6/24/2021 9:20	28:49
Gary Hudson	6/24/2021 8:44	01:38:19
Patty Ghertner	6/24/2021 9:02	01:20:03
Will Swift	6/24/2021 9:03	01:19:12

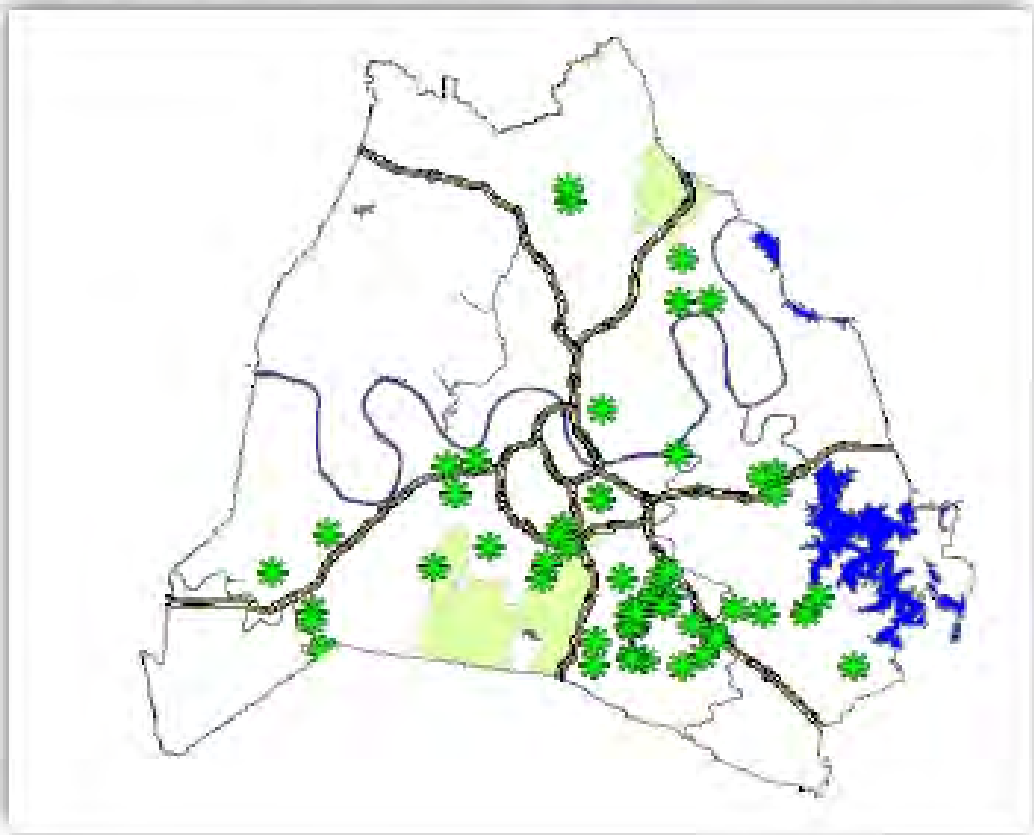
Note: The workshop was also recorded and sent to many other property management company contacts that were unable to attend.

NPDES 2021 Flood Response Investigations Summary

Report for Debris/Trash Complaint Investigation March 2021 Flood

Total Debris/Trash Complaints Investigated	**68**
Issues Forwarded to ROM to Assess Potential Impacts to Metro Infrastructure	31
Issues Forwarded to HON for Potential Stream Clean-up Sites	11
Issues Forwarded to Codes as Structures from Property Owners were Identified in Creek (i.e. Sheds)	4
Issues Closed as the Investigations Revealed Issues related to Private Property or did not rise to the Level of Needing a Stream Clean-up	21

Note: Some of the same complaint locations were forwarded to several departments for further Consideration.



NPDES 2021 Flood Response Investigations Summary (Continued)

Example Photos:

NPDES 2021 Flood Response Investigations Summary (Continued)

Report for Recon post March 2021 Flood

Miles of stream assessed – 30.5

Issues Found

- 3 debris dams against RR bridges to CSX
- 3 reports to Codes (1 trailer, soccer goal parts, and restaurant supply found in lower Mill)
- 1 picnic table removal to Metro Parks
- 7 sites reported to Stormwater Maintenance for debris removal
- 4 issues sent to System Services (1 missing manhole, 2 debris pushed up against sewer lines, and 1 overflow cleanup site)
- 9 segments/sites sent to Hands on Nashville for volunteer clean up
- 1 illicit discharge from a private SSO

ATTACHMENT A – Protected Species Report

Metro Nashville Municipal Separate Storm Sewer System Permit
Federal or State-Protected Species Impact assessment

(Reporting Period 07/01/2020 – 06/30/2021)

Reviewed and Updated:
November, 2021

Introduction:
As per the Municipal Separate Storm Sewer System (MS4) permit, Metro Nashville is required to perform an annual assessment of potential Stormwater impacts to federal and state-protected aquatic species known to exist within Metro Nashville Davidson County (Metro). In order to perform the assessment, the Metro Water Services (MWS) Stormwater NPDES Section downloaded a list of aquatic species located within Davidson County. In order to assess potential impacts to rare species, the list of rare aquatic species was analyzed and broken into specific habitat categories. Table 1 details the list of rare aquatic species that have been known to occur within Davidson County. According to the Tennessee Department of Conservation (TDEC) Natural Heritage Program (NHP), Rare Species Inventory Program there are 18 aquatic species rare or protected aquatic species that occur or have historically occurred within Davidson County.

Only five of the 22 rare aquatic species have a federal protection status, all of which are listed as "Endangered", while remaining 16 of the rare aquatic species have been listed by the state of Tennessee with one of the following legal protection status:
"D" Deemed in Need of Management,
"E" Endangered,
"T" Threatened,
"S" Special Concern species, and
Rare, Not State Listed

Typical Habitat Requirements:
While the 18 species may require specific aquatic habitat conditions, the general type of aquatic habitat can be broken into three main categories:

- Large River/Lake – The Cumberland River is the only large river system within Davidson County. The Cumberland River has portions of two impoundments (Cheatham Lake and Old Hickory Lake) within Davidson County. Due to the dilution factor, Nashville's Stormwater runoff would have negligible effects of the water quality/habitat of the Cumberland River.
- Small Streams to Small/Medium Rivers – This particular habitat represents all of the smaller headwater streams, creeks and small rivers that drain into the Cumberland River. The small streams/rivers are more susceptible to impacts from Stormwater runoff from the MS4.
- Ponds/Wetlands/Springs – This particular habitat describes floodplain wetlands, farm ponds and springheads located throughout the county, which would have the potential of being impacted by MS4 runoff.

Table 1 – List of Rare Aquatic Species for Davidson County Tennessee – FY20

General Aquatic Resource	Type	Scientific Name	Common Name	Global Rank	Fed. Status	St. Status	Habitat	State Rank
Small Headwater Streams to Small/ Medium Rivers	Invertebrate Animal	*Sphalloplana buchanani*	A Cave Obligate Planarian	G1G2	No Status	Rare, Not State Listed	Aquatic cave obligate; northern Central Basin; Davidson County; taxonomy poorly understood.	S1
	Vertebrate Animal	*Ambystoma barbouri*	Streamside Salamander	G4	No Status	D	Seasonally ephemeral karst streams; middle Tennessee.	S2
	Vertebrate Animal	*Cryptobranchus alleganiensis*	Hellbender	G3G4	No Status	E	Rocky, clear creeks and rivers with large shelter rocks.	S3
	Vertebrate Animal	*Etheostoma luteovinctum*	Redband Darter	G4	No Status	D	Limestone streams; Nashville Basin & portions of Highland Rim.	S4
	Vertebrate Animal	*Etheostoma microlepidum*	Smallscale Darter	G2G3	No Status	D	Small rivers, in deep, strongly flowing riffles with gravel, boulder, and coarse rubble substrates; Cumberland River drainage.	S2
	Vertebrate Animal	*Percina phoxocephala*	Slenderhead Darter	G5	No Status	D	Small-large rivers with moderate gradient in shoal areas with moderate-swift currents; portions of Tenn. & Cumb. river watersheds.	S3
	Invertebrate Animal	*Faxonius shoupi*	Nashville Crayfish	G1G2	LE	E	1st-order & larger streams, generally with bedrock bottom, under slab rock; endemic to Mill Creek watershed; Davidson & William. cos.	S1S2
	Invertebrate Animal	*Epioblasma florentina walkeri*	Tan Riffleshell	G1T1	LE	E	Found in river headwaters, in riffles and shoals in sand and gravel substrates; Tennessee & Cumberland river systems.	S1
	Invertebrate Animal	*Simpsonaias ambigua*	Salamander Mussel	G3	No Status	Rare, Not State Listed	In sand or silt under large, flat stones in areas of swift current; occurred historically in E Fk Stones R; 2005 obs in lower Duck R.	S1
	Invertebrate Animal	*Lithasia duttoniana*	Helmet Rocksnail	G2Q	No Status	Rare, Not State Listed	Rocky substrates in riffle systems; bedrock in flowing water below main section of riffles; Duck River (TN River system).	S2
	Vertebrate Animal	*Acipenser fulvescens*	Lake Sturgeon	G3G4	No Status	E	Bottoms of large, clean rivers and lakes.	S1
	Vertebrate Animal	*Carpiodes velifer*	Highfin Carpsucker	G4G5	No Status	D	Large rivers, mostly in Tennessee River drainage.	S2S3
	Vertebrate Animal	*Cycleptus elongatus*	Blue Sucker	G3G4	No Status	T	Swift waters over firm substrates in big rivers.	S2
	Vertebrate Animal	*Macrochelys temminckii*	Alligator Snapping Turtle	G3G4	No Status	D	Slow moving, deep water of rivers, sloughs, oxbows, swamps, and lakes; middle and west Tennessee; obscure.	S2S3
	Invertebrate Animal	*Epioblasma brevidens*	Cumberlandian Combshell	G1	LE	E	Large creeks to large rivers, in coarse sand or mixtures of gravel, cobble, or rocks; Tennessee & Cumberland river systems.	S1
	Invertebrate Animal	*Lampsilis abrupta*	Pink Mucket	G2	LE	E	Generally a large river species, preferring sand-gravel or rocky substrates with mod-strong currents; Tennessee & Cumberland river systems.	S2
	Invertebrate Animal	*Plethobasus cooperianus*	Orangefoot Pimpleback	G1	LE	E	Large rivers in sand-gravel-cobble substrates in riffles and shoals in deep flowing water; Cumberland & Tennessee river systems.	S1
Ponds/ Wetlands/ Springs	Vascular Plant	*Ranunculus aquatilis var. diffusus*	White Water-buttercup	G5T5	No Status	E	Ponds and Streams	S1

Potential Impacts from MS4 Runoff:
Rare species that inhabit smaller streams and rivers, ponds, wetlands, and springs would be the most vulnerable to potential impacts from MS4 runoff. Impacts from MS4 runoff includes:

- Increased sediment loads smothering natural stream substrate;
- Increased nutrient runoff that cause sporadic algal blooms and accompanying reductions in available oxygen;
- Increased levels of toxic chemicals such as pesticides, oils, etc.;
- General loss of habitat from development activities.

Metro Nashville's Measures to Prevent Impacts to Aquatic Rare Species:
Metro Nashville's MS4 program deploys a simple technique to protect against impacts to rare aquatic species: "*Protect all of Nashville's Aquatic Habitat*". In order to protect Nashville's aquatic habitat, a multi-prong approach is in place:

- Control Future Development – Establish local regulations that prevent future development from destroying aquatic habitat. Monitor runoff during construction to prevent the destruction of aquatic habitat
- Enforce on developments that violate local construction regulations that could lead to the further destruction of aquatic resources.
- Control the quality of Stormwater runoff from existing properties
- Establish local regulations that prevent the discharging of pollutants to waterways
- Monitor existing properties to ensure pollutants are not being discharged to the waterways.
- Enforce on properties/individuals that violate local water pollution laws that could potentially impact aquatic habitat.
- Monitor the overall water quality and health of Nashville's streams
- Analytical sampling of certain water quality parameters
- Rotating biological surveys of Davidson County streams.

Controlling Future Development
Metro Nashville has established strict regulations protecting aquatic resources from impacts associated with development activities. All development or redevelopment activities that are over 10,000 square feet in overall footprint or involve more than 100 cubic yards of fill are required to obtain grading permits from the Metro Water Services (MWS) Stormwater Division. In order to obtain a grading permit from MWS, engineered plans have to be developed that illustrate how Stormwater runoff will be managed during and after development. Strict erosion and sediment control measures are required at all grading permit properties during construction. In order to ensure that erosion and sediment controls are maintained throughout construction, NPDES has seven inspectors that inspect grading permit site construction control measures.

Metro Nashville also requires protection from impacts to aquatic resources after the construction phase of projects by requiring grading permit properties to install permanent Stormwater treatment measures that are designed to treat/address both the volume and quality of runoff from the property.

In addition to requiring development or redevelopment activities to obtain permits and treat Stormwater runoff, Metro Nashville was also one of the first municipalities in the state to establish no-disturb buffers along streams and other water resources within Metro Nashville, Davidson County. Development activities that demonstrate a hardship requiring some impacts to the no-disturb riparian buffer (i.e. for a bridge crossing, etc.) are required to go through a strict variance appeal process. Variance requests for stream crossing or other direct impacts to water resources are not granted unless any necessary TDEC Aquatic Resource Alteration Permits (ARAPs) or Section 404 permits from the U.S. Army Corps of Engineers (USACOE) are obtained, which cannot be issued if protected species are impacted.

Controlling the Quality of Stormwater Runoff from Existing Properties

Metro Nashville has the following specific ordinance in place that prevents the discharge of pollutants to storm drains or community waters:

15.64.205 - Non-Stormwater discharges.

A. Definitions.

"Community waters" means any and all rivers, streams, creeks, branches, lakes, reservoirs, ponds, drainage systems, springs, wetland, wells and other bodies of surface or subsurface water, natural or artificial, lying within or forming a part of the boundaries of the Metropolitan Government of Nashville and Davidson County.

"Contaminant" means any physical, chemical, biological or radiological substance or matter.

"Director" means the Director of the Metropolitan Government of Nashville and Davidson County's Department of Water and Sewerage Services, or his designee.

"Discharge" means any substance disposed, deposited, spilled, poured, injected, seeped, dumped, leaked, or placed by any means, intentionally or unintentionally, into community waters, the waters of the state, or any area draining directly or indirectly into the municipal Stormwater system of the metropolitan government.

"Metropolitan government" means the Metropolitan Government of Nashville and Davidson County.

"Municipal separate storm sewer system of the metropolitan government" means a conveyance, or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, and storm drains) designed or used for collecting or conveying Stormwater; provided, however, that sanitary and combined sewers are not included in the definition of the municipal separate storm sewer system.

"Non-Stormwater discharge" means any discharge to the municipal separate storm sewer system except as permitted by subsection C of this section.

"Waters of the state" means any water, surface or underground, lying within or forming a part of the boundaries of the Metropolitan Government of Nashville and Davidson County, over which the Tennessee Department of Environment and Conservation exercises primary control with respect to Stormwater permits.

B. Except as hereinafter provided, all non-Stormwater discharges into community waters, into the waters of the state, or into the municipal separate storm sewer system of the metropolitan government are prohibited and are declared to be unlawful.

C. Unless the director has identified them as a source of contaminants to community waters, the waters of the state, or the municipal separate storm sewer system of the metropolitan government, the following discharges are permitted:

1. Stormwater as defined in TCA Section 68-221-1102(5);
2. Water line flushing;
3. Landscape irrigation;
4. Diverted stream flows;
5. Rising ground waters;
6. Uncontaminated groundwater infiltration (as defined at 40 CFR 35.2005(20)) to separate storm sewers;

7. Uncontaminated pumped groundwater;
8. Discharges from potable water sources;
9. Foundation drains;
10. Air conditioning condensate;
11. Irrigation water;
12. Springs;
13. Water from crawl space pumps;
14. Footing drains;
15. Lawn watering;
16. Individual residential car washing;
17. Flows from riparian habitats and wetlands;
18. Dechlorinated swimming pool discharges;
19. Street wash waters resulting from normal street cleaning operations;
20. Discharges or flows from emergency firefighting activities.

D. The director, with the approval of the mayor, shall have authority to implement this section by appropriate regulations. Such regulations may include but are not limited to provisions for inspection of points of origin of known or suspected non-permitted discharges by appropriate personnel of the metropolitan government.

E. Discharges pursuant to a valid and effective NPDES permit issued by the State of Tennessee are not prohibited by this section.

F. The provisions of this section, including subsection C of this section, shall not apply to sanitary or combined sewers, which are governed by Chapter 15.40 of the Metropolitan Code of Laws.

G. Violation of this section shall subject the violator to a civil penalty of not less than fifty dollars nor more than five thousand dollars per day for each day of violation. Each day of violation may constitute a separate violation.

NPDES issues enforcement notices and administrative penalties to existing facilities found to be in violation of the above non-Stormwater discharge code.

In addition to controlling polluted runoff from construction activity, NPDES implements various other pollution prevention programs:

- Industrial Inspection/Monitoring Program
- Proactive Field Screening/Illicit Discharge Detection Elimination Program
- Pollution Reporting Hotline
- Sewer Leak Detection Program (Using Thermography Technology)
- Post-Construction Stormwater Treatment BMP inspection/maintenance verification program
- Public Involvement/Education

<u>Monitoring the Overall Water Quality and Health of Nashville's Streams</u>
NPDES performs intense monitoring of Metro Nashville, Davidson County streams. Veronica Logue of the NPDES Division retained a permit/certification from the USFWS/TWRA to perform surveys within the Mill Creek watershed (home to the endangered Nashville Crayfish. The following programs involve field assessments of streams:

- Ambient Sampling - Seasonal water quality samples are taken and analyzed for potential pollutants. Various streams are sampled each year on a rotating basis.

- TMDL Monitoring – Quarterly flow weighted samples are collected and analyzed for bacterial and TSS of various/rotating stream segments in which TMDLs have been developed.
- Visual Stream Assessments – All State-listed 303(d) stream segments with MS4 outfalls are visually inspected on a 5-year cycle.
- Benthic Surveys – Seasonal benthic surveys are performed on various streams each year. The benthic sampling coincides with the same stream rotation schedule as the ambient sampling.

If abnormalities are found in any of the above monitoring results, individual investigations are initiated to find and eliminate potential sources of pollution.

Conclusion:
Metro Nashville's MS4 program has taken substantial steps to protect aquatic resources within Metro Nashville, Davidson County. By virtue of protecting the Nashville's water resources, critical habitat required for aquatic species has also been preserved/ protected. During this permit year, there have not been any known discharges from the MS4 that have caused the destruction of a rare species or their critical habitat.

ATTACHMENT B – Coordination with TDEC on MS4 Compliance During Administrative Extension Period of MS4 Permit and SWMP Amendments

MEGAN BARRY
MAYOR

METROPOLITAN GOVERNMENT OF NASHVILLE AND DAVIDSON COUNTY

DEPARTMENT OF WATER AND SEWERAGE SERVICES
STORMWATER DIVISION
NPDES OFFICE
1607 COUNTY HOSPITAL ROAD
Nashville, Tennessee 37218

January 31, 2017

Re: Nashville Phase 1 MS4 Permit Reissuance – TNS068047

Vojin Janjic | Manager, Water-Based Systems
Division of Water Resources
William R. Snodgrass Tennessee Tower, 11th Floor
312 Rosa L. Parks Ave, Nashville, TN 37243

Dear Mr. Janjic,

We are writing you to request specific clarification on the permit reissuance process for the Metropolitan Government of Nashville, Davidson County (Metro) Municipal Separate Storm Sewer System, which expires as of today, January 31, 2017. As we approach this reissuance process and period between expired permit and reissued permit, it is our intentions to propose the following path going forward to ensure MS4 Permit compliance is maintained throughout the transition period and to ensure coordination occurs between the Division and key Metro staff to incorporate changes to specific terms and conditions of the MS4 permit.

Transition Period:
As you are aware, most of the specific requirements of the MS4 permit are ongoing and do not have certain deadlines by which to be completed. Among these, include programs such as administering stormwater management regulations requirements for post-construction stormwater controls, overseeing a vigorous inspection and oversight program for construction activities, performing public education/public involvement activities, ensuring municipal maintenance operations are not impacting stormwater runoff, and implementation of various Illicit Discharged Detection and Elimination (IDDE) programs. Metro proposes to continue these ongoing programs as prescribed in the existing active permit until the new permit becomes effective.

There are some MS4 permit requirements, however, that list specific target dates or timeframes for the activities to be completed per Metro's active permit. Specific requirements within the MS4 permit that have declared deadlines are listed below:

- ***Dry Weather Outfall Screening***
  - *Screen one outfall within every ¼ mile commercial/industrial grid once per permit term.*
- ***Industrial Inspection/Monitoring Program***
  - *Inspect industrial high risk sites as identified by the MS4 permit (i.e. SARA Title 3, TSD sites, etc.) once every 3 years.*
- ***Post Construction Stormwater Control Measure (SCM) Inspection and Maintenance Oversight Program***
  - *Implement permittee-defined program by the end of year 5.*
- ***Various MS4 Permit-Prescribed Monitoring Activities.***
  - *Sampling programs (i.e. wet weather, ambient, visual stream assessments, etc.) prescribed in the permit to be completed on a 5 year permit term.*

It is our understanding through conversations with TDEC staff, that it may be late 2017 or possibly even next year, before our MS4 permit is reissued. With that said, we would like to propose the following compliance activities to be performed in the transition period.

- ***Dry Weather Outfall Screening***
  - *Test our newly proposed field screening protocol (i.e. screen 3 business/industrial sites for site management/housekeeping procedures in each ¼ commercial/industrial-zoned grid.) Transition period goal would be to screen at least 50 grids each year prior to the new permit being issued.*
- ***Industrial Inspection/Monitoring Program***
  - *Re-inspect only industrial sites in which issues were noted during the original inspections and/or those involved with compliant investigations. Identify and perform inspections on industrial facilities (not required to be inspected by the original MS4 permit (i.e. auto salvage lots, ready-mix facilities, etc. not identified as SARA Title 3 or TSD facilities)). A list of industrial facilities to be inspected would be sent to the TDEC Nashville Field Office. Goal would be to inspect 10 industrial facilities each year.*
- ***Post Construction Stormwater Control Measure (SCM) Inspection and Maintenance Oversight Program***
  - *Continue to respond to citizen complaints of SCM structures not being maintained properly. In addition, would inspect and enforce (if necessary) on at least 50 SCM structures per year. Currently and during the transition period, Metro will continue to build its SCM Inspection & Maintenance oversight process.*
- ***Various MS4 Permit-Prescribed Monitoring Activities.***
  - *Discontinue the following sampling activities until the new MS4 permit is issued:*
    - *Wet Weather Homogenous Land Use Sampling*
    - *Wet Weather SCM Discharge Grab Sampling*
    - *Wet Weather Industrial Sampling (1 TMSP/RMCP site per year).*

- *Continue routine ambient monitoring/sampling programs (ambient chemical/bacteriological sampling and visual stream assessments) as well as any site-specific sampling as required in the course of routine investigations. The MWS Stormwater NPDES Watershed Group would coordinate with TDEC Nashville Field Office staff on monitoring schedules (which watersheds they will be monitoring during the transition period).*

New Permit Coordination

As stated above, Metro is requesting coordination on developing specific terms and conditions of the reissued MS4 permit in an ongoing effort to improve our permit compliance activities. In particular there are several program activities that Metro is interested in modifying to make more efficient and effective. Some of these proposed changes would involve changes to MS4 permit requirements as well, if implemented. Specific changes Metro are requesting to individually listed permit requirements were included in Metro's most recent Annual Report submittal (see attachment). Metro is requesting specific meetings to be arranged between appropriate TDEC permit writer staff and MWS Stormwater NPDES personnel so that these proposed changes can be explored and discussed.

Sincerely,

Michael Hunt
Metro Water Services, Stormwater, NPDES
Program Manager

Encl. - Nashville Phase 1 MS4 Permit Application Section of MS4 Annual Report

CC:

April Grippo – TDEC Nashville Field Office
Jennifer Dodd – TDEC Central Office
John Leffew – TDEC Nashville Field Office

DAVID BRILEY
MAYOR

METROPOLITAN GOVERNMENT OF NASHVILLE AND DAVIDSON COUNTY

DEPARTMENT OF WATER AND SEWERAGE SERVICES
STORMWATER DIVISION
NPDES OFFICE
1607 COUNTY HOSPITAL ROAD
Nashville, Tennessee 37218

March 30, 2018

Re: Nashville Phase 1 MS4 Permit Reissuance – TNS068047

Vojin Janjic | Manager, Water-Based Systems
Division of Water Resources
William R. Snodgrass Tennessee Tower, 11th Floor
312 Rosa L. Parks Ave, Nashville, TN 37243

Dear Mr. Janjic,

We are writing you to provide an update to the Metropolitan Government of Nashville, Davidson County (Metro) Municipal Separate Storm Sewer System (MS4) permit compliance activities. As you are aware, Metro's MS4 permit expired on January 31, 2017 and prior to the expiration, Metro submitted several requests to alter specific permit compliance activities (See Attached letter dated January 31, 2017. As a follow-up to proposed MS4 permit compliance activities, Metro hosted a meeting with Jennifer Dodd and Karina Bynum from the Tennessee Department of Environment and Conservation to discuss the proposed changes. As a result of the meeting, TDEC provided positive feedback to the changes and requested Metro to provide an update on the proposed changes in the first quarter of 2018. The following paragraphs describe some of the already observed benefits to changes to MS4 permit compliance activities that were implemented during this transition period between permits.

Summary Transition Period MS4 Compliance Changes:
The majority of the MS4 permit compliance programs have continued without adjustment as these activities are considered as ongoing within the MS4 permit. There are a few activities that were required to be completed by year 5 of the permit, which were completed, but Metro found to be very beneficial in identifying and eliminating stormwater pollution. As such, Metro proposed changes to the following programs:

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

- ***Dry Weather Outfall Screening***
  Previous MS4 Permit Requirements
  - *Screen one outfall within every 1/4 mile commercial/industrial grid once per permit term.*

  New More Efficient Proposed Field Screening Program
  - *Screen 3 business/industrial sites for site management/housekeeping procedures in each ¼ commercial/industrial-zoned grid.) Transition period goal would be to screen at least 50 grids each year prior to the new permit being issued.*

  Initial Findings:
  - *This process has proven to be much more effective than looking specifically at outfalls. In the few months of testing, several poor site management practices have been found such as improper management of dumpster pads and grease recycling bins. This has allowed Metro to be more effective and proactive in talking with these businesses to educate them on proper site management issues to prevent these exposed materials from washing off to the MS4 during a rain event. It is important to note that while we are looking at business practices within grids, we still spot check stormwater infrastructure to see if there is any suspicious dry weather, potentially "illicit discharge" flow.*

  Adjustments Made to New Approach
  - *The only adjustment made was going from screening 3 businesses within a ¼ mile grid to screening 3 businesses within a ½ mile grid. Upon implementing, we quickly realized that ¼ mile grids were too limiting and in many cases did not encompass multiple parcels that could be screened.*

- ***Industrial Inspection/Monitoring Program***
  Previous MS4 Permit Requirements
  - *Inspect industrial high risk sites as identified by the MS4 permit (i.e. SARA Title 3, TSD sites, etc.) once every 3 years.*

  New More Efficient Proposed Industrial Inspectino Program
  - *Re-inspect only industrial sites in which issues were noted during the original inspections and/or those involved with compliant investigations. Identify and perform inspections on industrial facilities (not required to be inspected by the original MS4 permit (i.e. auto salvage lots, ready-mix facilities, etc. not identified as SARA Title 3 or TSD facilities)). A list of industrial facilities to be inspected would be sent to the TDEC Nashville Field Office. Goal would be to inspect 10 industrial facilities each year.*

  Initial Findings:
  - *This process has proven to be much more effective as we have been able, during this transition period, to focus resources on industrial activities that have the highest potential for stormwater pollution such as Ready Mix Concrete facilities, chrome-plating facilities, etc. This new approach has allowed us to prioritize inspections and coordinate with TDEC field office staff as needed to perform co-inspections.*

Adjustments Made to New Approach
- *There are no proposed refinements to the new approach.*

- ***Post Construction Stormwater Control Measure (SCM) Inspection and Maintenance Oversight Program***

Previous MS4 Permit Requirements
- *Implement permittee-defined program by the end of year 5.*

New More Efficient Proposed SCM Inspection and Maintenance Oversight Program
- *Continue to respond to citizen complaints of SCM structures not being maintained properly. In addition, would inspect and enforce (if necessary) on at least 50 SCM structures per year. Currently and during the transition period, Metro will continue to build its SCM Inspection & Maintenance oversight process.*

Initial Findings:
- *Metros NPDES program has vastly expanded resources dedicated to ensuring post construction SCMs are being properly inspected and maintained. As it currently stands, Metro inspects an average of 75 SCM structures each month, which is well above the pace that we originally proposed. This new approach of focusing on NPDES program inspection findings and following-up with property owners on the proper maintenance has proven very beneficial to achieving maintenance on Post-Construction SCMs.*

Adjustments Made to New Approach
- *Metro is constantly evaluating the inspection and report documentation process and will continue to adjust the program, as necessary, to achieve the highest efficiency to ensure post-construction SCM structures are maintained properly.*

- ***Various MS4 Permit-Prescribed Monitoring Activities.***

Previous MS4 Permit Monitoring Requirements
- *Sampling programs (i.e. wet weather, ambient, visual stream assessments, etc.) prescribed in the permit to be completed on a 5 year permit term.*

New More Efficient Proposed MS4 Permit Monitoring Program
- *Discontinue the following sampling activities until the new MS4 permit is issued:*
  - *Wet Weather Homogenous Land Use Sampling*
  - *Wet Weather SCM Discharge Grab Sampling*
  - *Wet Weather Industrial Sampling (1 TMSP/RMCP site per year).*
- *Continue routine ambient monitoring/sampling programs (ambient chemical/bacteriological sampling and visual stream assessments) as well as any site-specific sampling as required in the course of routine investigations. The MWS Stormwater NPDES Watershed Group would coordinate with TDEC Nashville Field Office staff on monitoring schedules (which watersheds they will be monitoring during the transition period).*

Initial Findings:
- *Elimination of the wet weather monitoring has allowed for more resources to be spent on assessing streams for various impairments. Eight biological assessments have been performed on streams that Metro hadn't previously assessed. This provides a more comprehensive and up to date watershed assessment countywide and will additionally provide TDEC with more data than they would otherwise be able to collect. In addition to the biological assessment, nutrient samples are collected at the same time.*

- *Monitoring of 2 projects has been initiated and a total of 8 samples have been collected. Both of the projects are located on Cathy Jo Branch. One of the projects is a dam removal and the other is a retrofit to a stormwater outfall that reduced sheer flow during storm events. Samples were collected before work began and will continue in order to show the effectiveness of the projects.*
- *There have been 2 investigations within the past year as a result of our regular monitoring. Both of these investigations concluded that repairs needed to be made to sewers and thus we are preventing long term discharges to nearby streams.*

Adjustments Made to New Approach

- *There have not been adjustments made to the new approach. Projects are continually being considered for monitoring in order to show project effectiveness.*

Metro is requesting specific meetings to be arranged between appropriate TDEC permit writer staff and MWS Stormwater NPDES personnel so that these proposed changes can be explored and discussed.

Sincerely,

Michael Hunt
Metro Water Services, Stormwater, NPDES
Program Manager

Encl. - January 31, 2018 Letter to TDEC of Proposed Changes to MS4 Permit Compliance Activities. Attachment C of Year 5 MS4 Annual Report

CC:

April Grippo – TDEC Nashville Field Office
Jennifer Dodd – TDEC Central Office
Karina Bynum - TDEC Central Office
John Leffew – TDEC Nashville Field Office

Hayes, Joshua (WS)

From: Hunt, Michael (WS)
Sent: Friday, March 30, 2018 2:02 PM
To: 'Karina Bynum'
Cc: 'Jennifer Dodd'; 'Ann Morbitt'; 'Wade Murphy'; 'Robert Karesh'; 'Jimmy R. Smith'; 'April Grippo'; 'Bill Murph'; 'John Leffew'; Hayes, Joshua (WS); Dohn, Rebecca (WS); Bruce, Mary (WS); Binder, Dale (WS)
Subject: RE: 16NOV17 Meeting Follow-up
Attachments: Permit Re-issuance and Transition Period_TDEC_Update_Final.pdf

Good afternoon Karina:

Per your email below, find the requested info attached (red text on pages 2-4 of attached pdf). If you have any questions, don't hesitate to let us know.

Thanks, Michael

From: Karina Bynum [mailto:Karina.Bynum@tn.gov] **Sent:** Friday, November 17, 2017 9:44 AM **To:** Hunt, Michael (WS); Hayes, Joshua (WS); Dohn, Rebecca (WS); Bruce, Mary (WS); Binder, Dale (WS) **Cc:** Jennifer Dodd; Ann Morbitt; Wade Murphy; Robert Karesh; Jimmy R. Smith; April Grippo; Bill Murph; John Leffew **Subject:** 16NOV17 Meeting Follow up

Hello Michael,

Thank you for the invitation to meet and discuss the program update you send us on January 31, 2017, regarding the Transition Period for Metro's Stormwater Program. It was very helpful to hear from your staff about the program adjustments specified in the letter and to discuss the monitoring your program is undertaking. As you conclude the year of gathering information during the transition period, please compile your findings and send them to us in the first quarter of the year 2018. Please give us about a month to review and then reach out to us to schedule a meeting to discuss your findings.

Thank you,

TN Environment & Conservation

Karina Bynum, Ph.D., P. E. |Integrated Water Resources Engineer

Division of Water Resources

1221 South Willow Avenue, Cookeville, TN 38506

p. 931 - 520 - 6688

karina.bynum@tn.gov

tn.gov/environment

From: Hunt, Michael (WS) <Michael.Hunt@nashville.gov>
Sent: Tuesday, November 14, 2017 3:06 PM
To: Karina Bynum
Subject: letter....

***** This is an EXTERNAL email. Please exercise caution. DO NOT open attachments or click links from unknown senders or unexpected email. - STS-Security*****

Michael Hunt CSM, CPMSM, CPSWQ, CFM
Program Manager
Metro Water Services - Storm Water Div - NPDES Office
1607 A County Hospital Road
Nashville, TN 37218
Phone: (615) 880-2420
http://www.nashville.gov/stormwater/
If you see water pollution in Metro Nashville, call (615) 313-PURE or (615) 880-2420 or email stormwaterquality@nashville.gov

STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF WATER RESOURCES
Nashville Environmental Field Office
711 R.S. Gass Boulevard
Nashville, TN 37216
Phone 615-687-7000 Statewide 1-888-891-8332 Fax 615-687-7078

May 31, 2018

Mr. Scott Potter
Director of Metro Water Services
1600 2nd Avenue North
Nashville, TN 37208

Certified Mail Receipt
7014 2870 0001 3600 2906

RE: Compliance Evaluation Inspection
Nashville/Davidson County Municipal Separate Storm Sewer System (MS4)
NPDES Permit Tracking Number TNS068047, Davidson County

Dear Mr. Potter:

On May 16, 2018, Karina Bynum, John Leffew and Ann Morbitt with the Division of Water Resources (division) met with Michael Hunt, Rebecca Dohn, Joshua Hayes, Dale Binder, Steve Mishu and Shawn Herman with Metro Water Services to perform a routine Compliance Evaluation Inspection. The inspection included a review of regulatory mechanisms, records, procedures and other documents related to the construction site stormwater runoff control program required under the NPDES Permit TNS068047 for Discharges from the MS4 owned and operated by the Metropolitan Government of Nashville (Metro).

The construction site stormwater runoff control program is well established, the staff is trained and certified, and the program implementation is compliant with the requirements of the NPDES Permit TNS068047. The division greatly appreciates the time and commitment from your staff in their preparation before and participation during the inspection. Their availability and knowledge of the program ensured it was conducted in an efficient manner.

Permit Review
The NPDES Permit TNS068047 for stormwater discharges from Metro MS4 was issued and became effective on February 1, 2012. The permit expired on January 31, 2018, and has been administratively extended until a new permit is issued.

Records Review
The MS4 permit requires Metro to continue to implement and enforce its existing construction site stormwater runoff control program. The implementation of the following required elements was reviewed:

- Regulatory mechanisms requiring erosion prevention and sediment control for land disturbance greater than one (1) acre or less than one (1) acre if part of a larger common plan

of development are published in the Volume 1 of the *Metro's Stormwater Management Manual.*

- An inventory of all construction sites is provided in the City Works tracking system. All active sites are identified as priority sites and pre-construction meetings for all priority sites are held.
- Education of construction site operators is provided during certification classes for Erosion Protection Sediment Control (EPSC) professionals that are held in the Nashville region. Pre-construction meetings for all priority sites assure EPSC Level 1 is held by on-site operators.
- Control of waste materials is addressed in the stormwater management plan and is required in Volume 1 of the *Metro's Stormwater Management Manual* (section 6.10.8).
- Site plan review and approval procedures are coordinated with the plans review group. Qualified staff reviews plans. The review includes approval of the EPSC design and water quality buffers.
- Site inspections are conducted monthly for all priority sites. Enforcement procedures and all required sanctions are identified in the Enforcement Response Plan (Appendix D of the Stormwater Management Plan) and are outlined in the regulatory mechanisms published in the Volume 1 of the *Metro's Stormwater Management Manual.*
- Public input may be provided by phone, web page or public notice announcements.

Construction Site Visit
Site inspection procedures were evaluated by performing a site visit at the Magnolia Farms Subdivision construction site (TNR241924 and TNR242096). The stormwater program inspector, Shawn Herman, demonstrated a good working knowledge of erosion prevention and sediment control practices, and performed a comprehensive inspection with appropriate documentation and on-site communication.

Again, we would like to thank Mr. Hunt and his staff for the assistance and courtesy extended to us during our inspection. If you have any questions or need additional information, please contact John Leffew at the Nashville Environmental Field Office by email at john.leffew@tn.gov or by telephone at (615) 687-7106, or you may contact me by email at april.grippo@tn.gov or by telephone at 615-687- 7018.

Sincerely,

April Grippo
Environmental Manager
Division of Water Resources
Nashville Environmental Field Office

e-cc: Mr. Michael Hunt, Michael.Hunt@nashville.gov - Metro Water Services
Mr. John Leffew, john.leffew@tn.gov- DWR Nashville EFO
Ms. Ann Morbitt, ann.morbitt@tn.gov – DWR statewide
Ms. Karina Bynum, karina.bynum@tn.gov – DWR statewide
Ms. Jessica Murphy, jessica.murphy@tn.gov – DWR Compliance and Enforcement

STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF WATER RESOURCES
Nashville Environmental Field Office
711 R.S. Gass Blvd., Nashville, TN 37216
Phone 615-687-7000 Statewide 1-888-891-8332 Fax 615-687-7078

September 15, 2020

Mr. Scott Potter
Director of Metro Water Services
1600 2nd Avenue North
Nashville, TN 37208

Certified Mail Receipt
7014 2120 0004 1565 6563

RE: Compliance Evaluation Inspection
Nashville/Davidson County Municipal Separate Storm Sewer System (MS4)
NPDES Permit Tracking Number TNS068047, Davidson County

Dear Mr. Potter:

On July 16, 2020, Ann Morbitt and Karina Bynum with the Division of Water Resources (division) met virtually with Michael Hunt, Joshua Hayes, Kevin Turner, and Alicia Davis with Nashville Davidson County Metro Water Services to perform a routine Compliance Evaluation Inspection. The inspection was performed using WebEx and included a review of regulatory mechanisms, records, procedures and other documents related to the illicit discharge detection and elimination program required under the NPDES Permit TNS068047 for discharges from the MS4 owned and operated by the Metropolitan Government of Nashville (Metro). Following the inspection additional requested program documentation was provided to the division on July 24, 2020.

Overall, the illicit discharge detection and elimination program is well established, the staff is trained, and the program implementation is compliant with the requirements of the NPDES Permit TNS068047. Some updates to the program's Stormwater Management Plan and Enforcement Response Plan are required, specifically timeframes for complaint investigations and responses to public inquiries. The division greatly appreciates the time and commitment from your staff in their preparation before and participation during the inspection. Their availability and knowledge of the program ensured it was conducted in an efficient manner.

Permit Review
The NPDES Permit TNS068047 for stormwater discharges from Metro's MS4 was issued and became effective on February 1, 2012. The permit expired on January 31, 2017 and has been administratively extended until a new permit is issued. The Compliance Evaluation Inspection (CEI) for Metro's IDDE program covered compliance from the permit effect date, February 1, 2012, to the date of this CEI.

Records Review
The MS4 permit requires Metro to continue to implement and enforce its illicit discharge detection and elimination program. The implementation of the following required elements was reviewed:

- How Metro informs public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste specifically related to illicit discharges.
- How Metro processes are used to identify, prioritize and select opportunities for public involvement. Specifically related to illicit discharge identification and elimination.
- Ordinances, or other regulatory mechanisms, related to non-stormwater discharges

- Enforcement response plan and implementation procedures.
- Interagency coordination of hazardous waste or material spills response and cleanup.
- Mechanism for the public to report suspected illicit discharges.
- Summary of illicit discharge education and training.
- Updates to the illicit discharge identification and elimination procedures.
- Updates to the MS4 mapping and field screening plans.
- Identification of sanitary sewer overflows.
- Metro's mapping specific to priority areas with older infrastructure that are more likely to have illicit connections and areas with past illicit discharges.
- Metro's contacts and procedures for reporting an illicit discharge.
- Metro's education program for municipal field staff that identify illicit discharge or connection and reports/responses to the illicit discharge or connection.
- Implementation and improvements of the Stormwater Management Plan that determine whether non-stormwater entries are present in the storm drainage system and identification of locations and sources.
- Prioritization of areas for inspection and monitoring based on watershed or land uses or on previous field screening results, spills, complaints, illicit discharges, etc.
- Updates to illicit discharge identification procedures.
- Illicit discharges observed and samples necessary for source tracking.

Again, we would like to thank Mr. Hunt and his staff for the assistance and courtesy extended to us during our inspection. If you have any questions or need additional information, please contact Ann Morbitt by email at Ann.Morbitt@tn.gov or by telephone at (615) 687-7119, or you may contact me by email at Tim.Jennette@tn.gov or by telephone at 615-687- 7060.

Sincerely,

Timmy Jennette
Environmental Manager
Division of Water Resources
Nashville Environmental Field Office

e-cc: Mr. Michael Hunt, michael.hunt@nashville.gov - Metro Water Services
Mr. Josh Hayes, joshua.hayes@nashville.gov – Metro Water Services
Mr. John Leffew, john.leffew@tn.gov- DWR Nashville EFO
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Metro Nashville, Davidson County
Stormwater Management Plan

Prepared By:
Metro Water Services, Stormwater NPDES
1607 County Hospital Road
Nashville, TN 37218
(615) 880-2420

Created: July, 2013

Updates:
October, 2018
(Updates to internal SOPs, Program Changes from TDEC Compliance Inspection on the Construction Oversight Program)
July 23, 2020
(Updates from TDEC Compliance Inspection on the IDDE Section)

Note: All Updates are included in Appendix E. All these updates replace text in those sections of the Stormwater Management Plan.

Specific Updates to SWMP Requested by TDEC in a July 16, 2020 IDDE Compliance Evaluation Inspection

1. ***TDEC Suggestion* - Specifically list within the Stormwater Management Plan how Metro will accomplish the following language in Section 3.2.3 of the MS4 Permit:**

"The program shall require the equivalent of spill, prevention, control and countermeasure (SPCC) and/or storm water pollution prevention plans (SWPPP) for industries previously identified as having spills or fugitive releases -that currently have no such plans.."

- **The following section will be added to Section 3.3.2.1 Metro's MS4 Spill Response Summary.**

Most of the spills that Metro is notified of involve incidents on Metro and TDOT roadways. In the rare occasion that Metro is notified of a spill at an industrial facilty that, by TDEC and EPA rules, should have a Spill Prevention, Control, and Countermeasure (SPCC) plan and/or a Stormwater Pollution Prevention Plan (SWPP), Metro will perform the following actions:

- Require the facility to immediately take actions to remediate the spilled materials and submit a report of the clean-up measures that were undertaken within 2 business days.
- The industrial facility will be forwarded to the Metro-designated industrial facility inspector to perform a formal industrial inspection of the facility within 30 days of the spill.
- If the industrial inspection reveals that the facility lacks proper TMSP coverage or supporting TMSP documents or plans, Metro will notify TDEC of the non-compliance issue and require the site to obtain the proper coverage and develop the necessary plans. If the facility likely qualifies for non-exposure certification but contains oil storage of the amount required to have SPCC plans, Metro will direct the facility to prepare a SPCC plan per EPA regulations and to apply for non-exposure certification from TDEC.

2. ***TDEC Suggestion* – Metro should specifically address how they perform staff training for those individuals that are responsible for administering the IDDE programs.**

- **The following section will be added to Section 3.3.1.3 Illicit Discharge Education and Training Requirements**

All inspection staff within the Metro Water Services, Stormwater NPDES program are to receive the TDEC Level 1 EPSC training to assist in identifying illicit discharges associated with construction activities. Specific employees within the Metro Water Services, Stormwater, NPDES MS4 Permit Group are required to have

additional training focused on IDDE inspection and follow-up activities. The following is a summary additional training required for the MS4 Permit Group inspectors:

- The National Stormwater Center Certified Stormwater Inspector training or other equivalent training.
- Review of the following internal NPDES Office IDDE-Related SOPs and reference material.
    - Cityworks IDDE Documentation
    - Illicit Discharge Sampling
    - Stormwater NPDES Work Flow Process for Water Quality Complaint Routing
    - IDDE Complaint Response Documentation SOP
    - EPA illicit discharge investigation user's guide
    - Center of Watershed Protection -Illicit Discharge Detection Manual
    - National Urban Watershed Conference - Source Tracking of Inappropriate Discharges to Storm Drainage Systems
- At least five field training inspections with NPDES Senior staff.

C3&E4

Metro Nashville/Davidson County
Municipal Separate Storm Sewer System Permit
Enforcement Response Plan

Implemented by the:

MWS, Stormwater NPDES Office
1607 County Hospital Road
Nashville, TN 37218
615-880-2420

Created:
August, 2012

Updated:
November 15, 2016 - Added SCM Enforcement Section
November 22, Edited by Michael Hunt
August 2, 2017 DB updated due to ordinance BL2016-513
May 2, 2018 JH edited the SCM Enforcement Section
May9, 2018 JH revisions for MH Grammar Edits to SCM section
April 22, 2020 JH Revisions to IDDE Enforcement Procedures and Penalties and some Formatting
July 23, 2020 JH Revisions per Legal Comments and Comments from TDEC during the IDDE Compliance Evaluation Inspection

Introduction

The Stormwater National Pollutant Discharge Elimination System (NPDES) office is responsible for enforcing stormwater code. There are three distinct types of enforcement within the NPDES office. The first section of the Enforcement Response Plan (ERP) covers construction and development stormwater code violations. The second section of ERP covers stormwater code violation specific to illicit discharges regardless of whether they are from development properties or other sources. The final section explains the NPDES office enforcement measures for Post Construction Best Management Practice (BMP).

Section 1: Construction Related Violations:

1.1 NPDES Office EPSC Summary:

Adequate EPSC shall be required on Grading Permit erosion control plans prior to them being approved. Initial EPSC must be installed, inspected and approved prior to the grading permit being issued. Controls shall be proactively maintained (including required inspections by the permittee's EPSC Professional) during the project and until the site achieves final stabilization. EPSC that is found to be inadequate shall be upgraded by the permittee. EPSC inadequacies represent violations to Metro Code. Additionally, Metro NPDES permit obligations (per State and Federal statutes) require an effective Metro EPSC enforcement program to promote compliance.

1.2 General:

EPSC controls are expected to be installed and maintained per approved plans and associated specifications. Therefore, it is important that EPSC on approved plans be adequate. All site discharges are to be controlled in a manner that does not result in pollution.

If approved EPSC is found by NPDES staff to be inadequate once land disturbance activities commence, the permittee will be notified that enhanced BMPs are required.

Any infraction to Metro Code or the Metro Stormwater Management Manual (SWMM) is considered a separate violation that may be enforced upon.

1.3 Enforcement:

EPSC and maintenance of EPSC is the responsibility of the permittee per their Grading Permit requirements. EPSC maintenance records for a site should used if possible by NPDES staff to determine if enforcement is warranted (to delineate negligence vs. adequate controls that failed during latest rain event).

While weather (ongoing rain) is understood to impact some types of EPSC maintenance activities (i.e. heavy equipment use), it should not be considered to preclude all/interim

smaller scale EPSC maintenance efforts (such as using manpower to improve controls etc.).

Lack of EPSC BMP maintenance is a violation (per Metro SWMM). Illicit discharge of sediment due to inadequate EPSC is a violation.

1.4 Enforcement Tools:

Metro Code 15.64.020 grants the regulatory authority for the establishment of the SWMM. Under Metro Code 15.64.220(A), any violation of Chapter 15.64 regarding Stormwater Management, including a violation of the SWMM, is punishable by a civil penalty in an amount authorized by Tennessee Code Annotated, Section 68-221-1106. Each day of violation may constitute a separate violation (such as failure to maintain EPSC, illicit discharge and grading without a permit).

All compliance deadlines and requirements shall be clearly noted on all NOVs/SWOs. Deadlines should be set with the mentality that they will be enforced expeditiously.

Administrative penalty calculation should be based on the NPDES itemized penalty worksheet. A copy of this completed worksheet should be saved in the appropriate file.

The processing of stormwater bonds and grading U&O signoffs will be held until the site is in compliance. Additional grading permits will not be issued for other phases of the project if a portion of the site is in non-compliance. Site compliance status will be noted within the Cityworks database through flags or other notations.

All NOV/SWO's may be appealed by the person or entity upon which it was served. A hearing must be requested in writing to the issuing Director within ten (10) days of service of the NOV. If conditions under which a Stormwater Management Committee (SWMC) variance was approved are not met, a SWO may be issued. The SWO shall have a compliance deadline. If compliance is not achieved by the deadline, the matter will be taken to the SWMC for "show cause" hearing. The committee may rehear the variance with the possibility of revocation.

1.5 Documentation:

All inspections and associated contacts must be documented within the appropriate database (Cityworks or Cityworks PLL).

Photographs should be date stamped and/or noted in the inspector's field log and saved in the appropriate network file folder. Enough photographs should be taken to document the violation and the result of the violation. Photographs should be named by year-month-date-photo #. For July 10, 2012 photo 1 would be: 120710-1

1.6 Enforcement Categories:

Official Warnings (verbal or written): should be issued to EPSC professionals, Owners (holders of the Grading Permit), Contractors, and Developers verbally, via e-mail,

phone, and/or fax and should include the compliance deadline (that should take into consideration the next predicted rain event if the matter relates to possible sediment loss). These can be irrespective of when the last rain event occurred at the site. Official warnings are given for issues not rising to the level of enforcements outlined below. All warnings must stipulate the nature of the violation / potential violation and the required corrective action to include any deadlines. All correspondence should be documented in the appropriate database and any written document scanned/saved in the appropriate network file. It is not mandatory to give official warnings in advance of other categories of enforcements below. It is however suggested that the site be given as much notice as possible of any potential future site issues.

Notice of Non-Compliance (NON) (no penalty): issued to sites where EPSC is inadequate or in need of significant maintenance, but sediment loss has not been documented/observed at the site (but maintenance or upgrading is needed to prevent sediment loss during future rain events). If improvement is not made within 7 days or before the next rainfall the site may be subject to NOV with penalty. They may also be issued to smaller non-permitted sites such as single family residences in which there are no runoff issues.

NOV (with penalty): issued to sites where EPSC is inadequate or in need of significant maintenance, and sediment loss has been documented/observed at the site. They are issued to sites in which they have not met any past specified deadlines and are still in non-compliance from the warnings or NON listed above. They are also issued to sites found having general SWMM / grading permit violations as found under the itemized penalty worksheet.

To promote compliance, a penalty may be reduced in some instances, but no lower than 50 dollars, if it is documented that the site came into compliance prior to the deadline as stipulated by the conditions in the NOV. A typical reduction will be 50 percent of the original penalty. An example may be that the unpermitted fill was removed and the site was stabilized as required prior to the deadline. Any penalty reduction conditions will be clearly written on the NOV that is issued.

SWO (with penalty): Same conditions as NOV penalty in addition to; previously issued NOV compliance conditions have not been met within the stipulated deadline or site noncompliance issues necessitate immediate mitigation (items that must be corrected prior to other work proceeding at the site as the site is losing significant amounts of sediment as evidenced by downstream structures or conveyances). A SWO should be issued to all sites found to be grading without a permit.

Environmental Court: If an offender does not appeal but does not take the action required in a certified NOV/SWO letter or enforcement and/or is generally unresponsive to our requirements and deadlines despite our best efforts, the matter shall be taken to Metro Environmental Court. If they wish to dispute the NOV, they must file a timely appeal to the Director or his designee and then to the Stormwater Management Committee.

Enforcement Assistance Request to TDEC: TDEC receives an email notification of all Metro-issued construction site-related enforcements, however in addition, there may be occasions given the circumstances where TDEC needs to be notified for enforcement assistance. For violations relating directly to streams or the construction general permit TDEC should be immediately contacted. When a request for assistance is made, proper documentation must accompany the request. This documentation would include: photographs, copies of inspections, copies of correspondence, copies of enforcement actions taken, and a summary report.

Revocation: Upon notice and opportunity for a hearing, the Director of MWS may revoke any approval or grading permit issued under the provisions of the SWMM for any of the following reasons:

1. A false statement or misrepresentation of facts was made in the application or plans on which the permit or approval was based;
2. The developer or EPSC professional changes on a project without notifying MWS NPDES; or,
3. A permitted site has unpaid civil penalties that are delinquent by 60 days or more.

Penalty Multipliers: To promote compliance and to protect water quality, habitat, and floodplain storage penalty multipliers are incorporated within the itemized penalty worksheet.

Recording Enforcement Documents with Registrar of Deeds Office: If continued non-compliance becomes an issue, Metro Legal could be contacted for the potential to record the notice of violation, stop work order, or any other enforcement correspondence to the parcel(s) of the violation location. Please note that only certain documents are allowed to be recorded with the Register of Deeds and Metro Legal would review if those documents are acceptable. .

Withholding Approvals for Other Projects: We may as needed withhold approvals and grading permit issuance from any person, partnership, limited partnership, joint venture, corporation or any other type of business entity or related entity who has another grading permit project or building permit that is currently in violation of stormwater regulations. For purposes of this section, partnerships, limited partnerships, joint ventures, corporations or other type of business entities owned or operated by common person(s) or having common person(s) involved in the day-to-day operation of the business will be viewed as a related entity unless a significant change of control can be evidenced. This category will be used if there is continuous non-compliance and lack of response from the offender.

Overdue Penalty Collection: If penalties have not been paid in full by the specified deadline on the NOV then a written notice will be sent out reminding them of the overdue penalty within 14 days of missed deadline date. This notice along with the date of this notice should be documented in the database and on the NOV spreadsheet. If there are overdue penalties for a grading permit site, all future signoffs, bond requests and additional grading permits will not be processed by Stormwater staff until the penalties are paid. For penalties significantly overdue and found uncollectable, the parcel in which these penalties were assessed will be flagged with a hard hold by MWS

Development Services upon notice from NPDES Office of the specific need with supporting violation documentation. The flag will have comments noting the outstanding and overdue penalties. Overdue penalties in excess of $3000 will be sent to Metro Legal.

Table 1 – Grading Permit Violation Itemized Penalty Worksheet
Version Date: April-2020
Itemized Penalty Worksheet

Violation	Code / SWMM		Multiplier	Penalty	Total
Grading without a development related (large quantity)	15.64.140	yes = 1	0	$300.00	$0.00
	3.3	# of acres graded	0	$100.00	$0.00
					$0.00
Grading without a permit, non development related	15.64.140, 3.3	yes = 1	0	$50.00	$0.00
					$0.00
Failure to follow plan	4	yes = 1	0	$200.00	$0.00
					$0.00
Transporting fill to a non permitted site	6.10.8	yes = 1	0	$100.00	$0.00
					$0.00
Alterations in the 100yr floodplain	15.64.180, 5.5.6	yes = 1	0	$200.00	$0.00
					$0.00
Construction that may increase flooding	15.64.120	yes = 1	0	$200.00	$0.00
					$0.00
Water Quality Buffer disturbance	6.9	yes = 1	0	$200.00	$0.00
		habitat or sediment impaired stream yes = 1	0	$300.00	$0.00
		buffer disturbance >5,000 sqft yes = 1	0	$200.00	$0.00
					$0.00
Failure to install / maintain epsc	2.7, 6.10	yes = 1	0	$100.00	$0.00
		# of separate failure locations	0	$50.00	$0.00
		# of acres with exposed soils	0	$50.00	$0.00
					$0.00
Illicit discharge of sediment	15.64.205	yes = 1	0	$100.00	$0.00
	6.10.3	# of separate discharge points	0	$50.00	$0.00
		in watershed of sediment impaired stream yes = 1	0	$200.00	$0.00
		directly in sediment impaired stream yes = 1	0	$300.00	$0.00
					$0.00
Failure to have epsc professional for gp site	4.3.3	yes = 1	0	$200.00	$0.00
					$0.00
Failure to provide copies of inspection	4.3.3, 4.4.3	yes = 1	0	$200.00	$0.00
					$0.00
Failure to post permit	4.4.1	yes = 1	0	$50.00	$0.00
					$0.00
Failure to control construction waste	6.10.8	yes = 1	0	$100.00	$0.00
					$0.00
Areas not stabilized within 15 days	6.10.1	yes = 1	0	$50.00	$0.00
	6.10.4	#of acres not stabilized	0	$50.00	$0.00
					$0.00
Occupying bldg without sw certifications	15.64.110, 3.9	yes = 1	0	$100.00	$0.00
					$0.00
# of previous violations for same issues		List dates of previous NOVs issued	0	$200.00	$0.00
		"			$0.00
				PENALTY TOTAL:	$0.00

Section 2: Illicit Discharge Violations:

2.1 NPDES Office Illicit Discharge Summary:

Metro's Non-Stormwater Discharge Code (15.64.205) specifically prohibits all non-stormwater discharges (except those exempted in the code) into community waters, into the waters of the state, or into the Municipal Separate Storm Sewer System (MS4). Additionally, the MS4 permit obligates Metro (per State and Federal statutes) to implement programs, including enforcement, that eliminate such discharges to streams and rivers. This section of the ERP details standard protocol to be followed for enforcement for violations to Metro's Non-Stormwater Discharge Code.

2.2 General Response and Timeframes:

The NPDES Office discovers illicit discharges to the MS4 system utilizing a variety of methods such as routine inspections, citizen complaints, proactive reconnaissance, etc. Some of the more typical illicit discharges include: wash water, sewage, industrial process wastewater discharges and contaminated runoff, paint, sediment, etc. Once discovered, the NPDES Office implements the below enforcement measures in order to gain compliance. In general the following timeframe for responding to complaints or discoveries of illicit discharges will be followed:

Investigation Timeframes:

- All emergency spills or complaints involving large active discharges/impacts to the MS4 or Community Waters should be investigated immediately, but at a minimum, within the same day.
- All other spills, water quality complaints, or other discoveries of potential illicit discharges should be investigated within 2 business days.
- All customers who leave their contact information should be notified within 2 business days of the investigation findings and follow-up actions that will be taken by the NPDES office. In some cases, the complainant should be contacted prior to the investigation to obtain any pertinent information that wasn't included in the original complaint.
- Upon discovery of active illicit discharges, responsible parties should be directed to eliminate the discharge immediately (within 24 hours). There are some instances where responsible parties for illicit discharges take more than 24 hours to confirm or repairs that have to done to eliminate the illicit discharge will take longer than 24 hours. In those cases, all communications or enforcement proceedings with the responsible parties should include specific timeframes that the illicit discharges should be eliminated by.

2.3 Enforcement Proceedings:

Calculation of the monetary penalties associated with illicit discharges can be assessed up to $5,000 per day, per Metro code. For the most part construction site violations are

to be calculated using the penalty calculation in Table 1; however, in significant sediment loss situations, the penalty calculation found in Table 2 below can be used. Enforcement can range from official warnings to issuance of Notices of Violations with Administrative Penalties.

2.4 Enforcement Categories/Steps

Public Education: In some instances, where the potential for contaminated stormwater runoff from the site is low, but there are exposed contaminants on the property, Metro will perform public education prior to issuing official enforcement. All public education communications are logged into the Public Involvement/Education (PIE) database.

Notice of Non-Compliance: Notices of Noncompliance (NONs) are to be issued during the discovery of *negligible* discharges to the MS4/community waters, especially when the discharge is unintentional (i.e. spill, sewer line break, etc.). Negligible discharges are determined by the Best Professional Judgment of the inspector, but are generally small amounts of pollutants that represent minor impacts to the MS4 or Community Waters. Usually, in these cases, the biggest threat to water quality is the potential for contaminated runoff during rain events, which makes it extremely important to issue warnings to the site to expedite compliance. In most cases, the warning should be written on the standard Notice of Noncompliance (NON) form or an official letter on Metro letterhead. The Notice of Noncompliance should include specific deadlines and compliance measures to be performed by the responsible party and should list what administrative penalty will be assessed with an NOV if compliance is not achieved by the expected date. Some examples of illicit discharge violations subject to issuances of NONs include, but are not limited to:

- Pressure washing with negligible impacts to the MS4 or Community Waters;
- Private sewer service line break or missing clean-out cap with negligible discharges to the MS4 or Community Waters ;
- Spills with minor amounts with negligible impacts to the MS4 or community waters;
- Materials exposed to stormwater runoff (messy dumpster pads, fats or grease on ground, open containers of oil, etc.);
- Dumping of non-stormwater materials that represent negligible impacts to the MS4 or Community Waters.

Notice of Violation (with administrative penalty): Notices of Violations (NOVs) with administrative penalties should be issued when intentional actions by individuals or entities are causing a *significant* impact to the MS4 or community waters. The inspector will utilize best professional judgment to determine if a discharge is resulting in a *Significant Impact* to the MS4 or Community Waters. Generally a *Significant Impact* means that the individual discharge is causing direct/measurable impact on the MS4 or receiving waters. Intentional actions can include knowingly dumping materials or prolonging remediation of discharged non-stormwater product after being notified by NPDES.

NOVs should also be issued when compliance is not achieved in the NON process, described above for discharges resulting in "negligible impacts" to the MS4 or community waters.

Every NOV issued will be accompanied with a completed penalty assessment worksheet. All issued NOVs will include the assessment of administrative penalties based on various factors delineated in Table 2. A NOV shall clearly state the required remediation for the violation and timeframe for compliance, which should be immediately (within 24 hours) unless extenuating circumstances exist. In most cases, the electronic NOV ticket shall be utilized; however, in some cases a formal letter on Metro letterhead can serve as the NOV. Some examples of illicit discharges that will be subject to a formal NOV include the following:

;

- Dumping of motor oil or other hazardous chemicals resulting in significant impact to the MS4 or community waters;
- Washing out paint brushes or other construction materials resulting significant impact to the MS4 or community waters;
- Discharge of pit pump water or wet saw cutting slurry resulting significant impact to the MS4 or community waters;
- Washing out concrete truck trays resulting significant impact to the MS4 or community waters;
- Discharge of industrial process water (without an NPDES permit) resulting significant impact to the MS4 or community waters;
- Significant amount of contaminated stormwater runoff from private property resulting significant impact to the MS4 or community waters.

Notice of Violation (NOV) (with daily penalties): to be issued only in rare cases when, for whatever the reason, the site refuses to comply with the first NOV and as a result, a substantial amount of non-stormwater material is being lost to the MS4 or community waters every day or every time it rains. In the cases where pollution only occurs every time it rains, the daily penalties shall only apply to the days rain occurs. Daily penalty amounts are to be calculated using Table 2.

Holding Future Development Permits: If an offender refuses to bring a site in to compliance and/or is unresponsive, a hard hold can be placed on the parcel in Cityworks to prevent any future permitting for that property until compliance is achieved;

Environmental Court: If an offender does not appeal but does not take the action required in a certified NOV/SWO letter or enforcement and/or is generally unresponsive to our requirements and deadlines despite our best efforts, the matter shall be taken to Metro Environmental Court, seeking an injunction. If they wish to dispute the NOV, they must file a timely appeal to the Director or his designee and then to the SWMC.

Enforcement Assistance Request to TDEC: TDEC receives an email notification of all Metro-issued -related enforcements, however in addition, there may be occasions given the circumstances, where TDEC needs to be notified for enforcement assistance. For

violations involving significant discharges to streams, TDEC should be immediately contacted. When a request for assistance is made, proper documentation must accompany the request. This documentation would include: photographs, copies of inspections, copies of correspondence, copies of enforcements taken, and a summary report. Note: TDEC shall also be notified if any discharges impact "Waters of the State"

2.5 Documentation:

All correspondence should be documented in the appropriate database (i.e.Cityworks) and any photographs, scanned-in field investigation notes, etc. should be stored within the appropriate project folder. For illicit discharge documentation not related to industrial inspections or grading permit sites, all project folders should be stored within the following directory: S:\Cityworks\NPDES\SR Project folder names within the directory shall follow the below example:

County Hospital Road, 1607 (paint dumping)

There should always be a database entry of any official notification given to a site. In the event that the official notification is in the form of a verbal warning, the NPDES inspector shall note the verbal warning on the complaint investigation form and within the respective database.

Table 2 – Illicit Discharge Penalty Calculation Worksheet
Version Date: July-2020

Note: Biological health hazard is based on the potential damage the discharge can do to aquatic live in the stream.

Offender Category	Discharge Type	Penalty	Estimated Volume Multiplier <10 gallons = 1 10 to 100 gallons = 2 100 to 1,000 gallons = 3 > 1000 gallons = 5	Biological Health Hazard Multiplier Minor = 0 Major = 3	Prior Notice Multiplier No Prior Notice = 0 Prior Notice = 2	Penalty	Total
Accidental Spill/Discharge	Clean-up prolonged negligable impact to MS4 or Community Waters	$100.00				$100.00	$0.00
	Clean-up prolonged and significant impact to MS4 or Community Waters	$250.00				$250.00	$0.00
Private Residence	Household Chemicals (Paint, cleaners, oils, batteries, pesticides)	$100.00				$100.00	$0.00
	Food Waste/Grease	$100.00				$100.00	$0.00
	Significant Impact to the MS4 or Community Waters from Dumping of Grass Clipings/Organics	$50.00				$50.00	$0.00
	Sewage/Wash Water with Detergents	$100.00				$100.00	$0.00
	Sediment	$100.00				$100.00	$0.00
	Significant Impact to the MS4 or Community Waters from Chlorinated Pool Water Discharges	$50.00				$50.00	$0.00
Commercial/Industrial	Industrial Waste	$500.00				$500.00	$0.00
	Hazardous Chemicals (Paint, cleaners, oils, batteries, pesticides, floor wax, etc.)	$300.00				$300.00	$0.00
	FOG material	$100.00				$100.00	$0.00
	Significant Impact to MS4 or Community Watersf Mop water/Parking lot wash water with detergents	$100.00				$100.00	$0.00
	Other Contaminated Stormwater Runoff	$50.00				$50.00	$0.00
	Knowingly Discharging Sewage Materials	$250.00				$250.00	$0.00
	Dumpster leakage to MS4	$100.00				$100.00	$0.00
Construction Site Illicit	Concrete Washout	$500.00				$500.00	$0.00
	Pumped Sediment Water	$500.00				$500.00	$0.00
	Sediment Contaminated Runoff	$500.00				$500.00	$0.00
Typical Contractor-Related Discharges	Significant Discharge of Parking Lot/Building Wash Water with Detergents	$100.00				$100.00	$0.00
	Wastewater Discharges (Carpet cleaning, floor waxes, etc.)	$250.00				$250.00	$0.00
	Significant Discharges of Wet Saw Slurry/Pit Pumping Water with No Efforts to Treat the Water	$100.00				$100.00	$0.00
	Concrete Washout	$250.00				$250.00	$0.00
	Other (paint, motor oil, etc.)	$250.00				$250.00	$0.00
					Total Penalty (Not to Exceed $5,000)		$0.00

Section 3 : Post Construction SCM Maintenance Violations

3.1 General Considerations
Maintenance is required to ensure that post construction stormwater control measures (SCMs) continue to function as designed. The cleaning and/or repair of a SCM are the ultimate responsibility of the property owner. In some cases, management companies and HOAs perform the work or contract it out.

3.2 Enforcement Tools:
Metro Code 15.64.020 grants the regulatory authority for the establishment of the SWMM. Under Metro Code 15.64.220(A), any violation of Chapter 15.64 regarding Stormwater Management, including a violation of the SWMM, is punishable by a civil penalty not to exceed $500.00 dollars. Each day of violation may constitute a separate violation.

A Maintenance Document (MD) signed by the property owner must be submitted with the Grading Permit application. The MD includes either an Inspection and Maintenance (I&M) Agreement or a Declaration of Restrictions and Covenants. Both of these documents require that the property owner maintains their SCM(s), submits annual reports detailing inspection and maintenance activities, and grants Metro the ability to perform the SCM maintenance and collect reimbursement. Sites approved prior to the 2006 revision of the SWMM do not have the annual reporting requirement.

3.3 Non-Reporting Consequences:
As mentioned above, some of the new structures installed per the latest regulations require the owner to perform annual inspections and reporting. A site's reporting compliance status may be considered by NPDES as personnel prioritize inspections.

3.4 Site Follow-up, Coordination, and/or Enforcement:
NPDES bases all enforcement proceedings on the "field" conditions of SCM structures (conditions observed and documented by NPDES inspectors). NPDES provides a copy of the inspection form (in-person) when a representative is available at the property to receive it. In many cases, there are no representatives at the property with the SCM. When NPDES observes non-compliance issues that need follow-up actions, NPDES will attempt to locate either an email, phone number, and/or address for the responsible party and send a letter or email summarizing the inspection findings and required compliance actions. NPDES provides a reasonable timeframe (two or more months) to complete any compliance actions. After the compliance deadline expires, NPDES will re-inspect and determine if any compliance activities have taken place. If no activities have taken place, NPDES will issue a 10-day notice letter to the property owner that

states enforcement proceedings will be initiated if compliance actions are not completed and/or feedback is not received.

If, after the above described coordination efforts result in no compliance actions being taken, NPDES will initiate the SCM Enforcement Process. A standard Notice of Noncompliance (NON) form should be issued as a first enforcement step. The standard NON template should be utilized as the first step of enforcement and should be sent via certified mail. The NON will list the deficiency and give a timeline for compliance and will include a copy of the plans, photos of the structure and the maintenance document. If a site cannot meet their compliance deadline for a legitimate reason (e.g. weather, hardship), they may request an extension.

If compliance is not achieved by issuance of the NON, enforcement may then be elevated to an official Notice of Violation (NOV) with associated administrative penalties. The initial administrative penalty will be $100 per each structure with maintenance issues. If the site fails to comply with the initial NOV, a second and third NOV could be issued with an administrative penalty multiplier of 2.5 for each subsequent violation. (Not to exceed $500.00 per structure) If the site fails to comply after issuance of 3 NOVs, then the inspector must choose the best course of action from the following enforcement options:

- Environmental Court – Injunction;
- Placing a "Hard Hold" in Cityworks on any future permitting for that property;
- Recording Enforcement Documents with Registrar of Deeds Office; and
- Performing Maintenance with Metro Equipment and Billing the Property Owner.

SCM Notice of Noncompliance Template

Metro Water Services, Stormwater NPDES
1607 County Hospital Road
Nashville, TN 37218
Office: 615-580-2420
Fax: 615-580-2425
Email: mws.scm@Nashville.gov

NOTICE OF NON-COMPLIANCE

Business Name / Residential Property Location:

_____ Address/STANPAR: _____

Site Representative/Property Owner: _____ is hereby served with this Notice of Non-Compliance on: ___/___/___ for failure to maintain a **Stormwater Control Measure(s) (SCM)** per the Maintenance Agreement Instrument Number: _____ that was recorded with the **Deed** of the property. The **SCM(s)** on your property was installed during previous development/redevelopment activity, which obtained a Grading Permit from the Metro Water Services, Stormwater Division. The Grading Permit Number associated with your parcel's development activity was: _____. As a condition of the grading permit, the permanent **SCM(s)** was installed to prevent downstream flooding and stormwater pollution. Inspection and maintenance agreements, which were recorded with the **Deed** of your property, require the property owner **(not Metro)** to perform the required inspection and/or maintenance associated with the **SCM(s)** on your property, so that it continues to function as it was designed. A copy of the inspection and maintenance agreement for your parcel can be obtained from the Davidson County Register of Deeds website at the following link: http://www.registerofdeeds.nashville.org/recording/

Description of Non-compliance Maintenance Issues:

Required Corrective Actions to be Corrected By: _____

(Please note, failure to perform the required maintenance could lead to additional enforcement that may include the assessment of administrative penalties as defined in Metro's Code (Depicted on Next Page)

Notification Delivered Via: _____

This notice served by: _____ **Date and Time** ___/___/___ **at** ___:___ am/pm

Stormwater, NPDES Dry Detention Maintenance Policy Strategy

Policy Need	Initial findings of inspections of older Dry Detention Ponds has revealed that there are numerous ponds that are completely overgrown with mature tree species. In many cases, these ponds are not holding water and are draining within the design timeframe of 72 hours after a rain event. The main impact of the overgrown trees within the pond appears to be reduced stormwater storage. Requiring these mature trees to be removed may cause more damage to water quality that benefit gained to water quantity storage.
Policy	For dry detention ponds that are completely overgrown with mature tree species (individual specimens greater than 6 inch diameter), NPDES inspectors will use their Best Professional Judgement to determine if the overgrown vegetation will pose a threat to public safety, stormwater flooding, and/or downstream water quality conditions. Specific issues to note include the pond containing pooled or inundated water for a period substantially longer than 72 hours after a rain event, damaged or failing outlet structures and/or pipes, and severely eroded/wash-out areas on the pond banks. At a minimum, NPDES shall require all woody vegetation (regardless of the diameter size) growing within a 20-foot radius of the outlet structure to be removed without causing damage to the outlet structure. At a minimum, NPDES shall require any trees growing near inlets into the ponds that are causing water to back-up or form side channels to be removed. At a minimum, NPDES shall require all structurally-damaged pipes, outlet structures, etc. to be repaired. At a minimum, NPDES shall require obstructions preventing water from draining from the pond to be removed so that the pond effectively drains within a 72 hour period following a storm. At a minimum, NPDES shall require all severely eroded or wash-out areas to be repaired to prevent unnecessary sediment runoff and potentially failing pond banks.
Policy Date	Created 5/2/2018

METRO WATER SERVICES

Stormwater, NPDES Bioretention Maintenance Policy Strategy

Policy Need	Inspection results of Bioretention Basins has revealed numerous maintenance issues to be present sometimes as short as one year since grading permit sign-off. A vast majority of these basins do not receive the necessary (frequent) routine maintenance required to maintain the desired/designed plant cover or diversity as described in the site's specific Long-term Maintenance Plan. The below issues are commonly found during inspections: • Mulch completely washed out • Biomedia is compacted and negatively affecting infiltration rates • Erosion present at the curb-cuts or inlets • Over-mulching occurred, reducing the detention volume • Planted vegetation overtaken by recruitment invasive vegetation. • Signs that the bioretention basin is ponding water for extended periods. • Bioretention is being maintained as mowed grass with commercial mowers, likely compacting subsurface.
Policy	NPDES inspectors will use their Best Professional Judgement to determine the level of maintenance needs during their inspection, which will, in turn, determine the compliance follow-up steps to perform. The decision will be based solely on the functionality of the bioretention basin. The below guide should be used to determine the maintenance status of the bioretention: (Also refer to additional pages for some photo examples) • **Minor** – Vegetation or mulch problems exist, but still appears to be functioning as there are no signs in the basin overflowing or bypassing. ***No inspection letter needed, but if someone is present, talk to them about the issues***. - Overgrown with vegetation not planted - Mulch washed out • **Moderate** – Moderate to major erosion, minor sediment accumulation, or other vegetation management techniques observed, if left unchanged, could lead to major problems down the road, but overall, the basin appears to be functioning. ***Initial inspection letter to be sent, but if compliance is not achieved after two attempts, shall not elevate to enforcement.*** - Moderate erosion at curb cuts or inlets that could be adding sediment loads to the basin. - Basin being managed as a turf basin, possibly being mowed by commercial mowers compacting soil media. - Little to no vegetation present. • **Major** –It appears the basin is either bypassing, ponding water for extended periods of time, or water is routing directly to the overflow due to over mulching or other conditions. ***Inspection letter to be sent with a required timeframe for repairs. Failure to gain compliance after two formal communication attempts (letters, emails), shall be elevated to enforcement action.***
Policy Date	Created 9/30/2019

Example Photographs of some of the Issues and Rankings

Minor Issues:. Vegetation or mulch problems exist, but still appears to be functioning as there are no signs in the basin overflowing or bypassing.

Moderate Issues: Moderate to major erosion, minor sediment accumulation, or other vegetation management techniques observed, if left unchanged, could lead to major problems down the road, but overall, the basin appears to be functioning.

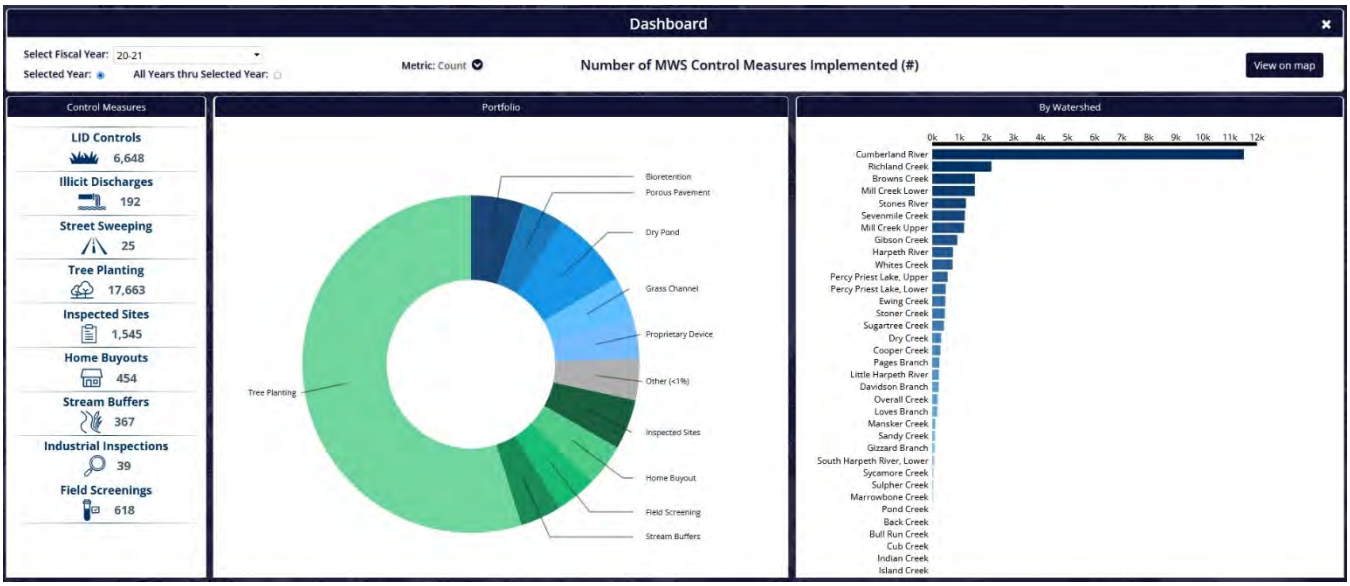
ATTACHMENT C – WIES Database Pollutant Loading Reduction Estimates of SWMP

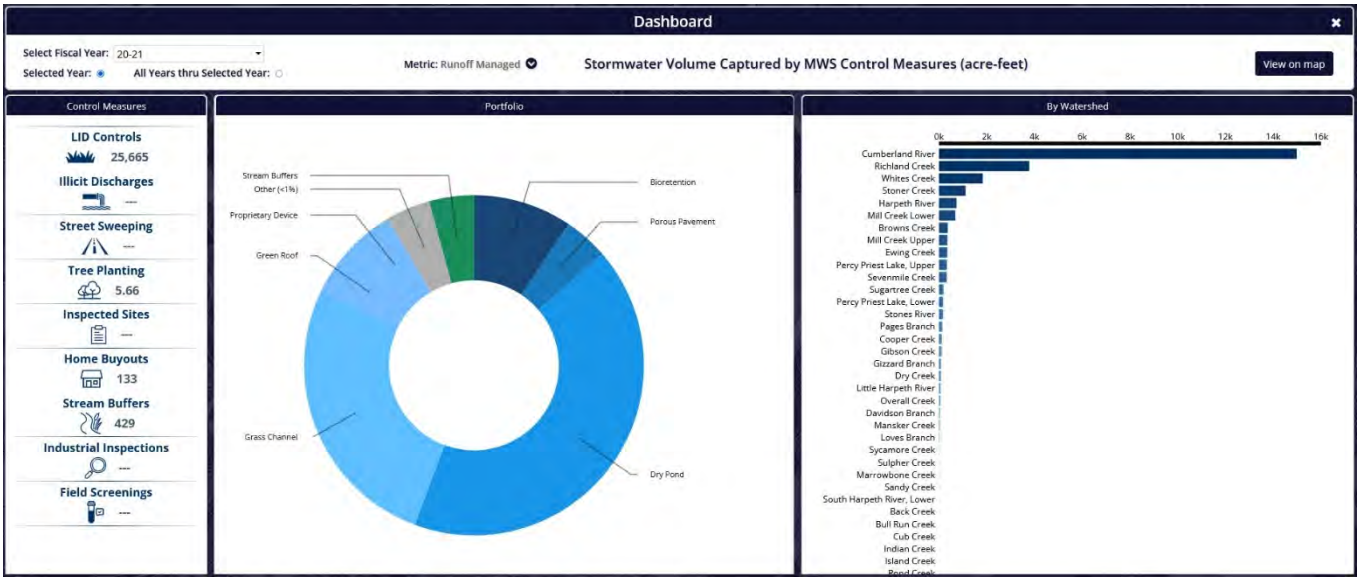
As required in Section 3.3.2 of the MS4 Permit, Metro is required to develop Event Mean Concentrations (EMC's) for all parameters listed in Table 2 of the MS4 Permit. In year 5 of the MS4 permit, Metro was required to report Seasonal Pollutant Loadings (SPL) from the MS4. The methodology for performing this calculation can be found in the year 5 annual report. In performing this calculation, Metro hired a contractor (Paradigm Environmental) to not only develop the EMC and SPL calculations, but to generate a database that would allow Metro to produce reports on estimated SPLs for each sub-watershed within Metro's jurisdiction on an annual basis. As such, the web-based Davidson County Watershed Improvement Evaluation System (WIES) database was developed which also gives Metro the ability to track stormwater loading reductions achieved through the implementation of Metro Nashville's SWMP. These calculations/estimations are based on structural and non-structural stormwater controls that Metro implements as prescribed by the MS4 permit.

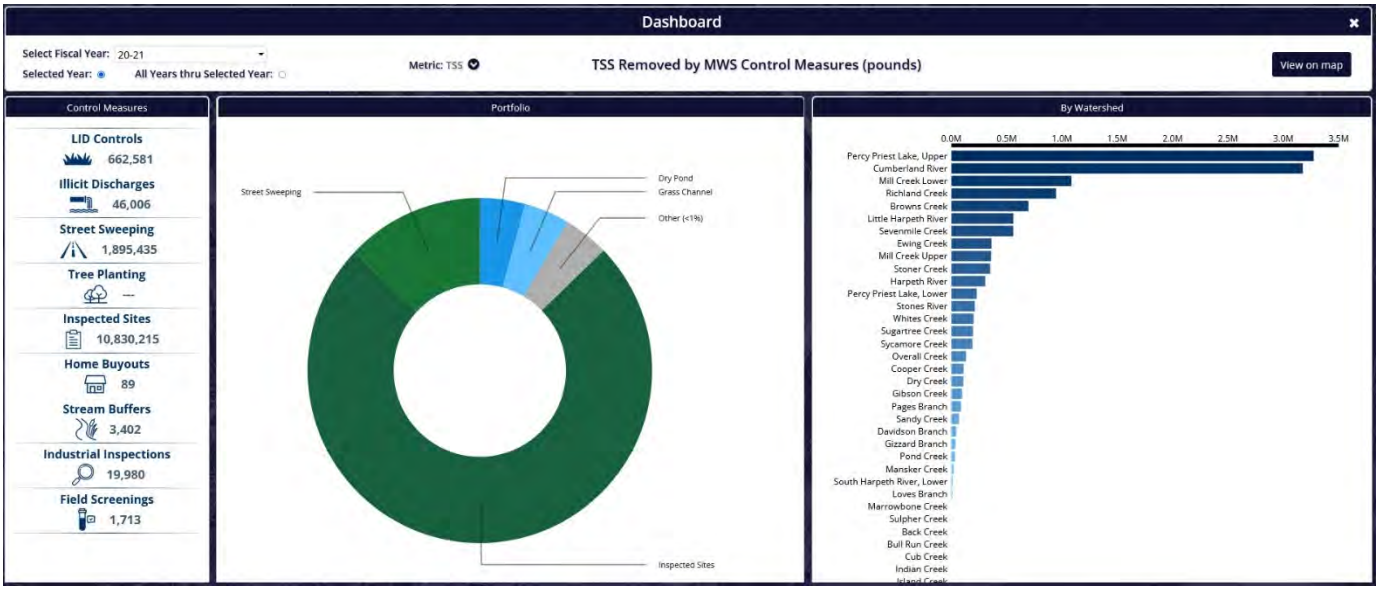
While these calculations are considered to be estimates, our contractor utilized all available documentation from Metro's tracking databases as well as the latest hydrologic modeling programs to refine the estimates as much as possible. For example, stormwater pollutant and volume reduction numbers for structural SCMs were calculated utilizing Loading Simulation Program – C+ (LPSC) and System for Urban Stormwater Treatment Analysis and Integration (SUSTAIN) modelling programs which take into account varying land uses and mapped soil types for each watershed and the pollutant and performance efficiencies of each types of SCMs. The modeling for SCMs even considers the effects underdrains have on bioretention basins as far as how much runoff reduction is accomplished.

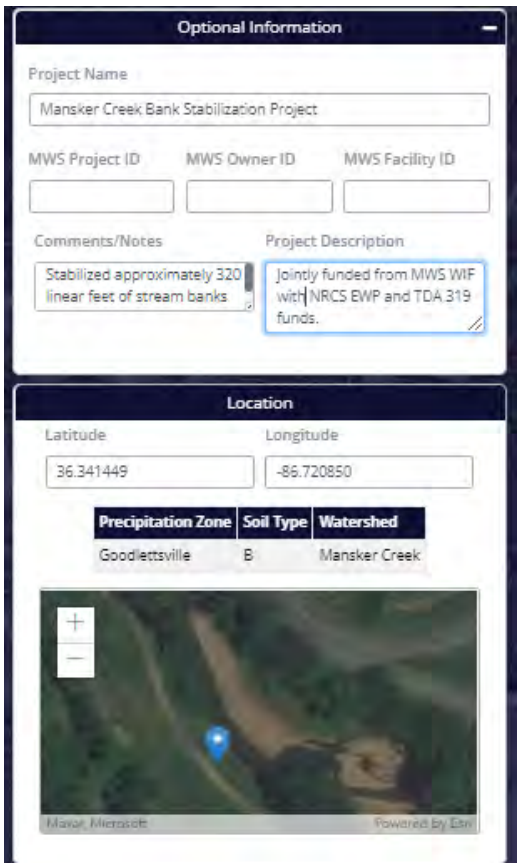
Metro expends many resources implementing non-structural stormwater control measures of the SWMP, such as the IDDE program, construction inspections and oversight, FEMA home buyout program, street sweeping program, etc. While we know these non-structural programs have been extremely beneficial in improving the quality of water resources within Metro Nashville/Davidson County over time, it has proven difficult to quantify the loading reductions of these non-structural controls. WIES tracks pollution reduction efforts of these non-structural programs by importing data from various Metro databases that track items such as number of construction sites inspected, number of water quality complaint investigations, number of FEMA floodplain buyout properties, etc. In some of these programs, assumptions are applied so loading reduction can best be effectively calculated. Over the coming years, Metro expects to further refine documentation within our databases to eliminate some of these assumptions and improve the accuracy of the calculations. The tables within this section depict the calculated SPLs per each sub-watershed and the estimated loading reduction efforts of the SWMP over the last permit reporting period (fiscal year). Please note that importing data into WIES is somewhat dependent on geo-location information available within Metro's databases, which is the source of the data export. Due to this, there may be a small discrepancy in numbers between WIES and the actual Metro documentation databases when some data is unable to be imported into WIES. For example, not all of the tree planting numbers could be imported into WIES this year due to lack of some geolocation data available from the Metro database.

In addition to the annual reporting tables Metro is able to generate dashboard views on various SWMP loading reductions, WIES also gives stormwater managers the ability to review the pollution and runoff reduction effects of individual structural SCMs through a dashboard view of a variety of different parameters (depicted below).









Pollutant	BMP Effect	Load Unit	Estimated Inflow Concentration	Concentration Unit
E. coli	4.8	MPN 10e9	2419	MPN/100 mL
BOD5	1.05	lbs	2.4	mg/L
COD	21.02	lbs	48	mg/L
NH3	0.04	lbs	0.08	mg/L
TKN	0.29	lbs	0.66	mg/L
NO2+NO3	0.13	lbs	0.29	mg/L
TN	0.38	lbs	0.87	mg/L
Diss P	0.2	lbs	0.45	mg/L
TP	0.32	lbs	0.74	mg/L
Pb	0	lbs	1.5	ug/L
Ni	0	lbs	5.2	ug/L
Zn	0.01	lbs	16	ug/L
Cr	0	lbs	2.8	ug/L
Cu	0	lbs	4	ug/L
O&G	1.49	lbs	3.4	mg/L
TSS	11.82	lbs	27	mg/L

WIES Calculated MS4 Program Pollutant Loading Reductions in FY21

The below tables represent the calculated Pollutant Loading Reductions in each watershed from implementation of the MS4 Program Elements.

Watershed	Year	MWS Control Measure Implementation during Fiscal Year											
		SCMs Built (#)	Total SCMs in Watershed at end of FY (#)	Construction Sites Inspected (#)	IDDE Complaints Investigated (general pollution and construction runoff) (#)[1]	Street Sweeping (tons)	Homes Bought (#)	Total Homes Bought in Watershed at end of FY (#)	Trees Planted (#)	By Stream Buffers (#)	By Industrial Sites Inspected (#)	By Field Screenings (#)	Root Nashville Trees Planted In Watershed by end of FY (#)
All Watersheds	FY21	476	6,648	1,545	192	4,513	24	454	7,888	367	155	1,365	17,663
Back Creek	FY21	0	0	0	0	0	0	0	0	0	0	0	0
Browns Creek	FY21	28	344	125	18	185	0	37	386	6	16	20	1,021
Bull Run Creek	FY21	0	0	0	0	0	0	0	0	0	0	0	0
Cooper Creek	FY21	1	90	44	1	54	0	5	58	3	0	0	156
Cub Creek	FY21	0	0	0	0	0	0	0	0	0	0	0	0
Cumberland River	FY21	197	2,138	706	39	1,033	1	70	4,183	55	63	270	8,452
Davidson Branch	FY21	2	49	19	1	14	0	0	89	0	0	5	170
Dry Creek	FY21	5	61	9	3	59	0	4	192	6	3	44	241
Ewing Creek	FY21	9	194	15	6	158	0	29	64	20	5	39	215
Gibson Creek	FY21	1	74	11	8	59	3	57	171	2	1	49	773
Gizzard Branch	FY21	2	47	3	0	14	0	0	15	2	2	16	32
Harpeth River	FY21	34	269	18	10	293	0	3	297	25	0	27	437
Indian Creek	FY21	0	0	0	0	0	0	0	0	0	0	1	0
Island Creek	FY21	0	0	0	0	0	0	0	0	0	0	0	0
Little Harpeth River	FY21	3	66	8	1	18	0	0	49	9	0	0	161
Loves Branch	FY21	0	26	2	0	18	0	1	127	0	0	6	157
Mansker Creek	FY21	0	38	6	0	0	0	0	40	3	3	17	66
Marrowbone Creek	FY21	0	9	0	3	0	0	0	12	0	0	0	14
Mill Creek Lower	FY21	25	543	46	26	573	9	47	226	31	20	277	664
Mill Creek Upper	FY21	34	443	15	7	171	0	2	26	42	1	90	599
Overall Creek	FY21	1	70	6	3	9.03	0	1	15	11	4	3	104
Pages Branch	FY21	15	86	23	6	68	0	7	3	4	5	0	136
Percy Priest Lake, Lower	FY21	6	186	8	7	366	0	6	62	5	0	96	193
Percy Priest Lake, Upper	FY21	27	252	15	10	50	0	0	51	37	5	152	112
Pond Creek	FY21	0	0	1	1	0	0	0	0	0	0	0	0
Richland Creek	FY21	26	514	257	8	316	1	69	724	17	14	37	1,317
Sandy Creek	FY21	7	23	43	1	18	0	0	24	0	2	1	24
Sevenmile Creek	FY21	14	325	40	9	338	4	36	166	19	4	34	749
South Harpeth River, Lower	FY21	0	15	6	3	14	0	0	37	4	0	6	37
Stoner Creek	FY21	5	209	9	4	271	1	10	156	11	3	83	217
Stones River	FY21	16	163	25	6	176	0	0	468	13	1	83	1,001
Sugartree Creek	FY21	5	199	55	4	77	0	1	125	5	0	7	166
Sulpher Creek	FY21	0	14	0	1	0	0	0	9	0	0	0	14
Sycamore Creek	FY21	2	15	2	0	0	0	0	5	9	0	0	5
Whites Creek	FY21	11	186	28	6	162	5	69	108	28	3	2	430

Note: Some of the tree plantings were not included in WIES as they did not properly geolocate.

Watershed	Year	Pollutant: Runoff Load Removal by MWS Control Measure Implementation during Fiscal Year (acre-foot)									
		By LID Ordinance / SCMs [1]	By Construction Sites Inspected [2]	By Illicit Discharge Program [2]	By Street Sweeping [2]	By Home Buyout Program [1]	By Trees Planted [1]	By Stream Buffers [1]	By Industrial Sites Inspected [2]	By Field Screenings [2]	**Total Pollutant Load Removed from Watershed** (ac-ft)
All Watersheds	FY21	25,665	0	0	0	133	5.66	429	0	0	26,233
Back Creek	FY21	0	0	0	0	0	0	0	0	0	0
Browns Creek	FY21	360	0	0	0	8.97	0.32	2.92	0	0	372
Bull Run Creek	FY21	0	0	0	0	0	0	0	0	0	0
Cooper Creek	FY21	110	0	0	0	4.11	0.04	0.72	0	0	115
Cub Creek	FY21	0	0	0	0	0	0	0	0	0	0
Cumberland River	FY21	14,883	0	0	0	24	3.3	78	0	0	14,988
Davidson Branch	FY21	45	0	0	0	0	0.05	0	0	0	45
Dry Creek	FY21	65	0	0	0	1.04	0.08	12	0	0	78
Ewing Creek	FY21	304	0	0	0	6.94	0.07	36	0	0	347
Gibson Creek	FY21	85	0	0	0	15	0.18	4.83	0	0	105
Gizzard Branch	FY21	77	0	0	0	0	0.01	5.15	0	0	82
Harpeth River	FY21	709	0	0	0	0.74	0.08	27	0	0	737
Indian Creek	FY21	0	0	0	0	0	0	0	0	0	0
Island Creek	FY21	0	0	0	0	0	0	0	0	0	0
Little Harpeth River	FY21	60	0	0	0	0	0.04	6.16	0	0	66
Loves Branch	FY21	25	0	0	0	0.24	0.03	0	0	0	25
Mansker Creek	FY21	38	0	0	0	0	0.02	0	0	0	38
Marrowbone Creek	FY21	12	0	0	0	0	0.01	0	0	0	12
Mill Creek Lower	FY21	628	0	0	0	18	0.16	43	0	0	689
Mill Creek Upper	FY21	314	0	0	0	1.94	0.18	35	0	0	351
Overall Creek	FY21	58	0	0	0	0.25	0.04	6.61	0	0	65
Pages Branch	FY21	126	0	0	0	1.69	0.05	6.86	0	0	135
Percy Priest Lake, Lower	FY21	175	0	0	0	1.33	0.07	1.06	0	0	177
Percy Priest Lake, Upper	FY21	290	0	0	0	0	0.03	45	0	0	335
Pond Creek	FY21	0	0	0	0	0	0	0	0	0	0
Richland Creek	FY21	3,747	0	0	0	17	0.45	14	0	0	3,778
Sandy Creek	FY21	11	0	0	0	0	<0.01	0	0	0	11
Sevenmile Creek	FY21	300	0	0	0	8.68	0.12	20	0	0	329
South Harpeth River, Lower	FY21	4.56	0	0	0	0	0.01	0.98	0	0	5.55
Stoner Creek	FY21	1,087	0	0	0	2.43	0.03	25	0	0	1,114
Stones River	FY21	155	0	0	0	0	0.14	18	0	0	173
Sugartree Creek	FY21	189	0	0	0	0.25	0.03	3.43	0	0	192
Sulpher Creek	FY21	14	0	0	0	0	<0.01	0	0	0	14
Sycamore Creek	FY21	14	0	0	0	0	<0.01	2.58	0	0	17
Whites Creek	FY21	1,779	0	0	0	21	0.12	35	0	0	1,836

Based on average annual rainfall conditions: (1) – Accounts for all control measures implemented in watershed thru end of FY (2) – Based on control measures implemented during the fiscal year

Watershed	Year	Pollutant: BOD5 Load Removal by MWS Control Measure Implementation during Fiscal Year (pounds)									
		By LID Ordinance / SCMs [1]	By Construction Sites Inspected [2]	By Illicit Discharge Program [2]	By Street Sweeping [2]	By Home Buyout Program [1]	By Trees Planted [1]	By Stream Buffers [1]	By Industrial Sites Inspected [2]	By Field Screenings [2]	**Total Pollutant Load Removed from Watershed** (lbs)
All Watersheds	FY21	185,623	0	20	55,058	315	0	0	784	67	241,868
Back Creek	FY21	0	0	0	0	0	0	0	0	0	0
Browns Creek	FY21	4,020	0	1.04	2,257	12	0	0	44	5.27	6,340
Bull Run Creek	FY21	0	0	0	0	0	0	0	0	0	0
Cooper Creek	FY21	1,288	0	0.01	661	9.48	0	0	0	0	1,958
Cub Creek	FY21	0	0	0	0	0	0	0	0	0	0
Cumberland River	FY21	103,679	0	5.52	12,608	53	0	0	34	0	116,379
Davidson Branch	FY21	408	0	0.01	165	0	0	0	0	0	573
Dry Creek	FY21	796	0	0.02	716	2.06	0	0	22	0	1,536
Ewing Creek	FY21	4,099	0	0.01	1,927	9.11	0	0	45	0	6,080
Gibson Creek	FY21	556	0	0.22	716	18	0	0	0	0	1,290
Gizzard Branch	FY21	565	0	0	165	0	0	0	0	0	730
Harpeth River	FY21	6,946	0	0.14	3,579	5.22	0	0	0	0	10,530
Indian Creek	FY21	0	0	0	0	0	0	0	0	0	0
Island Creek	FY21	0	0	0	0	0	0	0	0	0	0
Little Harpeth River	FY21	358	0	0.01	220	0	0	0	0	0	579
Loves Branch	FY21	232	0	0	220	0.86	0	0	0	0	453
Mansker Creek	FY21	425	0	0	0	0	0	0	0	0	425
Marrowbone Creek	FY21	59	0	0.02	0	0	0	0	0	0	59
Mill Creek Lower	FY21	6,036	0	2.52	6,992	38	0	0	34	25	13,128
Mill Creek Upper	FY21	2,529	0	0.13	2,092	44	0	0	0	12	4,677
Overall Creek	FY21	433	0	3.68	110	0.85	0	0	0	0	547
Pages Branch	FY21	1,135	0	0.93	826	2.33	0	0	273	0	2,238
Percy Priest Lake, Lower	FY21	1,286	0	0.06	4,460	0.75	0	0	0	0	5,746
Percy Priest Lake, Upper	FY21	3,523	0	0.29	606	0	0	0	259	16	4,405
Pond Creek	FY21	0	0	0	0	0	0	0	0	0	0
Richland Creek	FY21	22,036	0	0.13	3,854	12	0	0	48	0	25,950
Sandy Creek	FY21	141	0	0.01	220	0	0	0	0	0	362
Sevenmile Creek	FY21	2,071	0	1.05	4,129	22	0	0	0	6.78	6,230
South Harpeth River, Lower	FY21	48	0	0	165	0	0	0	0	0	213
Stoner Creek	FY21	9,814	0	0.93	3,303	2.63	0	0	23	0	13,144
Stones River	FY21	1,532	0	0.03	2,147	0	0	0	0	2.11	3,682
Sugartree Creek	FY21	1,228	0	3.68	936	0.35	0	0	0	0	2,168
Sulpher Creek	FY21	132	0	0.01	0	0	0	0	0	0	132
Sycamore Creek	FY21	74	0	0	0	0	0	0	0	0	74
Whites Creek	FY21	10,176	0	0	1,982	82	0	0	0	0	12,240

Based on average annual rainfall conditions: (1) – Accounts for all control measures implemented in watershed thru end of FY (2) – Based on control measures implemented during the fiscal year

Watershed	Year	Pollutant: COD Load Removal by MWS Control Measure Implementation during Fiscal Year (pounds)									
		By LID Ordinance / SCMs [1]	By Construction Sites Inspected [2]	By Illicit Discharge Program [2]	By Street Sweeping [2]	By Home Buyout Program [1]	By Trees Planted [1]	By Stream Buffers [1]	By Industrial Sites Inspected [2]	By Field Screenings [2]	**Total Pollutant Load Removed from Watershed** (lbs)
All Watersheds	FY21	1,453,779	0	54	110,116	571	0	4,021	7,868	675	1,577,082
Back Creek	FY21	0	0	0	0	0	0	0	0	0	0
Browns Creek	FY21	32,313	0	2.73	4,515	0	0	2.25	446	53	37,332
Bull Run Creek	FY21	0	0	0	0	0	0	0	0	0	0
Cooper Creek	FY21	9,510	0	0.02	1,321	37	0	0.51	0	0	10,869
Cub Creek	FY21	0	0	0	0	0	0	0	0	0	0
Cumberland River	FY21	849,795	0	15	25,217	157	0	634	340	0	876,157
Davidson Branch	FY21	3,297	0	0.02	330	0	0	0	0	0	3,627
Dry Creek	FY21	6,146	0	0.05	1,432	0	0	55	224	0	7,856
Ewing Creek	FY21	32,294	0	0.02	3,854	0	0	274	452	0	36,874
Gibson Creek	FY21	4,246	0	0.58	1,432	18	0	25	0	0	5,722
Gizzard Branch	FY21	4,457	0	0	330	0	0	18	0	0	4,805
Harpeth River	FY21	49,870	0	0.36	7,158	0	0	108	0	0	57,136
Indian Creek	FY21	0	0	0	0	0	0	0	0	0	0
Island Creek	FY21	0	0	0	0	0	0	0	0	0	0
Little Harpeth River	FY21	3,134	0	0.02	440	0	0	40	0	0	3,614
Loves Branch	FY21	1,979	0	0	440	0	0	0	0	0	2,420
Mansker Creek	FY21	3,318	0	0	0	0	0	0	0	0	3,318
Marrowbone Creek	FY21	445	0	0.05	0	0	0	0	0	0	445
Mill Creek Lower	FY21	50,062	0	6.64	13,985	39	0	451	340	253	65,137
Mill Creek Upper	FY21	20,624	0	0.34	4,184	179	0	235	0	117	25,340
Overall Creek	FY21	3,331	0	9.68	220	0	0	46	0	0	3,607
Pages Branch	FY21	10,633	0	2.44	1,652	0	0	60	2,746	0	15,094
Percy Priest Lake, Lower	FY21	15,831	0	0.14	8,919	0	0	15	0	0	24,765
Percy Priest Lake, Upper	FY21	27,053	0	0.77	1,211	0	0	375	2,605	162	31,407
Pond Creek	FY21	0	0	0	0	0	0	0	0	0	0
Richland Creek	FY21	145,905	0	0.34	7,708	0	0	246	480	0	154,339
Sandy Creek	FY21	1,117	0	0.02	440	0	0	0	0	0	1,557
Sevenmile Creek	FY21	19,750	0	2.75	8,259	0	0	124	0	68	28,204
South Harpeth River, Lower	FY21	325	0	0	330	0	0	8.55	0	0	664
Stoner Creek	FY21	67,758	0	2.44	6,607	0	0	319	234	0	74,921
Stones River	FY21	12,341	0	0.07	4,295	0	0	419	0	21	17,076
Sugartree Creek	FY21	9,640	0	9.68	1,872	0	0	55	0	0	11,577
Sulpher Creek	FY21	1,012	0	0.02	0	0	0	0	0	0	1,012
Sycamore Creek	FY21	627	0	0	0	0	0	31	0	0	658
Whites Creek	FY21	66,967	0	0	3,964	141	0	480	0	0	71,553

Based on average annual rainfall conditions: (1) – Accounts for all control measures implemented in watershed thru end of FY (2) – Based on control measures implemented during the fiscal year

Watershed	Year	Pollutant: NH3 Load Removal by MWS Control Measure Implementation during Fiscal Year (pounds)									
		By LID Ordinance / SCMs [1]	By Construction Sites Inspected [2]	By Illicit Discharge Program [2]	By Street Sweeping [2]	By Home Buyout Program [1]	By Trees Planted [1]	By Stream Buffers [1]	By Industrial Sites Inspected [2]	By Field Screenings [2]	**Total Pollutant Load Removed from Watershed** (lbs)
All Watersheds	FY21	5,105	0	0.79	0	3.42	0	0	13	1.12	5,124
Back Creek	FY21	0	0	0	0	0	0	0	0	0	0
Browns Creek	FY21	106	0	0.04	0	<0.01	0	0	0.74	0.09	106
Bull Run Creek	FY21	0	0	0	0	0	0	0	0	0	0
Cooper Creek	FY21	25	0	<0.01	0	0.22	0	0	0	0	25
Cub Creek	FY21	0	0	0	0	0	0	0	0	0	0
Cumberland River	FY21	3,062	0	0.21	0	0.93	0	0	0.56	0	3,064
Davidson Branch	FY21	11	0	<0.01	0	0	0	0	0	0	11
Dry Creek	FY21	21	0	<0.01	0	<0.01	0	0	0.37	0	21
Ewing Creek	FY21	108	0	<0.01	0	<0.01	0	0	0.75	0	109
Gibson Creek	FY21	17	0	0.01	0	0.11	0	0	0	0	17
Gizzard Branch	FY21	18	0	0	0	0	0	0	0	0	18
Harpeth River	FY21	135	0	0.01	0	<0.01	0	0	0	0	135
Indian Creek	FY21	0	0	0	0	0	0	0	0	0	0
Island Creek	FY21	0	0	0	0	0	0	0	0	0	0
Little Harpeth River	FY21	13	0	<0.01	0	0	0	0	0	0	13
Loves Branch	FY21	6.74	0	0	0	<0.01	0	0	0	0	6.74
Mansker Creek	FY21	12	0	0	0	0	0	0	0	0	12
Marrowbone Creek	FY21	2.03	0	<0.01	0	0	0	0	0	0	2.03
Mill Creek Lower	FY21	190	0	0.1	0	0.24	0	0	0.56	0.42	191
Mill Creek Upper	FY21	76	0	<0.01	0	1.06	0	0	0	0.19	77
Overall Creek	FY21	11	0	0.14	0	<0.01	0	0	0	0	11
Pages Branch	FY21	45	0	0.04	0	<0.01	0	0	4.56	0	50
Percy Priest Lake, Lower	FY21	35	0	<0.01	0	<0.01	0	0	0	0	35
Percy Priest Lake, Upper	FY21	84	0	0.01	0	0	0	0	4.32	0.27	89
Pond Creek	FY21	0	0	0	0	0	0	0	0	0	0
Richland Creek	FY21	494	0	<0.01	0	<0.01	0	0	0.8	0	495
Sandy Creek	FY21	3.92	0	<0.01	0	0	0	0	0	0	3.92
Sevenmile Creek	FY21	61	0	0.04	0	<0.01	0	0	0	0.11	61
South Harpeth River, Lower	FY21	1.04	0	0	0	0	0	0	0	0	1.04
Stoner Creek	FY21	260	0	0.04	0	<0.01	0	0	0.39	0	260
Stones River	FY21	45	0	<0.01	0	0	0	0	0	0.04	45
Sugartree Creek	FY21	36	0	0.14	0	<0.01	0	0	0	0	36
Sulpher Creek	FY21	3.67	0	<0.01	0	0	0	0	0	0	3.67
Sycamore Creek	FY21	1.86	0	0	0	0	0	0	0	0	1.86
Whites Creek	FY21	221	0	0	0	0.85	0	0	0	0	222

Based on average annual rainfall conditions: (1) – Accounts for all control measures implemented in watershed thru end of FY (2) – Based on control measures implemented during the fiscal year

		Pollutant: TKN **Load Removal by MWS Control Measure Implementation during Fiscal Year** (pounds)									
Watershed	**Year**	By LID Ordinance / SCMs [1]	By Construction Sites Inspected [2]	By Illicit Discharge Program [2]	By Street Sweeping [2]	By Home Buyout Program [1]	By Trees Planted [1]	By Stream Buffers [1]	By Industrial Sites Inspected [2]	By Field Screenings [2]	**Total Pollutant Load Removed from Watershed** (lbs)
All Watersheds	FY21	25,170	0	6.47	0	19	0	38	0	0	25,233
Back Creek	FY21	0	0	0	0	0	0	0	0	0	0
Browns Creek	FY21	560	0	0.33	0	0.93	0	0	0	0	561
Bull Run Creek	FY21	0	0	0	0	0	0	0	0	0	0
Cooper Creek	FY21	202	0	<0.01	0	0.37	0	0	0	0	202
Cub Creek	FY21	0	0	0	0	0	0	0	0	0	0
Cumberland River	FY21	14,768	0	1.75	0	2.55	0	4.38	0	0	14,777
Davidson Branch	FY21	43	0	<0.01	0	0	0	0	0	0	43
Dry Creek	FY21	87	0	0.01	0	0.16	0	0.35	0	0	88
Ewing Creek	FY21	420	0	<0.01	0	0.71	0	1.66	0	0	422
Gibson Creek	FY21	101	0	0.07	0	1.23	0	0.16	0	0	102
Gizzard Branch	FY21	85	0	0	0	0	0	0.11	0	0	85
Harpeth River	FY21	1,074	0	0.04	0	0.41	0	2.11	0	0	1,076
Indian Creek	FY21	0	0	0	0	0	0	0	0	0	0
Island Creek	FY21	0	0	0	0	0	0	0	0	0	0
Little Harpeth River	FY21	71	0	<0.01	0	0	0	0.23	0	0	71
Loves Branch	FY21	20	0	0	0	0.07	0	0	0	0	20
Mansker Creek	FY21	56	0	0	0	0	0	0	0	0	56
Marrowbone Creek	FY21	11	0	0.01	0	0	0	0	0	0	11
Mill Creek Lower	FY21	829	0	0.8	0	2.52	0	13	0	0	846
Mill Creek Upper	FY21	406	0	0.04	0	1.64	0	1.77	0	0	409
Overall Creek	FY21	54	0	1.17	0	0.07	0	0.23	0	0	55
Pages Branch	FY21	181	0	0.29	0	0.18	0	0.37	0	0	182
Percy Priest Lake, Lower	FY21	246	0	0.02	0	0.06	0	0	0	0	246
Percy Priest Lake, Upper	FY21	345	0	0.09	0	0	0	2.22	0	0	347
Pond Creek	FY21	0	0	0	0	0	0	0	0	0	0
Richland Creek	FY21	2,350	0	0.04	0	0.95	0	2.2	0	0	2,353
Sandy Creek	FY21	19	0	<0.01	0	0	0	0	0	0	19
Sevenmile Creek	FY21	366	0	0.33	0	1.7	0	0.78	0	0	369
South Harpeth River, Lower	FY21	7.22	0	0	0	0	0	0	0	0	7.22
Stoner Creek	FY21	1,450	0	0.29	0	0.2	0	2.04	0	0	1,453
Stones River	FY21	196	0	0.01	0	0	0	2.68	0	0	199
Sugartree Creek	FY21	180	0	1.17	0	0.03	0	0.35	0	0	181
Sulpher Creek	FY21	16	0	<0.01	0	0	0	0	0	0	16
Sycamore Creek	FY21	12	0	0	0	0	0	0.2	0	0	12
Whites Creek	FY21	1,016	0	0	0	4.98	0	2.33	0	0	1,023

Based on average annual rainfall conditions: (1) – Accounts for all control measures implemented in watershed thru end of FY (2) – Based on control measures implemented during the fiscal year

Watershed	Year	Pollutant: NO2+NO3 Load Removal by MWS Control Measure Implementation during Fiscal Year (pounds)									
		By LID Ordinance / SCMs [1]	By Construction Sites Inspected [2]	By Illicit Discharge Program [2]	By Street Sweeping [2]	By Home Buyout Program [1]	By Trees Planted [1]	By Stream Buffers [1]	By Industrial Sites Inspected [2]	By Field Screenings [2]	**Total Pollutant Load Removed from Watershed** (lbs)
All Watersheds	FY21	13,744	0	0.09	0	1.25	0	5.76	31	2.66	13,785
Back Creek	FY21	0	0	0	0	0	0	0	0	0	0
Browns Creek	FY21	201	0	<0.01	0	0	0	0.01	1.76	0.21	203
Bull Run Creek	FY21	0	0	0	0	0	0	0	0	0	0
Cooper Creek	FY21	65	0	<0.01	0	0.08	0	<0.01	0	0	65
Cub Creek	FY21	0	0	0	0	0	0	0	0	0	0
Cumberland River	FY21	7,745	0	0.03	0	0.34	0	0.44	1.34	0	7,747
Davidson Branch	FY21	25	0	<0.01	0	0	0	0	0	0	25
Dry Creek	FY21	41	0	<0.01	0	0	0	0.02	0.88	0	42
Ewing Creek	FY21	189	0	<0.01	0	0	0	0.15	1.78	0	191
Gibson Creek	FY21	37	0	<0.01	0	0.04	0	0.01	0	0	37
Gizzard Branch	FY21	38	0	0	0	0	0	0.01	0	0	38
Harpeth River	FY21	397	0	<0.01	0	0	0	0.48	0	0	397
Indian Creek	FY21	0	0	0	0	0	0	0	0	0	0
Island Creek	FY21	0	0	0	0	0	0	0	0	0	0
Little Harpeth River	FY21	25	0	<0.01	0	0	0	0.03	0	0	25
Loves Branch	FY21	14	0	0	0	0	0	0	0	0	14
Mansker Creek	FY21	24	0	0	0	0	0	0	0	0	24
Marrowbone Creek	FY21	4.48	0	<0.01	0	0	0	0	0	0	4.48
Mill Creek Lower	FY21	316	0	0.01	0	0.08	0	2.8	1.34	1	321
Mill Creek Upper	FY21	156	0	<0.01	0	0.39	0	0.3	0	0.46	157
Overall Creek	FY21	30	0	0.02	0	0	0	0.04	0	0	30
Pages Branch	FY21	51	0	<0.01	0	0	0	0.03	11	0	62
Percy Priest Lake, Lower	FY21	109	0	<0.01	0	0	0	0.04	0	0	109
Percy Priest Lake, Upper	FY21	160	0	<0.01	0	0	0	0.22	10	0.64	171
Pond Creek	FY21	0	0	0	0	0	0	0	0	0	0
Richland Creek	FY21	2,029	0	<0.01	0	0	0	0.27	1.89	0	2,031
Sandy Creek	FY21	6.88	0	<0.01	0	0	0	0	0	0	6.88
Sevenmile Creek	FY21	163	0	<0.01	0	0	0	0.06	0	0.27	163
South Harpeth River, Lower	FY21	3.26	0	0	0	0	0	0.02	0	0	3.29
Stoner Creek	FY21	778	0	<0.01	0	0	0	0.13	0.92	0	779
Stones River	FY21	85	0	<0.01	0	0	0	0.17	0	0.08	85
Sugartree Creek	FY21	96	0	0.02	0	0	0	0.02	0	0	96
Sulpher Creek	FY21	6.87	0	<0.01	0	0	0	0	0	0	6.87
Sycamore Creek	FY21	6.59	0	0	0	0	0	0.01	0	0	6.6
Whites Creek	FY21	946	0	0	0	0.31	0	0.48	0	0	947

Based on average annual rainfall conditions: (1) – Accounts for all control measures implemented in watershed thru end of FY (2) – Based on control measures implemented during the fiscal year

Watershed	Year	Pollutant: TN Load Removal by MWS Control Measure Implementation during Fiscal Year (pounds)									
		By LID Ordinance / SCMs [1]	By Construction Sites Inspected [2]	By Illicit Discharge Program [2]	By Street Sweeping [2]	By Home Buyout Program [1]	By Trees Planted [1]	By Stream Buffers [1]	By Industrial Sites Inspected [2]	By Field Screenings [2]	**Total Pollutant Load Removed from Watershed** (lbs)
All Watersheds	FY21	32,824	0	4.68	15,795	24	0	38	0	0	48,686
Back Creek	FY21	0	0	0	0	0	0	0	0	0	0
Browns Creek	FY21	672	0	0.24	648	1.1	0	0	0	0	1,321
Bull Run Creek	FY21	0	0	0	0	0	0	0	0	0	0
Cooper Creek	FY21	247	0	<0.01	190	0.56	0	0	0	0	437
Cub Creek	FY21	0	0	0	0	0	0	0	0	0	0
Cumberland River	FY21	19,346	0	1.26	3,617	3.55	0	4.28	0	0	22,972
Davidson Branch	FY21	59	0	<0.01	47	0	0	0	0	0	107
Dry Creek	FY21	110	0	<0.01	205	0.19	0	0.34	0	0	316
Ewing Creek	FY21	522	0	<0.01	553	0.84	0	1.58	0	0	1,078
Gibson Creek	FY21	108	0	0.05	205	1.51	0	0.15	0	0	315
Gizzard Branch	FY21	100	0	0	47	0	0	0.11	0	0	148
Harpeth River	FY21	1,318	0	0.03	1,027	0.48	0	2.21	0	0	2,347
Indian Creek	FY21	0	0	0	0	0	0	0	0	0	0
Island Creek	FY21	0	0	0	0	0	0	0	0	0	0
Little Harpeth River	FY21	73	0	<0.01	63	0	0	0.22	0	0	137
Loves Branch	FY21	29	0	0	63	0.08	0	0	0	0	92
Mansker Creek	FY21	68	0	0	0	0	0	0	0	0	68
Marrowbone Creek	FY21	12	0	<0.01	0	0	0	0	0	0	12
Mill Creek Lower	FY21	918	0	0.58	2,006	3.11	0	14	0	0	2,942
Mill Creek Upper	FY21	452	0	0.03	600	2.56	0	1.71	0	0	1,056
Overall Creek	FY21	69	0	0.84	32	0.08	0	0.22	0	0	101
Pages Branch	FY21	171	0	0.21	237	0.21	0	0.36	0	0	408
Percy Priest Lake, Lower	FY21	309	0	0.01	1,279	0.07	0	0	0	0	1,589
Percy Priest Lake, Upper	FY21	400	0	0.07	174	0	0	2.13	0	0	576
Pond Creek	FY21	0	0	0	0	0	0	0	0	0	0
Richland Creek	FY21	3,396	0	0.03	1,106	1.11	0	2.19	0	0	4,505
Sandy Creek	FY21	22	0	<0.01	63	0	0	0	0	0	85
Sevenmile Creek	FY21	434	0	0.24	1,185	2	0	0.74	0	0	1,621
South Harpeth River, Lower	FY21	9.63	0	0	47	0	0	0	0	0	57
Stoner Creek	FY21	2,013	0	0.21	948	0.24	0	1.94	0	0	2,963
Stones River	FY21	233	0	0.01	616	0	0	2.54	0	0	852
Sugartree Creek	FY21	221	0	0.84	269	0.03	0	0.33	0	0	491
Sulpher Creek	FY21	18	0	<0.01	0	0	0	0	0	0	18
Sycamore Creek	FY21	14	0	0	0	0	0	0.19	0	0	14
Whites Creek	FY21	1,482	0	0	569	6.36	0	2.22	0	0	2,059

Based on average annual rainfall conditions: (1) – Accounts for all control measures implemented in watershed thru end of FY (2) – Based on control measures implemented during the fiscal year

Watershed	Year	Pollutant: Diss P Load Removal by MWS Control Measure Implementation during Fiscal Year (pounds)									
		By LID Ordinance / SCMs [1]	By Construction Sites Inspected [2]	By Illicit Discharge Program [2]	By Street Sweeping [2]	By Home Buyout Program [1]	By Trees Planted [1]	By Stream Buffers [1]	By Industrial Sites Inspected [2]	By Field Screenings [2]	**Total Pollutant Load Removed from Watershed** (lbs)
All Watersheds	FY21	8,393	0	0	0	18	0	89	0	0	8,500
Back Creek	FY21	0	0	0	0	0	0	0	0	0	0
Browns Creek	FY21	233	0	0	0	1.18	0	0.13	0	0	234
Bull Run Creek	FY21	0	0	0	0	0	0	0	0	0	0
Cooper Creek	FY21	135	0	0	0	0.07	0	0	0	0	135
Cub Creek	FY21	0	0	0	0	0	0	0	0	0	0
Cumberland River	FY21	4,835	0	0	0	1.56	0	12	0	0	4,848
Davidson Branch	FY21	17	0	0	0	0	0	0	0	0	17
Dry Creek	FY21	21	0	0	0	0.2	0	1.93	0	0	24
Ewing Creek	FY21	69	0	0	0	0.89	0	11	0	0	81
Gibson Creek	FY21	24	0	0	0	1.36	0	0.33	0	0	26
Gizzard Branch	FY21	17	0	0	0	0	0	0.23	0	0	17
Harpeth River	FY21	685	0	0	0	0.51	0	2.23	0	0	687
Indian Creek	FY21	0	0	0	0	0	0	0	0	0	0
Island Creek	FY21	0	0	0	0	0	0	0	0	0	0
Little Harpeth River	FY21	14	0	0	0	0	0	0.48	0	0	14
Loves Branch	FY21	5.22	0	0	0	0.09	0	0	0	0	5.31
Mansker Creek	FY21	9.95	0	0	0	0	0	0	0	0	9.95
Marrowbone Creek	FY21	1.51	0	0	0	0	0	0	0	0	1.51
Mill Creek Lower	FY21	139	0	0	0	2.79	0	16	0	0	158
Mill Creek Upper	FY21	118	0	0	0	0.17	0	4.76	0	0	123
Overall Creek	FY21	24	0	0	0	0.08	0	0.47	0	0	24
Pages Branch	FY21	19	0	0	0	0.23	0	1.16	0	0	20
Percy Priest Lake, Lower	FY21	151	0	0	0	0.07	0	0	0	0	151
Percy Priest Lake, Upper	FY21	78	0	0	0	0	0	14	0	0	92
Pond Creek	FY21	0	0	0	0	0	0	0	0	0	0
Richland Creek	FY21	837	0	0	0	1.19	0	3.67	0	0	842
Sandy Creek	FY21	3.6	0	0	0	0	0	0	0	0	3.6
Sevenmile Creek	FY21	136	0	0	0	2.15	0	1.6	0	0	140
South Harpeth River, Lower	FY21	3.21	0	0	0	0	0	0	0	0	3.21
Stoner Creek	FY21	347	0	0	0	0.26	0	4.19	0	0	352
Stones River	FY21	38	0	0	0	0	0	5.98	0	0	44
Sugartree Creek	FY21	53	0	0	0	0.03	0	0.73	0	0	54
Sulpher Creek	FY21	2.15	0	0	0	0	0	0	0	0	2.15
Sycamore Creek	FY21	4.61	0	0	0	0	0	0.41	0	0	5.02
Whites Creek	FY21	372	0	0	0	4.77	0	7.69	0	0	385

Based on average annual rainfall conditions: (1) – Accounts for all control measures implemented in watershed thru end of FY (2) – Based on control measures implemented during the fiscal year

Watershed	Year	Pollutant: TP Load Removal by MWS Control Measure Implementation during Fiscal Year (pounds)									
		By LID Ordinance / SCMs [1]	By Construction Sites Inspected [2]	By Illicit Discharge Program [2]	By Street Sweeping [2]	By Home Buyout Program [1]	By Trees Planted [1]	By Stream Buffers [1]	By Industrial Sites Inspected [2]	By Field Screenings [2]	**Total Pollutant Load Removed from Watershed** (lbs)
All Watersheds	FY21	13,662	0	0.83	6,318	18	0	135	0	0	20,134
Back Creek	FY21	0	0	0	0	0	0	0	0	0	0
Browns Creek	FY21	375	0	0.04	259	1.2	0	0.15	0	0	635
Bull Run Creek	FY21	0	0	0	0	0	0	0	0	0	0
Cooper Creek	FY21	193	0	<0.01	76	0.07	0	0	0	0	269
Cub Creek	FY21	0	0	0	0	0	0	0	0	0	0
Cumberland River	FY21	7,943	0	0.23	1,447	1.59	0	19	0	0	9,411
Davidson Branch	FY21	29	0	<0.01	19	0	0	0	0	0	48
Dry Creek	FY21	43	0	<0.01	82	0.21	0	2.66	0	0	128
Ewing Creek	FY21	178	0	<0.01	221	0.91	0	15	0	0	415
Gibson Creek	FY21	40	0	0.01	82	1.38	0	0.58	0	0	124
Gizzard Branch	FY21	30	0	0	19	0	0	0.41	0	0	50
Harpeth River	FY21	974	0	0.01	411	0.52	0	3.59	0	0	1,389
Indian Creek	FY21	0	0	0	0	0	0	0	0	0	0
Island Creek	FY21	0	0	0	0	0	0	0	0	0	0
Little Harpeth River	FY21	25	0	<0.01	25	0	0	0.83	0	0	51
Loves Branch	FY21	12	0	0	25	0.09	0	0	0	0	37
Mansker Creek	FY21	20	0	0	0	0	0	0	0	0	20
Marrowbone Creek	FY21	2.93	0	<0.01	0	0	0	0	0	0	2.93
Mill Creek Lower	FY21	302	0	0.1	802	2.84	0	25	0	0	1,132
Mill Creek Upper	FY21	199	0	0.01	240	0.18	0	7.2	0	0	447
Overall Creek	FY21	38	0	0.15	13	0.08	0	0.82	0	0	52
Pages Branch	FY21	50	0	0.04	95	0.23	0	1.79	0	0	147
Percy Priest Lake, Lower	FY21	246	0	<0.01	512	0.07	0	0	0	0	758
Percy Priest Lake, Upper	FY21	190	0	0.01	69	0	0	19	0	0	278
Pond Creek	FY21	0	0	0	0	0	0	0	0	0	0
Richland Creek	FY21	1,274	0	0.01	442	1.21	0	6.26	0	0	1,723
Sandy Creek	FY21	7.73	0	<0.01	25	0	0	0	0	0	33
Sevenmile Creek	FY21	224	0	0.04	474	2.19	0	2.79	0	0	703
South Harpeth River, Lower	FY21	4.62	0	0	19	0	0	0	0	0	24
Stoner Creek	FY21	513	0	0.04	379	0.26	0	7.3	0	0	900
Stones River	FY21	78	0	<0.01	246	0	0	10	0	0	334
Sugartree Creek	FY21	87	0	0.15	107	0.03	0	1.27	0	0	196
Sulpher Creek	FY21	5.57	0	<0.01	0	0	0	0	0	0	5.57
Sycamore Creek	FY21	7.97	0	0	0	0	0	0.71	0	0	8.68
Whites Creek	FY21	571	0	0	227	4.85	0	12	0	0	815

Based on average annual rainfall conditions: (1) – Accounts for all control measures implemented in watershed thru end of FY (2) – Based on control measures implemented during the fiscal year

Watershed	Year	Pollutant: Pb Load Removal by MWS Control Measure Implementation during Fiscal Year (pounds)									
		By LID Ordinance / SCMs [1]	By Construction Sites Inspected [2]	By Illicit Discharge Program [2]	By Street Sweeping [2]	By Home Buyout Program [1]	By Trees Planted [1]	By Stream Buffers [1]	By Industrial Sites Inspected [2]	By Field Screenings [2]	**Total Pollutant Load Removed from Watershed** (lbs)
All Watersheds	FY21	83	0	<0.01	457	29	0	43	3.26	0	616
Back Creek	FY21	0	0	0	0	0	0	0	0	0	0
Browns Creek	FY21	1.44	0	<0.01	19	0	0	0.13	0.19	0	21
Bull Run Creek	FY21	0	0	0	0	0	0	0	0	0	0
Cooper Creek	FY21	0.35	0	<0.01	5.49	1.84	0	0.03	0	0	7.7
Cub Creek	FY21	0	0	0	0	0	0	0	0	0	0
Cumberland River	FY21	48	0	<0.01	105	7.83	0	5.82	0.14	0	167
Davidson Branch	FY21	0.17	0	<0.01	1.37	0	0	0	0	0	1.54
Dry Creek	FY21	0.31	0	<0.01	5.94	0	0	0.42	0.09	0	6.76
Ewing Creek	FY21	1.61	0	<0.01	16	0	0	2.81	0.19	0	21
Gibson Creek	FY21	0.26	0	<0.01	5.94	0.92	0	0.19	0	0	7.32
Gizzard Branch	FY21	0.27	0	0	1.37	0	0	0.13	0	0	1.77
Harpeth River	FY21	2.09	0	<0.01	30	0	0	1.73	0	0	34
Indian Creek	FY21	0	0	0	0	0	0	0	0	0	0
Island Creek	FY21	0	0	0	0	0	0	0	0	0	0
Little Harpeth River	FY21	0.18	0	<0.01	1.83	0	0	0.49	0	0	2.5
Loves Branch	FY21	0.1	0	0	1.83	0	0	0	0	0	1.93
Mansker Creek	FY21	0.17	0	0	0	0	0	0	0	0	0.17
Marrowbone Creek	FY21	0.04	0	<0.01	0	0	0	0	0	0	0.04
Mill Creek Lower	FY21	2.67	0	<0.01	58	1.94	0	2.21	0.14	0	65
Mill Creek Upper	FY21	1.12	0	<0.01	17	8.94	0	3.6	0	0	31
Overall Creek	FY21	0.18	0	<0.01	0.91	0	0	0.87	0	0	1.97
Pages Branch	FY21	0.58	0	<0.01	6.86	0	0	0.56	1.14	0	9.15
Percy Priest Lake, Lower	FY21	0.62	0	<0.01	37	0	0	0.88	0	0	39
Percy Priest Lake, Upper	FY21	1.46	0	<0.01	5.03	0	0	4.2	1.08	0	12
Pond Creek	FY21	0	0	0	0	0	0	0	0	0	0
Richland Creek	FY21	10	0	<0.01	32	0	0	2.02	0.2	0	45
Sandy Creek	FY21	0.05	0	<0.01	1.83	0	0	0	0	0	1.88
Sevenmile Creek	FY21	0.99	0	<0.01	34	0	0	1.06	0	0	36
South Harpeth River, Lower	FY21	0.02	0	0	1.37	0	0	0.49	0	0	1.88
Stoner Creek	FY21	3.81	0	<0.01	27	0	0	2.47	0.1	0	34
Stones River	FY21	0.65	0	<0.01	18	0	0	3.24	0	0	22
Sugartree Creek	FY21	0.57	0	<0.01	7.77	0	0	0.45	0	0	8.8
Sulpher Creek	FY21	0.06	0	<0.01	0	0	0	0	0	0	0.06
Sycamore Creek	FY21	0.04	0	0	0	0	0	0.23	0	0	0.27
Whites Creek	FY21	4.96	0	0	16	7.06	0	9.43	0	0	38

Based on average annual rainfall conditions: (1) – Accounts for all control measures implemented in watershed thru end of FY (2) – Based on control measures implemented during the fiscal year

Watershed	Year	Pollutant: Ni Load Removal by MWS Control Measure Implementation during Fiscal Year (pounds)									
		By LID Ordinance / SCMs [1]	By Construction Sites Inspected [2]	By Illicit Discharge Program [2]	By Street Sweeping [2]	By Home Buyout Program [1]	By Trees Planted [1]	By Stream Buffers [1]	By Industrial Sites Inspected [2]	By Field Screenings [2]	**Total Pollutant Load Removed from Watershed** (lbs)
All Watersheds	FY21	154	0	<0.01	292	0	0	688	0	0	1,133
Back Creek	FY21	0	0	0	0	0	0	0	0	0	0
Browns Creek	FY21	1.75	0	<0.01	12	0	0	2.16	0	0	16
Bull Run Creek	FY21	0	0	0	0	0	0	0	0	0	0
Cooper Creek	FY21	0.28	0	<0.01	3.5	0	0	0.38	0	0	4.17
Cub Creek	FY21	0	0	0	0	0	0	0	0	0	0
Cumberland River	FY21	84	0	<0.01	67	0	0	72	0	0	223
Davidson Branch	FY21	0.25	0	<0.01	0.88	0	0	0	0	0	1.12
Dry Creek	FY21	0.45	0	<0.01	3.8	0	0	7.64	0	0	12
Ewing Creek	FY21	2.14	0	<0.01	10	0	0	55	0	0	67
Gibson Creek	FY21	0.53	0	<0.01	3.8	0	0	1.43	0	0	5.75
Gizzard Branch	FY21	0.52	0	0	0.88	0	0	1	0	0	2.4
Harpeth River	FY21	2.54	0	<0.01	19	0	0	37	0	0	58
Indian Creek	FY21	0	0	0	0	0	0	0	0	0	0
Island Creek	FY21	0	0	0	0	0	0	0	0	0	0
Little Harpeth River	FY21	0.36	0	<0.01	1.17	0	0	4.9	0	0	6.43
Loves Branch	FY21	0.13	0	0	1.17	0	0	0	0	0	1.3
Mansker Creek	FY21	0.31	0	0	0	0	0	0	0	0	0.31
Marrowbone Creek	FY21	0.08	0	<0.01	0	0	0	0	0	0	0.08
Mill Creek Lower	FY21	4.04	0	<0.01	37	0	0	145	0	0	186
Mill Creek Upper	FY21	1.89	0	<0.01	11	0	0	51	0	0	64
Overall Creek	FY21	0.32	0	<0.01	0.58	0	0	9.97	0	0	11
Pages Branch	FY21	0.72	0	<0.01	4.38	0	0	6.42	0	0	12
Percy Priest Lake, Lower	FY21	1.51	0	<0.01	24	0	0	11	0	0	37
Percy Priest Lake, Upper	FY21	1.6	0	<0.01	3.21	0	0	75	0	0	80
Pond Creek	FY21	0	0	0	0	0	0	0	0	0	0
Richland Creek	FY21	24	0	<0.01	20	0	0	24	0	0	69
Sandy Creek	FY21	0.08	0	<0.01	1.17	0	0	0	0	0	1.25
Sevenmile Creek	FY21	2.29	0	<0.01	22	0	0	8.54	0	0	33
South Harpeth River, Lower	FY21	0.03	0	0	0.88	0	0	6.35	0	0	7.26
Stoner Creek	FY21	11	0	<0.01	18	0	0	18	0	0	46
Stones River	FY21	1.05	0	<0.01	11	0	0	26	0	0	39
Sugartree Creek	FY21	1.17	0	<0.01	4.96	0	0	3.72	0	0	9.85
Sulpher Creek	FY21	0.09	0	<0.01	0	0	0	0	0	0	0.09
Sycamore Creek	FY21	0.09	0	0	0	0	0	1.75	0	0	1.84
Whites Creek	FY21	11	0	0	11	0	0	118	0	0	140

Based on average annual rainfall conditions: (1) – Accounts for all control measures implemented in watershed thru end of FY (2) – Based on control measures implemented during the fiscal year

Watershed	Year	Pollutant: Zn Load Removal by MWS Control Measure Implementation during Fiscal Year (pounds)									
		By LID Ordinance / SCMs [1]	By Construction Sites Inspected [2]	By Illicit Discharge Program [2]	By Street Sweeping [2]	By Home Buyout Program [1]	By Trees Planted [1]	By Stream Buffers [1]	By Industrial Sites Inspected [2]	By Field Screenings [2]	**Total Pollutant Load Removed from Watershed** (lbs)
All Watersheds	FY21	1,960	0	<0.01	1,257	3,015	0	0	20	0	6,251
Back Creek	FY21	0	0	0	0	0	0	0	0	0	0
Browns Creek	FY21	44	0	<0.01	52	82	0	0	1.11	0	179
Bull Run Creek	FY21	0	0	0	0	0	0	0	0	0	0
Cooper Creek	FY21	11	0	<0.01	15	120	0	0	0	0	146
Cub Creek	FY21	0	0	0	0	0	0	0	0	0	0
Cumberland River	FY21	1,087	0	<0.01	288	596	0	0	0.85	0	1,972
Davidson Branch	FY21	4.3	0	<0.01	3.77	0	0	0	0	0	8.07
Dry Creek	FY21	10	0	<0.01	16	14	0	0	0.56	0	41
Ewing Creek	FY21	54	0	<0.01	44	63	0	0	1.13	0	162
Gibson Creek	FY21	6.52	0	<0.01	16	151	0	0	0	0	174
Gizzard Branch	FY21	6.48	0	0	3.77	0	0	0	0	0	10
Harpeth River	FY21	59	0	<0.01	82	36	0	0	0	0	176
Indian Creek	FY21	0	0	0	0	0	0	0	0	0	0
Island Creek	FY21	0	0	0	0	0	0	0	0	0	0
Little Harpeth River	FY21	4.27	0	<0.01	5.03	0	0	0	0	0	9.3
Loves Branch	FY21	2.59	0	0	5.03	5.82	0	0	0	0	13
Mansker Creek	FY21	5.42	0	0	0	0	0	0	0	0	5.42
Marrowbone Creek	FY21	0.97	0	<0.01	0	0	0	0	0	0	0.97
Mill Creek Lower	FY21	84	0	<0.01	160	320	0	0	0.85	0	564
Mill Creek Upper	FY21	32	0	<0.01	48	571	0	0	0	0	650
Overall Creek	FY21	4.31	0	<0.01	2.51	5.85	0	0	0	0	13
Pages Branch	FY21	20	0	<0.01	19	16	0	0	6.84	0	62
Percy Priest Lake, Lower	FY21	12	0	<0.01	102	5.88	0	0	0	0	119
Percy Priest Lake, Upper	FY21	50	0	<0.01	14	0	0	0	6.49	0	70
Pond Creek	FY21	0	0	0	0	0	0	0	0	0	0
Richland Creek	FY21	215	0	<0.01	88	84	0	0	1.19	0	388
Sandy Creek	FY21	1.79	0	<0.01	5.03	0	0	0	0	0	6.81
Sevenmile Creek	FY21	22	0	<0.01	94	148	0	0	0	0	264
South Harpeth River, Lower	FY21	0.38	0	0	3.77	0	0	0	0	0	4.15
Stoner Creek	FY21	85	0	<0.01	75	18	0	0	0.58	0	179
Stones River	FY21	20	0	<0.01	49	0	0	0	0	0	69
Sugartree Creek	FY21	13	0	<0.01	21	2.38	0	0	0	0	36
Sulpher Creek	FY21	1.93	0	<0.01	0	0	0	0	0	0	1.93
Sycamore Creek	FY21	0.83	0	0	0	0	0	0	0	0	0.83
Whites Creek	FY21	104	0	0	45	777	0	0	0	0	926

Based on average annual rainfall conditions: (1) – Accounts for all control measures implemented in watershed thru end of FY (2) – Based on control measures implemented during the fiscal year

Watershed	Year	Pollutant: Cr Load Removal by MWS Control Measure Implementation during Fiscal Year (pounds)									
		By LID Ordinance / SCMs [1]	By Construction Sites Inspected [2]	By Illicit Discharge Program [2]	By Street Sweeping [2]	By Home Buyout Program [1]	By Trees Planted [1]	By Stream Buffers [1]	By Industrial Sites Inspected [2]	By Field Screenings [2]	**Total Pollutant Load Removed from Watershed** (lbs)
All Watersheds	FY21	64	0	<0.01	325	0	0	392	0	0	780
Back Creek	FY21	0	0	0	0	0	0	0	0	0	0
Browns Creek	FY21	1.2	0	<0.01	13	0	0	0.54	0	0	15
Bull Run Creek	FY21	0	0	0	0	0	0	0	0	0	0
Cooper Creek	FY21	0.39	0	<0.01	3.9	0	0	0.08	0	0	4.37
Cub Creek	FY21	0	0	0	0	0	0	0	0	0	0
Cumberland River	FY21	40	0	<0.01	74	0	0	59	0	0	174
Davidson Branch	FY21	0.14	0	<0.01	0.97	0	0	0	0	0	1.12
Dry Creek	FY21	0.21	0	<0.01	4.22	0	0	6.23	0	0	11
Ewing Creek	FY21	1.09	0	<0.01	11	0	0	35	0	0	47
Gibson Creek	FY21	0.15	0	<0.01	4.22	0	0	2.05	0	0	6.42
Gizzard Branch	FY21	0.17	0	0	0.97	0	0	1.44	0	0	2.58
Harpeth River	FY21	2.06	0	<0.01	21	0	0	9.97	0	0	33
Indian Creek	FY21	0	0	0	0	0	0	0	0	0	0
Island Creek	FY21	0	0	0	0	0	0	0	0	0	0
Little Harpeth River	FY21	0.11	0	<0.01	1.3	0	0	3.56	0	0	4.97
Loves Branch	FY21	0.09	0	0	1.3	0	0	0	0	0	1.39
Mansker Creek	FY21	0.11	0	0	0	0	0	0	0	0	0.11
Marrowbone Creek	FY21	0.02	0	<0.01	0	0	0	0	0	0	0.02
Mill Creek Lower	FY21	1.66	0	<0.01	41	0	0	38	0	0	81
Mill Creek Upper	FY21	0.76	0	<0.01	12	0	0	25	0	0	38
Overall Creek	FY21	0.15	0	<0.01	0.65	0	0	4.57	0	0	5.37
Pages Branch	FY21	0.32	0	<0.01	4.87	0	0	5.67	0	0	11
Percy Priest Lake, Lower	FY21	0.83	0	<0.01	26	0	0	2.41	0	0	30
Percy Priest Lake, Upper	FY21	1	0	<0.01	3.57	0	0	46	0	0	51
Pond Creek	FY21	0	0	0	0	0	0	0	0	0	0
Richland Creek	FY21	6.32	0	<0.01	23	0	0	20	0	0	49
Sandy Creek	FY21	0.03	0	<0.01	1.3	0	0	0	0	0	1.33
Sevenmile Creek	FY21	0.86	0	<0.01	24	0	0	10	0	0	35
South Harpeth River, Lower	FY21	0.01	0	0	0.97	0	0	1.34	0	0	2.33
Stoner Creek	FY21	2.28	0	<0.01	19	0	0	26	0	0	48
Stones River	FY21	0.43	0	<0.01	13	0	0	35	0	0	48
Sugartree Creek	FY21	0.39	0	<0.01	5.52	0	0	4.61	0	0	11
Sulpher Creek	FY21	0.04	0	<0.01	0	0	0	0	0	0	0.04
Sycamore Creek	FY21	0.03	0	0	0	0	0	2.51	0	0	2.54
Whites Creek	FY21	2.94	0	0	12	0	0	52	0	0	67

Based on average annual rainfall conditions: (1) – Accounts for all control measures implemented in watershed thru end of FY (2) – Based on control measures implemented during the fiscal year

Watershed	Year	Pollutant: Cu Load Removal by MWS Control Measure Implementation during Fiscal Year (pounds)									
		By LID Ordinance / SCMs [1]	By Construction Sites Inspected [2]	By Illicit Discharge Program [2]	By Street Sweeping [2]	By Home Buyout Program [1]	By Trees Planted [1]	By Stream Buffers [1]	By Industrial Sites Inspected [2]	By Field Screenings [2]	**Total Pollutant Load Removed from Watershed** (lbs)
All Watersheds	FY21	188	0	<0.01	337	221	0	268	3.26	0	1,017
Back Creek	FY21	0	0	0	0	0	0	0	0	0	0
Browns Creek	FY21	4.76	0	<0.01	14	1.67	0	0	0.19	0	20
Bull Run Creek	FY21	0	0	0	0	0	0	0	0	0	0
Cooper Creek	FY21	1.12	0	<0.01	4.04	13	0	0	0	0	18
Cub Creek	FY21	0	0	0	0	0	0	0	0	0	0
Cumberland River	FY21	111	0	<0.01	77	56	0	47	0.14	0	291
Davidson Branch	FY21	0.5	0	<0.01	1.01	0	0	0	0	0	1.51
Dry Creek	FY21	1.05	0	<0.01	4.38	0.29	0	4.34	0.09	0	10
Ewing Creek	FY21	6	0	<0.01	12	1.27	0	20	0.19	0	40
Gibson Creek	FY21	0.46	0	<0.01	4.38	8.23	0	1.99	0	0	15
Gizzard Branch	FY21	0.57	0	0	1.01	0	0	1.38	0	0	2.96
Harpeth River	FY21	5.58	0	<0.01	22	0.73	0	4.06	0	0	32
Indian Creek	FY21	0	0	0	0	0	0	0	0	0	0
Island Creek	FY21	0	0	0	0	0	0	0	0	0	0
Little Harpeth River	FY21	0.32	0	<0.01	1.35	0	0	2.84	0	0	4.51
Loves Branch	FY21	0.35	0	0	1.35	0.12	0	0	0	0	1.81
Mansker Creek	FY21	0.5	0	0	0	0	0	0	0	0	0.5
Marrowbone Creek	FY21	0.07	0	<0.01	0	0	0	0	0	0	0.07
Mill Creek Lower	FY21	7.98	0	<0.01	43	17	0	16	0.14	0	84
Mill Creek Upper	FY21	2.72	0	<0.01	13	62	0	15	0	0	92
Overall Creek	FY21	0.44	0	<0.01	0.67	0.12	0	2.76	0	0	3.99
Pages Branch	FY21	1.73	0	<0.01	5.05	0.32	0	4.58	1.14	0	13
Percy Priest Lake, Lower	FY21	1.6	0	<0.01	27	0.1	0	0	0	0	29
Percy Priest Lake, Upper	FY21	5.45	0	<0.01	3.7	0	0	27	1.08	0	37
Pond Creek	FY21	0	0	0	0	0	0	0	0	0	0
Richland Creek	FY21	16	0	<0.01	24	1.69	0	18	0.2	0	60
Sandy Creek	FY21	0.18	0	<0.01	1.35	0	0	0	0	0	1.53
Sevenmile Creek	FY21	2.08	0	<0.01	25	3.03	0	9.63	0	0	40
South Harpeth River, Lower	FY21	0.03	0	0	1.01	0	0	0	0	0	1.04
Stoner Creek	FY21	6.22	0	<0.01	20	0.36	0	25	0.1	0	52
Stones River	FY21	1.96	0	<0.01	13	0	0	33	0	0	48
Sugartree Creek	FY21	1.07	0	<0.01	5.72	0.05	0	4.29	0	0	11
Sulpher Creek	FY21	0.2	0	<0.01	0	0	0	0	0	0	0.2
Sycamore Creek	FY21	0.06	0	0	0	0	0	2.41	0	0	2.47
Whites Creek	FY21	7.9	0	0	12	55	0	29	0	0	104

Based on average annual rainfall conditions: (1) – Accounts for all control measures implemented in watershed thru end of FY (2) – Based on control measures implemented during the fiscal year

Watershed	Year	Pollutant: O&G Load Removal by MWS Control Measure Implementation during Fiscal Year (pounds)									
		By LID Ordinance / SCMs [1]	By Construction Sites Inspected [2]	By Illicit Discharge Program [2]	By Street Sweeping [2]	By Home Buyout Program [1]	By Trees Planted [1]	By Stream Buffers [1]	By Industrial Sites Inspected [2]	By Field Screenings [2]	**Total Pollutant Load Removed from Watershed** (lbs)
All Watersheds	FY21	61,165	0	8.11	7,448	0	0	550	160	14	69,345
Back Creek	FY21	0	0	0	0	0	0	0	0	0	0
Browns Creek	FY21	939	0	0.41	305	0	0	1.18	9.07	1.08	1,256
Bull Run Creek	FY21	0	0	0	0	0	0	0	0	0	0
Cooper Creek	FY21	193	0	<0.01	89	0	0	0.22	0	0	282
Cub Creek	FY21	0	0	0	0	0	0	0	0	0	0
Cumberland River	FY21	36,520	0	2.19	1,706	0	0	75	6.92	0	38,310
Davidson Branch	FY21	132	0	<0.01	22	0	0	0	0	0	155
Dry Creek	FY21	214	0	0.01	97	0	0	7.23	4.55	0	322
Ewing Creek	FY21	1,162	0	<0.01	261	0	0	44	9.19	0	1,475
Gibson Creek	FY21	139	0	0.09	97	0	0	2.35	0	0	238
Gizzard Branch	FY21	176	0	0	22	0	0	1.64	0	0	200
Harpeth River	FY21	1,137	0	0.05	484	0	0	20	0	0	1,641
Indian Creek	FY21	0	0	0	0	0	0	0	0	0	0
Island Creek	FY21	0	0	0	0	0	0	0	0	0	0
Little Harpeth River	FY21	110	0	<0.01	30	0	0	5	0	0	145
Loves Branch	FY21	91	0	0	30	0	0	0	0	0	120
Mansker Creek	FY21	119	0	0	0	0	0	0	0	0	119
Marrowbone Creek	FY21	19	0	0.01	0	0	0	0	0	0	19
Mill Creek Lower	FY21	1,683	0	1	946	0	0	65	6.92	5.15	2,707
Mill Creek Upper	FY21	683	0	0.05	283	0	0	39	0	2.38	1,007
Overall Creek	FY21	131	0	1.46	15	0	0	7.83	0	0	155
Pages Branch	FY21	287	0	0.37	112	0	0	7.06	56	0	462
Percy Priest Lake, Lower	FY21	884	0	0.02	603	0	0	6.48	0	0	1,494
Percy Priest Lake, Upper	FY21	933	0	0.12	82	0	0	61	53	3.29	1,132
Pond Creek	FY21	0	0	0	0	0	0	0	0	0	0
Richland Creek	FY21	7,272	0	0.05	521	0	0	26	9.75	0	7,829
Sandy Creek	FY21	37	0	<0.01	30	0	0	0	0	0	66
Sevenmile Creek	FY21	934	0	0.42	559	0	0	12	0	1.38	1,507
South Harpeth River, Lower	FY21	11	0	0	22	0	0	3.62	0	0	37
Stoner Creek	FY21	3,062	0	0.37	447	0	0	30	4.77	0	3,544
Stones River	FY21	451	0	0.01	290	0	0	40	0	0.43	782
Sugartree Creek	FY21	401	0	1.46	127	0	0	5.47	0	0	534
Sulpher Creek	FY21	39	0	<0.01	0	0	0	0	0	0	39
Sycamore Creek	FY21	31	0	0	0	0	0	2.87	0	0	34
Whites Creek	FY21	3,379	0	0	268	0	0	88	0	0	3,736

Based on average annual rainfall conditions: (1) – Accounts for all control measures implemented in watershed thru end of FY (2) – Based on control measures implemented during the fiscal year

Watershed	Year	Pollutant: TSS Load Removal by MWS Control Measure Implementation during Fiscal Year (pounds)									
		By LID Ordinance / SCMs [1]	By Construction Sites Inspected [2]	By Illicit Discharge Program [2]	By Street Sweeping [2]	By Home Buyout Program [1]	By Trees Planted [1]	By Stream Buffers [1]	By Industrial Sites Inspected [2]	By Field Screenings [2]	**Total Pollutant Load Removed from Watershed** (lbs)
All Watersheds	FY21	662,581	10,830,215	46,006	1,895,435	89	0	3,402	19,980	1,713	13,459,420
Back Creek	FY21	0	0	0	0	0	0	0	0	0	0
Browns Creek	FY21	14,805	596,316	5,934	77,713	0	0	3.86	1,133	134	696,040
Bull Run Creek	FY21	0	0	0	0	0	0	0	0	0	0
Cooper Creek	FY21	3,900	82,939	0.01	22,745	5.76	0	0.88	0	0	109,591
Cub Creek	FY21	0	0	0	0	0	0	0	0	0	0
Cumberland River	FY21	409,514	2,322,503	7,423	434,055	24	0	536	864	0	3,174,918
Davidson Branch	FY21	1,614	37,143	0.01	5,686	0	0	0	0	0	44,443
Dry Creek	FY21	2,701	79,912	0.02	24,641	0	0	45	568	0	107,867
Ewing Creek	FY21	14,751	279,261	1,483	66,340	0	0	237	1,148	0	363,221
Gibson Creek	FY21	1,815	68,070	1,484	24,641	2.87	0	21	0	0	96,032
Gizzard Branch	FY21	1,982	28,865	0	5,686	0	0	14	0	0	36,548
Harpeth River	FY21	20,071	159,166	2,967	123,203	0	0	91	0	0	305,497
Indian Creek	FY21	0	0	0	0	0	0	0	0	0	0
Island Creek	FY21	0	0	0	0	0	0	0	0	0	0
Little Harpeth River	FY21	1,486	551,926	0.01	7,582	0	0	36	0	0	561,030
Loves Branch	FY21	1,009	1,900	0	7,582	0	0	0	0	0	10,490
Mansker Creek	FY21	1,432	17,801	0	0	0	0	0	0	0	19,233
Marrowbone Creek	FY21	223	0	742	0	0	0	0	0	0	964
Mill Creek Lower	FY21	23,974	813,616	4,453	240,720	6.06	0	251	864	643	1,084,528
Mill Creek Upper	FY21	9,552	275,836	1,483	72,027	28	0	224	0	298	359,447
Overall Creek	FY21	1,567	126,553	746	3,791	0	0	47	0	0	132,704
Pages Branch	FY21	6,085	41,941	2,968	28,432	0	0	51	6,974	0	86,451
Percy Priest Lake, Lower	FY21	8,321	66,465	0.06	153,530	0	0	26	0	0	228,343
Percy Priest Lake, Upper	FY21	13,458	3,228,719	3,709	20,850	0	0	332	6,615	411	3,274,094
Pond Creek	FY21	0	31,591	742	0	0	0	0	0	0	32,333
Richland Creek	FY21	56,634	753,061	2,225	132,680	0	0	198	1,218	0	946,016
Sandy Creek	FY21	487	60,559	0.01	7,582	0	0	0	0	0	68,628
Sevenmile Creek	FY21	9,197	406,082	2,226	142,158	0	0	103	0	173	559,938
South Harpeth River, Lower	FY21	108	4,769	2,225	5,686	0	0	15	0	0	12,804
Stoner Creek	FY21	21,016	214,852	1.02	113,726	0	0	260	595	0	350,450
Stones River	FY21	5,609	130,645	742	73,922	0	0	342	0	54	211,313
Sugartree Creek	FY21	4,161	156,365	1,487	32,222	0	0	46	0	0	194,281
Sulpher Creek	FY21	490	0	0.01	0	0	0	0	0	0	490
Sycamore Creek	FY21	302	190,088	0	0	0	0	25	0	0	190,416
Whites Creek	FY21	26,316	103,271	2,967	68,236	22	0	497	0	0	201,308

Based on average annual rainfall conditions: (1) – Accounts for all control measures implemented in watershed thru end of FY (2) – Based on control measures implemented during the fiscal year

Watershed	Year	Pollutant: TDS Load Removal by MWS Control Measure Implementation during Fiscal Year (pounds)									
		By LID Ordinance / SCMs [1]	By Construction Sites Inspected [2]	By Illicit Discharge Program [2]	By Street Sweeping [2]	By Home Buyout Program [1]	By Trees Planted [1]	By Stream Buffers [1]	By Industrial Sites Inspected [2]	By Field Screenings [2]	**Total Pollutant Load Removed from Watershed** (lbs)
All Watersheds	FY21	2,478,379	0	0	0	0	0	36,036	0	0	2,514,415
Back Creek	FY21	0	0	0	0	0	0	0	0	0	0
Browns Creek	FY21	49,254	0	0	0	0	0	69	0	0	49,324
Bull Run Creek	FY21	0	0	0	0	0	0	0	0	0	0
Cooper Creek	FY21	19,578	0	0	0	0	0	7.1	0	0	19,585
Cub Creek	FY21	0	0	0	0	0	0	0	0	0	0
Cumberland River	FY21	1,551,461	0	0	0	0	0	4,844	0	0	1,556,305
Davidson Branch	FY21	4,455	0	0	0	0	0	0	0	0	4,455
Dry Creek	FY21	6,748	0	0	0	0	0	655	0	0	7,403
Ewing Creek	FY21	30,763	0	0	0	0	0	3,893	0	0	34,656
Gibson Creek	FY21	6,703	0	0	0	0	0	136	0	0	6,839
Gizzard Branch	FY21	7,124	0	0	0	0	0	95	0	0	7,219
Harpeth River	FY21	99,165	0	0	0	0	0	1,079	0	0	100,243
Indian Creek	FY21	0	0	0	0	0	0	0	0	0	0
Island Creek	FY21	0	0	0	0	0	0	0	0	0	0
Little Harpeth River	FY21	5,368	0	0	0	0	0	249	0	0	5,617
Loves Branch	FY21	2,231	0	0	0	0	0	0	0	0	2,231
Mansker Creek	FY21	4,605	0	0	0	0	0	0	0	0	4,605
Marrowbone Creek	FY21	647	0	0	0	0	0	0	0	0	647
Mill Creek Lower	FY21	55,669	0	0	0	0	0	5,436	0	0	61,105
Mill Creek Upper	FY21	31,444	0	0	0	0	0	2,213	0	0	33,657
Overall Creek	FY21	4,750	0	0	0	0	0	339	0	0	5,089
Pages Branch	FY21	8,861	0	0	0	0	0	462	0	0	9,322
Percy Priest Lake, Lower	FY21	48,528	0	0	0	0	0	212	0	0	48,740
Percy Priest Lake, Upper	FY21	17,097	0	0	0	0	0	4,990	0	0	22,086
Pond Creek	FY21	0	0	0	0	0	0	0	0	0	0
Richland Creek	FY21	196,554	0	0	0	0	0	1,506	0	0	198,059
Sandy Creek	FY21	1,403	0	0	0	0	0	0	0	0	1,403
Sevenmile Creek	FY21	46,384	0	0	0	0	0	687	0	0	47,071
South Harpeth River, Lower	FY21	788	0	0	0	0	0	118	0	0	906
Stoner Creek	FY21	168,286	0	0	0	0	0	1,724	0	0	170,010
Stones River	FY21	15,193	0	0	0	0	0	2,409	0	0	17,602
Sugartree Creek	FY21	16,405	0	0	0	0	0	308	0	0	16,713
Sulpher Creek	FY21	921	0	0	0	0	0	0	0	0	921
Sycamore Creek	FY21	911	0	0	0	0	0	166	0	0	1,077
Whites Creek	FY21	77,085	0	0	0	0	0	4,439	0	0	81,524

Based on average annual rainfall conditions: (1) – Accounts for all control measures implemented in watershed thru end of FY (2) – Based on control measures implemented during the fiscal year

Watershed	Year	Pollutant: E. coli Load Removal by MWS Control Measure Implementation during Fiscal Year (most probable number to 10e9)									
		By LID Ordinance / SCMs [1]	By Construction Sites Inspected [2]	By Illicit Discharge Program [2]	By Street Sweeping [2]	By Home Buyout Program [1]	By Trees Planted [1]	By Stream Buffers [1]	By Industrial Sites Inspected [2]	By Field Screenings [2]	**Total Pollutant Load Removed from Watershed** (MPN e9)
All Watersheds	FY21	365,214	0	4,211	115,412	<0.01	0	<0.01	0	0	484,838
Back Creek	FY21	0	0	0	0	0	0	0	0	0	0
Browns Creek	FY21	14,259	0	214	4,732	<0.01	0	<0.01	0	0	19,204
Bull Run Creek	FY21	0	0	0	0	0	0	0	0	0	0
Cooper Creek	FY21	8,936	0	1.89	1,385	<0.01	0	0	0	0	10,323
Cub Creek	FY21	0	0	0	0	0	0	0	0	0	0
Cumberland River	FY21	204,682	0	1,138	26,429	<0.01	0	<0.01	0	0	232,249
Davidson Branch	FY21	1,113	0	1.89	346	0	0	0	0	0	1,461
Dry Creek	FY21	1,108	0	3.79	1,500	<0.01	0	<0.01	0	0	2,613
Ewing Creek	FY21	2,747	0	1.89	4,039	<0.01	0	<0.01	0	0	6,788
Gibson Creek	FY21	1,373	0	45	1,500	<0.01	0	<0.01	0	0	2,919
Gizzard Branch	FY21	591	0	0	346	0	0	<0.01	0	0	937
Harpeth River	FY21	43,782	0	28	7,502	<0.01	0	<0.01	0	0	51,312
Indian Creek	FY21	0	0	0	0	0	0	0	0	0	0
Island Creek	FY21	0	0	0	0	0	0	0	0	0	0
Little Harpeth River	FY21	833	0	1.89	462	0	0	<0.01	0	0	1,296
Loves Branch	FY21	207	0	0	462	<0.01	0	0	0	0	669
Mansker Creek	FY21	318	0	0	0	0	0	0	0	0	318
Marrowbone Creek	FY21	57	0	3.79	0	0	0	0	0	0	60
Mill Creek Lower	FY21	6,829	0	520	14,657	<0.01	0	<0.01	0	0	22,007
Mill Creek Upper	FY21	7,734	0	26	4,386	<0.01	0	<0.01	0	0	12,146
Overall Creek	FY21	1,507	0	759	231	<0.01	0	<0.01	0	0	2,497
Pages Branch	FY21	684	0	191	1,731	<0.01	0	<0.01	0	0	2,606
Percy Priest Lake, Lower	FY21	6,803	0	11	9,348	<0.01	0	0	0	0	16,162
Percy Priest Lake, Upper	FY21	6,045	0	61	1,270	0	0	<0.01	0	0	7,375
Pond Creek	FY21	0	0	0	0	0	0	0	0	0	0
Richland Creek	FY21	25,882	0	26	8,079	<0.01	0	<0.01	0	0	33,987
Sandy Creek	FY21	266	0	1.89	462	0	0	0	0	0	730
Sevenmile Creek	FY21	6,038	0	216	8,656	<0.01	0	<0.01	0	0	14,910
South Harpeth River, Lower	FY21	190	0	0	346	0	0	0	0	0	536
Stoner Creek	FY21	8,098	0	191	6,925	<0.01	0	<0.01	0	0	15,214
Stones River	FY21	1,621	0	5.68	4,501	0	0	<0.01	0	0	6,128
Sugartree Creek	FY21	2,729	0	759	1,962	<0.01	0	<0.01	0	0	5,450
Sulpher Creek	FY21	74	0	1.89	0	0	0	0	0	0	76
Sycamore Creek	FY21	261	0	0	0	0	0	<0.01	0	0	261
Whites Creek	FY21	10,449	0	0	4,155	<0.01	0	<0.01	0	0	14,604

Based on average annual rainfall conditions: (1) – Accounts for all control measures implemented in watershed thru end of FY (2) – Based on control measures implemented during the fiscal year

WIES Calculated Net Pollutant Loadings During FY21

The below tables represent the actual Net Pollutant Loading Calculations after considering the Pollutant Loading Reductions from Metro Nashville MS4 Program.

Watershed	Year	Baseline Pollutant Load (ac-ft)	Pollutant: Runoff									Net Pollutant Load from Watershed (ac-ft)
			Removal by MWS Control Measure Implementation during Fiscal Year (acre-foot)									
			LID Ordinance / SCMs [1]	Construction Sites Inspected [2]	Illicit Discharge Program [2]	Street Sweeping [2]	Home Buyout Program [1]	Trees Planted [1]	Stream Buffers [1]	Industrial Inspected [2]	Field Screenings [2]	
All Watersheds	FY21	284,706	25,665	0	0	0	133	5.66	429	0	0	258,474
Back Creek	FY21	131	0	0	0	0	0	0	0	0	0	131
Browns Creek	FY21	13,607	360	0	0	0	8.97	0.32	2.92	0	0	13,234
Bull Run Creek	FY21	505	0	0	0	0	0	0	0	0	0	505
Cooper Creek	FY21	3,283	110	0	0	0	4.11	0.04	0.72	0	0	3,168
Cub Creek	FY21	140	0	0	0	0	0	0	0	0	0	140
Cumberland River	FY21	53,388	14,883	0	0	0	24	3.3	78	0	0	38,400
Davidson Branch	FY21	2,182	45	0	0	0	0	0.05	0	0	0	2,136
Dry Creek	FY21	5,197	65	0	0	0	1.04	0.08	12	0	0	5,119
Ewing Creek	FY21	11,412	304	0	0	0	6.94	0.07	36	0	0	11,065
Gibson Creek	FY21	5,570	85	0	0	0	15	0.18	4.83	0	0	5,466
Gizzard Branch	FY21	2,043	77	0	0	0	0	0.01	5.15	0	0	1,961
Harpeth River	FY21	12,782	709	0	0	0	0.74	0.08	27	0	0	12,045
Indian Creek	FY21	337	0	0	0	0	0	0	0	0	0	337
Island Creek	FY21	188	0	0	0	0	0	0	0	0	0	188
Little Harpeth River	FY21	2,264	60	0	0	0	0	0.04	6.16	0	0	2,198
Loves Branch	FY21	2,459	25	0	0	0	0.24	0.03	0	0	0	2,433
Mansker Creek	FY21	3,931	38	0	0	0	0	0.02	0	0	0	3,893
Marrowbone Creek	FY21	2,623	12	0	0	0	0	0.01	0	0	0	2,611
Mill Creek Lower	FY21	38,375	628	0	0	0	18	0.16	43	0	0	37,686
Mill Creek Upper	FY21	12,760	314	0	0	0	1.94	0.18	35	0	0	12,410
Overall Creek	FY21	2,842	58	0	0	0	0.25	0.04	6.61	0	0	2,777
Pages Branch	FY21	4,326	126	0	0	0	1.69	0.05	6.86	0	0	4,191
Percy Priest Lake, Lower	FY21	12,748	175	0	0	0	1.33	0.07	1.06	0	0	12,570
Percy Priest Lake, Upper	FY21	11,039	290	0	0	0	0	0.03	45	0	0	10,703
Pond Creek	FY21	230	0	0	0	0	0	0	0	0	0	230
Richland Creek	FY21	16,034	3,747	0	0	0	17	0.45	14	0	0	12,256
Sandy Creek	FY21	1,007	11	0	0	0	0	<0.01	0	0	0	997
Sevenmile Creek	FY21	15,697	300	0	0	0	8.68	0.12	20	0	0	15,368
South Harpeth River, Lower	FY21	1,381	4.56	0	0	0	0	0.01	0.98	0	0	1,375
Stoner Creek	FY21	10,165	1,087	0	0	0	2.43	0.03	25	0	0	9,051
Stones River	FY21	11,744	155	0	0	0	0	0.14	18	0	0	11,571
Sugartree Creek	FY21	3,795	189	0	0	0	0.25	0.03	3.43	0	0	3,603
Sulpher Creek	FY21	818	14	0	0	0	0	<0.01	0	0	0	804
Sycamore Creek	FY21	4,704	14	0	0	0	0	<0.01	2.58	0	0	4,688
Whites Creek	FY21	15,001	1,779	0	0	0	21	0.12	35	0	0	13,164

Based on average annual rainfall conditions: (1) – Accounts for all control measures implemented in watershed thru end of FY (2) – Based on control measures implemented during the fiscal year

Watershed	Year	Baseline Pollutant Load (lbs)	Pollutant: BOD5 — Removal by MWS Control Measure Implementation during Fiscal Year (pounds)									Net Pollutant Load from Watershed (lbs)
			LID Ordinance / SCMs [1]	Construction Sites Inspected [2]	Illicit Discharge Program [2]	Street Sweeping [2]	Home Buyout Program [1]	Trees Planted [1]	Stream Buffers [1]	Industrial Inspected [2]	Field Screenings [2]	
All Watersheds	FY21	3,368,612	185,623	0	20	55,058	315	0	0	784	67	3,126,744
Back Creek	FY21	1,293	0	0	0	0	0	0	0	0	0	1,293
Browns Creek	FY21	142,704	4,020	0	1.04	2,257	12	0	0	44	5.27	136,363
Bull Run Creek	FY21	4,408	0	0	0	0	0	0	0	0	0	4,408
Cooper Creek	FY21	39,071	1,288	0	0.01	661	9.48	0	0	0	0	37,112
Cub Creek	FY21	1,491	0	0	0	0	0	0	0	0	0	1,491
Cumberland River	FY21	652,234	103,679	0	5.52	12,608	53	0	0	34	0	535,854
Davidson Branch	FY21	25,313	408	0	0.01	165	0	0	0	0	0	24,740
Dry Creek	FY21	60,158	796	0	0.02	716	2.06	0	0	22	0	58,621
Ewing Creek	FY21	130,824	4,099	0	0.01	1,927	9.11	0	0	45	0	124,745
Gibson Creek	FY21	76,411	556	0	0.22	716	18	0	0	0	0	75,121
Gizzard Branch	FY21	32,425	565	0	0	165	0	0	0	0	0	31,695
Harpeth River	FY21	150,708	6,946	0	0.14	3,579	5.22	0	0	0	0	140,178
Indian Creek	FY21	3,605	0	0	0	0	0	0	0	0	0	3,605
Island Creek	FY21	1,343	0	0	0	0	0	0	0	0	0	1,343
Little Harpeth River	FY21	26,843	358	0	0.01	220	0	0	0	0	0	26,264
Loves Branch	FY21	26,461	232	0	0	220	0.86	0	0	0	0	26,008
Mansker Creek	FY21	39,543	425	0	0	0	0	0	0	0	0	39,118
Marrowbone Creek	FY21	27,604	59	0	0.02	0	0	0	0	0	0	27,545
Mill Creek Lower	FY21	447,875	6,036	0	2.52	6,992	38	0	0	34	25	434,747
Mill Creek Upper	FY21	157,504	2,529	0	0.13	2,092	44	0	0	0	12	152,827
Overall Creek	FY21	33,909	433	0	3.68	110	0.85	0	0	0	0	33,362
Pages Branch	FY21	55,202	1,135	0	0.93	826	2.33	0	0	273	0	52,964
Percy Priest Lake, Lower	FY21	137,871	1,286	0	0.06	4,460	0.75	0	0	0	0	132,125
Percy Priest Lake, Upper	FY21	112,115	3,523	0	0.29	606	0	0	0	259	16	107,711
Pond Creek	FY21	2,378	0	0	0	0	0	0	0	0	0	2,378
Richland Creek	FY21	195,686	22,036	0	0.13	3,854	12	0	0	48	0	169,736
Sandy Creek	FY21	11,845	141	0	0.01	220	0	0	0	0	0	11,484
Sevenmile Creek	FY21	194,025	2,071	0	1.05	4,129	22	0	0	0	6.78	187,795
South Harpeth River, Lower	FY21	12,647	48	0	0	165	0	0	0	0	0	12,434
Stoner Creek	FY21	130,941	9,814	0	0.93	3,303	2.63	0	0	23	0	117,797
Stones River	FY21	154,843	1,532	0	0.03	2,147	0	0	0	0	2.11	151,161
Sugartree Creek	FY21	55,133	1,228	0	3.68	936	0.35	0	0	0	0	52,964
Sulpher Creek	FY21	7,580	132	0	0.01	0	0	0	0	0	0	7,448
Sycamore Creek	FY21	49,394	74	0	0	0	0	0	0	0	0	49,320
Whites Creek	FY21	167,227	10,176	0	0	1,982	82	0	0	0	0	154,987

Based on average annual rainfall conditions: (1) – Accounts for all control measures implemented in watershed thru end of FY (2) – Based on control measures implemented during the fiscal year

Watershed	Year	Baseline Pollutant Load (lbs)	Pollutant: COD — Removal by MWS Control Measure Implementation during Fiscal Year (pounds)									Net Pollutant Load from Watershed (lbs)
			LID Ordinance / SCMs [1]	Construction Sites Inspected [2]	Illicit Discharge Program [2]	Street Sweeping [2]	Home Buyout Program [1]	Trees Planted [1]	Stream Buffers [1]	Industrial Inspected [2]	Field Screenings [2]	
All Watersheds	FY21	29,263,843	1,453,779	0	54	110,116	571	0	4,021	7,868	675	27,686,761
Back Creek	FY21	12,694	0	0	0	0	0	0	0	0	0	12,694
Browns Creek	FY21	1,290,583	32,313	0	2.73	4,515	0	0	2.25	446	53	1,253,251
Bull Run Creek	FY21	47,296	0	0	0	0	0	0	0	0	0	47,296
Cooper Creek	FY21	338,845	9,510	0	0.02	1,321	37	0	0.51	0	0	327,976
Cub Creek	FY21	14,516	0	0	0	0	0	0	0	0	0	14,516
Cumberland River	FY21	5,552,318	849,795	0	15	25,217	157	0	634	340	0	4,676,161
Davidson Branch	FY21	236,255	3,297	0	0.02	330	0	0	0	0	0	232,628
Dry Creek	FY21	512,379	6,146	0	0.05	1,432	0	0	55	224	0	504,523
Ewing Creek	FY21	1,152,956	32,294	0	0.02	3,854	0	0	274	452	0	1,116,082
Gibson Creek	FY21	631,577	4,246	0	0.58	1,432	18	0	25	0	0	625,856
Gizzard Branch	FY21	263,289	4,457	0	0	330	0	0	18	0	0	258,484
Harpeth River	FY21	1,317,955	49,870	0	0.36	7,158	0	0	108	0	0	1,260,819
Indian Creek	FY21	34,869	0	0	0	0	0	0	0	0	0	34,869
Island Creek	FY21	17,096	0	0	0	0	0	0	0	0	0	17,096
Little Harpeth River	FY21	259,921	3,134	0	0.02	440	0	0	40	0	0	256,307
Loves Branch	FY21	255,833	1,979	0	0	440	0	0	0	0	0	253,414
Mansker Creek	FY21	383,340	3,318	0	0	0	0	0	0	0	0	380,022
Marrowbone Creek	FY21	273,490	445	0	0.05	0	0	0	0	0	0	273,046
Mill Creek Lower	FY21	3,685,321	50,062	0	6.64	13,985	39	0	451	340	253	3,620,184
Mill Creek Upper	FY21	1,333,032	20,624	0	0.34	4,184	179	0	235	0	117	1,307,692
Overall Creek	FY21	291,815	3,331	0	9.68	220	0	0	46	0	0	288,209
Pages Branch	FY21	456,979	10,633	0	2.44	1,652	0	0	60	2,746	0	441,885
Percy Priest Lake, Lower	FY21	1,320,772	15,831	0	0.14	8,919	0	0	15	0	0	1,296,007
Percy Priest Lake, Upper	FY21	1,024,217	27,053	0	0.77	1,211	0	0	375	2,605	162	992,811
Pond Creek	FY21	22,268	0	0	0	0	0	0	0	0	0	22,268
Richland Creek	FY21	1,699,643	145,905	0	0.34	7,708	0	0	246	480	0	1,545,304
Sandy Creek	FY21	100,363	1,117	0	0.02	440	0	0	0	0	0	98,805
Sevenmile Creek	FY21	1,636,919	19,750	0	2.75	8,259	0	0	124	0	68	1,608,715
South Harpeth River, Lower	FY21	136,468	325	0	0	330	0	0	8.55	0	0	135,804
Stoner Creek	FY21	1,083,739	67,758	0	2.44	6,607	0	0	319	234	0	1,008,819
Stones River	FY21	1,318,387	12,341	0	0.07	4,295	0	0	419	0	21	1,301,311
Sugartree Creek	FY21	455,688	9,640	0	9.68	1,872	0	0	55	0	0	444,110
Sulpher Creek	FY21	79,589	1,012	0	0.02	0	0	0	0	0	0	78,577
Sycamore Creek	FY21	480,374	627	0	0	0	0	0	31	0	0	479,717
Whites Creek	FY21	1,543,057	66,967	0	0	3,964	141	0	480	0	0	1,471,504

Based on average annual rainfall conditions: (1) – Accounts for all control measures implemented in watershed thru end of FY (2) – Based on control measures implemented during the fiscal year

Watershed	Year	Baseline Pollutant Load (lbs)	Pollutant: NH3 — Removal by MWS Control Measure Implementation during Fiscal Year (pounds)									Net Pollutant Load from Watershed (lbs)
			LID Ordinance / SCMs [1]	Construction Sites Inspected [2]	Illicit Discharge Program [2]	Street Sweeping [2]	Home Buyout Program [1]	Trees Planted [1]	Stream Buffers [1]	Industrial Inspected [2]	Field Screenings [2]	
All Watersheds	FY21	94,772	5,105	0	0.79	0	3.42	0	0	13	1.12	89,648
Back Creek	FY21	41	0	0	0	0	0	0	0	0	0	41
Browns Creek	FY21	4,576	106	0	0.04	0	<0.01	0	0	0.74	0.09	4,470
Bull Run Creek	FY21	164	0	0	0	0	0	0	0	0	0	164
Cooper Creek	FY21	1,116	25	0	<0.01	0	0.22	0	0	0	0	1,091
Cub Creek	FY21	45	0	0	0	0	0	0	0	0	0	45
Cumberland River	FY21	18,222	3,062	0	0.21	0	0.93	0	0	0.56	0	15,158
Davidson Branch	FY21	825	11	0	<0.01	0	0	0	0	0	0	813
Dry Creek	FY21	1,688	21	0	<0.01	0	<0.01	0	0	0.37	0	1,667
Ewing Creek	FY21	3,857	108	0	<0.01	0	<0.01	0	0	0.75	0	3,748
Gibson Creek	FY21	2,004	17	0	0.01	0	0.11	0	0	0	0	1,987
Gizzard Branch	FY21	877	18	0	0	0	0	0	0	0	0	859
Harpeth River	FY21	4,137	135	0	0.01	0	<0.01	0	0	0	0	4,002
Indian Creek	FY21	97	0	0	0	0	0	0	0	0	0	97
Island Creek	FY21	70	0	0	0	0	0	0	0	0	0	70
Little Harpeth River	FY21	780	13	0	<0.01	0	0	0	0	0	0	767
Loves Branch	FY21	831	6.74	0	0	0	<0.01	0	0	0	0	825
Mansker Creek	FY21	1,235	12	0	0	0	0	0	0	0	0	1,222
Marrowbone Creek	FY21	751	2.03	0	<0.01	0	0	0	0	0	0	749
Mill Creek Lower	FY21	12,479	190	0	0.1	0	0.24	0	0	0.56	0.42	12,288
Mill Creek Upper	FY21	4,077	76	0	<0.01	0	1.06	0	0	0	0.19	3,999
Overall Creek	FY21	927	11	0	0.14	0	<0.01	0	0	0	0	916
Pages Branch	FY21	1,522	45	0	0.04	0	<0.01	0	0	4.56	0	1,472
Percy Priest Lake, Lower	FY21	3,690	35	0	<0.01	0	<0.01	0	0	0	0	3,655
Percy Priest Lake, Upper	FY21	3,127	84	0	0.01	0	0	0	0	4.32	0.27	3,038
Pond Creek	FY21	63	0	0	0	0	0	0	0	0	0	63
Richland Creek	FY21	5,709	494	0	<0.01	0	<0.01	0	0	0.8	0	5,214
Sandy Creek	FY21	324	3.92	0	<0.01	0	0	0	0	0	0	320
Sevenmile Creek	FY21	5,159	61	0	0.04	0	<0.01	0	0	0	0.11	5,098
South Harpeth River, Lower	FY21	399	1.04	0	0	0	0	0	0	0	0	398
Stoner Creek	FY21	3,433	260	0	0.04	0	<0.01	0	0	0.39	0	3,173
Stones River	FY21	4,481	45	0	<0.01	0	0	0	0	0	0.04	4,436
Sugartree Creek	FY21	1,461	36	0	0.14	0	<0.01	0	0	0	0	1,426
Sulpher Creek	FY21	264	3.67	0	<0.01	0	0	0	0	0	0	260
Sycamore Creek	FY21	1,405	1.86	0	0	0	0	0	0	0	0	1,403
Whites Creek	FY21	4,938	221	0	0	0	0.85	0	0	0	0	4,716

Based on average annual rainfall conditions: (1) – Accounts for all control measures implemented in watershed thru end of FY (2) – Based on control measures implemented during the fiscal year

Watershed	Year	Baseline Pollutant Load (lbs)	Pollutant: TKN									Net Pollutant Load from Watershed (lbs)
			Removal by MWS Control Measure Implementation during Fiscal Year (pounds)									
			LID Ordinance / SCMs [1]	Construction Sites Inspected [2]	Illicit Discharge Program [2]	Street Sweeping [2]	Home Buyout Program [1]	Trees Planted [1]	Stream Buffers [1]	Industrial Inspected [2]	Field Screenings [2]	
All Watersheds	FY21	393,315	25,170	0	6.47	0	19	0	38	0	0	368,082
Back Creek	FY21	163	0	0	0	0	0	0	0	0	0	163
Browns Creek	FY21	15,798	560	0	0.33	0	0.93	0	0	0	0	15,237
Bull Run Creek	FY21	513	0	0	0	0	0	0	0	0	0	513
Cooper Creek	FY21	4,404	202	0	<0.01	0	0.37	0	0	0	0	4,202
Cub Creek	FY21	191	0	0	0	0	0	0	0	0	0	191
Cumberland River	FY21	74,572	14,768	0	1.75	0	2.55	0	4.38	0	0	59,795
Davidson Branch	FY21	2,648	43	0	<0.01	0	0	0	0	0	0	2,605
Dry Creek	FY21	7,080	87	0	0.01	0	0.16	0	0.35	0	0	6,993
Ewing Creek	FY21	14,854	420	0	<0.01	0	0.71	0	1.66	0	0	14,432
Gibson Creek	FY21	8,691	101	0	0.07	0	1.23	0	0.16	0	0	8,589
Gizzard Branch	FY21	3,384	85	0	0	0	0	0	0.11	0	0	3,299
Harpeth River	FY21	17,782	1,074	0	0.04	0	0.41	0	2.11	0	0	16,706
Indian Creek	FY21	512	0	0	0	0	0	0	0	0	0	512
Island Creek	FY21	115	0	0	0	0	0	0	0	0	0	115
Little Harpeth River	FY21	3,311	71	0	<0.01	0	0	0	0.23	0	0	3,240
Loves Branch	FY21	3,090	20	0	0	0	0.07	0	0	0	0	3,070
Mansker Creek	FY21	4,934	56	0	0	0	0	0	0	0	0	4,878
Marrowbone Creek	FY21	3,950	11	0	0.01	0	0	0	0	0	0	3,939
Mill Creek Lower	FY21	51,585	829	0	0.8	0	2.52	0	13	0	0	50,740
Mill Creek Upper	FY21	19,201	406	0	0.04	0	1.64	0	1.77	0	0	18,792
Overall Creek	FY21	4,080	54	0	1.17	0	0.07	0	0.23	0	0	4,025
Pages Branch	FY21	6,182	181	0	0.29	0	0.18	0	0.37	0	0	6,000
Percy Priest Lake, Lower	FY21	18,477	246	0	0.02	0	0.06	0	0	0	0	18,231
Percy Priest Lake, Upper	FY21	15,057	345	0	0.09	0	0	0	2.22	0	0	14,709
Pond Creek	FY21	331	0	0	0	0	0	0	0	0	0	331
Richland Creek	FY21	21,498	2,350	0	0.04	0	0.95	0	2.2	0	0	19,144
Sandy Creek	FY21	1,384	19	0	<0.01	0	0	0	0	0	0	1,365
Sevenmile Creek	FY21	22,689	366	0	0.33	0	1.7	0	0.78	0	0	22,320
South Harpeth River, Lower	FY21	1,753	7.22	0	0	0	0	0	0	0	0	1,746
Stoner Creek	FY21	14,988	1,450	0	0.29	0	0.2	0	2.04	0	0	13,535
Stones River	FY21	16,537	196	0	0.01	0	0	0	2.68	0	0	16,338
Sugartree Creek	FY21	6,011	180	0	1.17	0	0.03	0	0.35	0	0	5,830
Sulpher Creek	FY21	919	16	0	<0.01	0	0	0	0	0	0	903
Sycamore Creek	FY21	6,647	12	0	0	0	0	0	0.2	0	0	6,634
Whites Creek	FY21	19,984	1,016	0	0	0	4.98	0	2.33	0	0	18,961

Based on average annual rainfall conditions: (1) – Accounts for all control measures implemented in watershed thru end of FY (2) – Based on control measures implemented during the fiscal year

Watershed	Year	Baseline Pollutant Load (lbs)	Pollutant: NO2 + NO2 — Removal by MWS Control Measure Implementation during Fiscal Year (pounds)									Net Pollutant Load from Watershed (lbs)
			LID Ordinance / SCMs [1]	Construction Sites Inspected [2]	Illicit Discharge Program [2]	Street Sweeping [2]	Home Buyout Program [1]	Trees Planted [1]	Stream Buffers [1]	Industrial Inspected [2]	Field Screenings [2]	
All Watersheds	FY21	168,657	13,744	0	0.09	0	1.25	0	5.76	31	2.66	154,872
Back Creek	FY21	71	0	0	0	0	0	0	0	0	0	71
Browns Creek	FY21	7,881	201	0	<0.01	0	0	0	0.01	1.76	0.21	7,678
Bull Run Creek	FY21	257	0	0	0	0	0	0	0	0	0	257
Cooper Creek	FY21	1,848	65	0	<0.01	0	0.08	0	<0.01	0	0	1,783
Cub Creek	FY21	81	0	0	0	0	0	0	0	0	0	81
Cumberland River	FY21	32,395	7,745	0	0.03	0	0.34	0	0.44	1.34	0	24,647
Davidson Branch	FY21	1,221	25	0	<0.01	0	0	0	0	0	0	1,196
Dry Creek	FY21	3,097	41	0	<0.01	0	0	0	0.02	0.88	0	3,056
Ewing Creek	FY21	6,577	189	0	<0.01	0	0	0	0.15	1.78	0	6,386
Gibson Creek	FY21	3,404	37	0	<0.01	0	0.04	0	0.01	0	0	3,367
Gizzard Branch	FY21	1,374	38	0	0	0	0	0	0.01	0	0	1,336
Harpeth River	FY21	7,195	397	0	<0.01	0	0	0	0.48	0	0	6,798
Indian Creek	FY21	202	0	0	0	0	0	0	0	0	0	202
Island Creek	FY21	86	0	0	0	0	0	0	0	0	0	86
Little Harpeth River	FY21	1,389	25	0	<0.01	0	0	0	0.03	0	0	1,364
Loves Branch	FY21	1,384	14	0	0	0	0	0	0	0	0	1,370
Mansker Creek	FY21	2,231	24	0	0	0	0	0	0	0	0	2,207
Marrowbone Creek	FY21	1,582	4.48	0	<0.01	0	0	0	0	0	0	1,577
Mill Creek Lower	FY21	23,052	316	0	0.01	0	0.08	0	2.8	1.34	1	22,731
Mill Creek Upper	FY21	7,540	156	0	<0.01	0	0.39	0	0.3	0	0.46	7,383
Overall Creek	FY21	1,672	30	0	0.02	0	0	0	0.04	0	0	1,642
Pages Branch	FY21	2,639	51	0	<0.01	0	0	0	0.03	11	0	2,577
Percy Priest Lake, Lower	FY21	7,449	109	0	<0.01	0	0	0	0.04	0	0	7,340
Percy Priest Lake, Upper	FY21	6,647	160	0	<0.01	0	0	0	0.22	10	0.64	6,476
Pond Creek	FY21	130	0	0	0	0	0	0	0	0	0	130
Richland Creek	FY21	9,429	2,029	0	<0.01	0	0	0	0.27	1.89	0	7,398
Sandy Creek	FY21	571	6.88	0	<0.01	0	0	0	0	0	0	564
Sevenmile Creek	FY21	9,130	163	0	<0.01	0	0	0	0.06	0	0.27	8,966
South Harpeth River, Lower	FY21	773	3.26	0	0	0	0	0	0.02	0	0	770
Stoner Creek	FY21	5,947	778	0	<0.01	0	0	0	0.13	0.92	0	5,169
Stones River	FY21	7,267	85	0	<0.01	0	0	0	0.17	0	0.08	7,182
Sugartree Creek	FY21	2,346	96	0	0.02	0	0	0	0.02	0	0	2,251
Sulpher Creek	FY21	441	6.87	0	<0.01	0	0	0	0	0	0	434
Sycamore Creek	FY21	2,717	6.59	0	0	0	0	0	0.01	0	0	2,711
Whites Creek	FY21	8,634	946	0	0	0	0.31	0	0.48	0	0	7,687

Based on average annual rainfall conditions: (1) – Accounts for all control measures implemented in watershed thru end of FY (2) – Based on control measures implemented during the fiscal year

Watershed	Year	Baseline Pollutant Load (lbs)	Pollutant: TN									Net Pollutant Load from Watershed (lbs)
			Removal by MWS Control Measure Implementation during Fiscal Year (pounds)									
			LID Ordinance / SCMs [1]	Construction Sites Inspected [2]	Illicit Discharge Program [2]	Street Sweeping [2]	Home Buyout Program [1]	Trees Planted [1]	Stream Buffers [1]	Industrial Inspected [2]	Field Screenings [2]	
All Watersheds	FY21	564,436	32,824	0	4.68	15,795	24	0	38	0	0	515,750
Back Creek	FY21	228	0	0	0	0	0	0	0	0	0	228
Browns Creek	FY21	23,467	672	0	0.24	648	1.1	0	0	0	0	22,147
Bull Run Creek	FY21	744	0	0	0	0	0	0	0	0	0	744
Cooper Creek	FY21	6,340	247	0	<0.01	190	0.56	0	0	0	0	5,903
Cub Creek	FY21	265	0	0	0	0	0	0	0	0	0	265
Cumberland River	FY21	107,973	19,346	0	1.26	3,617	3.55	0	4.28	0	0	85,000
Davidson Branch	FY21	3,848	59	0	<0.01	47	0	0	0	0	0	3,741
Dry Creek	FY21	10,111	110	0	<0.01	205	0.19	0	0.34	0	0	9,795
Ewing Creek	FY21	21,475	522	0	<0.01	553	0.84	0	1.58	0	0	20,397
Gibson Creek	FY21	12,166	108	0	0.05	205	1.51	0	0.15	0	0	11,852
Gizzard Branch	FY21	4,766	100	0	0	47	0	0	0.11	0	0	4,619
Harpeth River	FY21	25,578	1,318	0	0.03	1,027	0.48	0	2.21	0	0	23,231
Indian Creek	FY21	693	0	0	0	0	0	0	0	0	0	693
Island Creek	FY21	191	0	0	0	0	0	0	0	0	0	191
Little Harpeth River	FY21	4,639	73	0	<0.01	63	0	0	0.22	0	0	4,503
Loves Branch	FY21	4,419	29	0	0	63	0.08	0	0	0	0	4,327
Mansker Creek	FY21	6,932	68	0	0	0	0	0	0	0	0	6,864
Marrowbone Creek	FY21	5,355	12	0	<0.01	0	0	0	0	0	0	5,343
Mill Creek Lower	FY21	74,553	918	0	0.58	2,006	3.11	0	14	0	0	71,611
Mill Creek Upper	FY21	26,876	452	0	0.03	600	2.56	0	1.71	0	0	25,820
Overall Creek	FY21	5,670	69	0	0.84	32	0.08	0	0.22	0	0	5,568
Pages Branch	FY21	8,882	171	0	0.21	237	0.21	0	0.36	0	0	8,474
Percy Priest Lake, Lower	FY21	26,429	309	0	0.01	1,279	0.07	0	0	0	0	24,841
Percy Priest Lake, Upper	FY21	21,028	400	0	0.07	174	0	0	2.13	0	0	20,452
Pond Creek	FY21	449	0	0	0	0	0	0	0	0	0	449
Richland Creek	FY21	31,401	3,396	0	0.03	1,106	1.11	0	2.19	0	0	26,896
Sandy Creek	FY21	1,983	22	0	<0.01	63	0	0	0	0	0	1,898
Sevenmile Creek	FY21	32,472	434	0	0.24	1,185	2	0	0.74	0	0	30,850
South Harpeth River, Lower	FY21	2,476	9.63	0	0	47	0	0	0	0	0	2,419
Stoner Creek	FY21	21,600	2,013	0	0.21	948	0.24	0	1.94	0	0	18,637
Stones River	FY21	23,973	233	0	0.01	616	0	0	2.54	0	0	23,121
Sugartree Creek	FY21	8,566	221	0	0.84	269	0.03	0	0.33	0	0	8,075
Sulpher Creek	FY21	1,313	18	0	<0.01	0	0	0	0	0	0	1,295
Sycamore Creek	FY21	9,102	14	0	0	0	0	0	0.19	0	0	9,088
Whites Creek	FY21	28,472	1,482	0	0	569	6.36	0	2.22	0	0	26,413

Based on average annual rainfall conditions: (1) – Accounts for all control measures implemented in watershed thru end of FY (2) – Based on control measures implemented during the fiscal year

Watershed	Year	Baseline Pollutant Load (lbs)	Pollutant: Diss. P									Net Pollutant Load from Watershed (lbs)
			Removal by MWS Control Measure Implementation during Fiscal Year (pounds)									
			LID Ordinance / SCMs [1]	Construction Sites Inspected [2]	Illicit Discharge Program [2]	Street Sweeping [2]	Home Buyout Program [1]	Trees Planted [1]	Stream Buffers [1]	Industrial Inspected [2]	Field Screenings [2]	
All Watersheds	FY21	196,677	8,393	0	0	0	18	0	89	0	0	188,177
Back Creek	FY21	117	0	0	0	0	0	0	0	0	0	117
Browns Creek	FY21	5,776	233	0	0	0	1.18	0	0.13	0	0	5,542
Bull Run Creek	FY21	337	0	0	0	0	0	0	0	0	0	337
Cooper Creek	FY21	2,449	135	0	0	0	0.07	0	0	0	0	2,314
Cub Creek	FY21	128	0	0	0	0	0	0	0	0	0	128
Cumberland River	FY21	33,030	4,835	0	0	0	1.56	0	12	0	0	28,182
Davidson Branch	FY21	1,237	17	0	0	0	0	0	0	0	0	1,220
Dry Creek	FY21	3,358	21	0	0	0	0.2	0	1.93	0	0	3,335
Ewing Creek	FY21	7,326	69	0	0	0	0.89	0	11	0	0	7,245
Gibson Creek	FY21	4,380	24	0	0	0	1.36	0	0.33	0	0	4,354
Gizzard Branch	FY21	1,069	17	0	0	0	0	0	0.23	0	0	1,052
Harpeth River	FY21	11,061	685	0	0	0	0.51	0	2.23	0	0	10,374
Indian Creek	FY21	367	0	0	0	0	0	0	0	0	0	367
Island Creek	FY21	52	0	0	0	0	0	0	0	0	0	52
Little Harpeth River	FY21	1,682	14	0	0	0	0	0	0.48	0	0	1,668
Loves Branch	FY21	1,630	5.22	0	0	0	0.09	0	0	0	0	1,625
Mansker Creek	FY21	2,818	9.95	0	0	0	0	0	0	0	0	2,808
Marrowbone Creek	FY21	2,679	1.51	0	0	0	0	0	0	0	0	2,677
Mill Creek Lower	FY21	22,105	139	0	0	0	2.79	0	16	0	0	21,947
Mill Creek Upper	FY21	11,392	118	0	0	0	0.17	0	4.76	0	0	11,269
Overall Creek	FY21	2,284	24	0	0	0	0.08	0	0.47	0	0	2,259
Pages Branch	FY21	2,725	19	0	0	0	0.23	0	1.16	0	0	2,705
Percy Priest Lake, Lower	FY21	12,105	151	0	0	0	0.07	0	0	0	0	11,954
Percy Priest Lake, Upper	FY21	8,005	78	0	0	0	0	0	14	0	0	7,913
Pond Creek	FY21	247	0	0	0	0	0	0	0	0	0	247
Richland Creek	FY21	9,873	837	0	0	0	1.19	0	3.67	0	0	9,031
Sandy Creek	FY21	810	3.6	0	0	0	0	0	0	0	0	806
Sevenmile Creek	FY21	12,804	136	0	0	0	2.15	0	1.6	0	0	12,664
South Harpeth River, Lower	FY21	1,202	3.21	0	0	0	0	0	0	0	0	1,199
Stoner Creek	FY21	8,403	347	0	0	0	0.26	0	4.19	0	0	8,052
Stones River	FY21	6,077	38	0	0	0	0	0	5.98	0	0	6,033
Sugartree Creek	FY21	2,895	53	0	0	0	0.03	0	0.73	0	0	2,841
Sulpher Creek	FY21	557	2.15	0	0	0	0	0	0	0	0	555
Sycamore Creek	FY21	4,481	4.61	0	0	0	0	0	0.41	0	0	4,476
Whites Creek	FY21	11,216	372	0	0	0	4.77	0	7.69	0	0	10,831

Based on average annual rainfall conditions: (1) – Accounts for all control measures implemented in watershed thru end of FY (2) – Based on control measures implemented during the fiscal year

Watershed	Year	Baseline Pollutant Load (lbs)	Pollutant: TP									Net Pollutant Load from Watershed (lbs)
			Removal by MWS Control Measure Implementation during Fiscal Year (pounds)									
			LID Ordinance / SCMs [1]	Construction Sites Inspected [2]	Illicit Discharge Program [2]	Street Sweeping [2]	Home Buyout Program [1]	Trees Planted [1]	Stream Buffers [1]	Industrial Inspected [2]	Field Screenings [2]	
All Watersheds	FY21	317,194	13,662	0	0.83	6,318	18	0	135	0	0	297,060
Back Creek	FY21	173	0	0	0	0	0	0	0	0	0	173
Browns Creek	FY21	10,119	375	0	0.04	259	1.2	0	0.15	0	0	9,484
Bull Run Creek	FY21	518	0	0	0	0	0	0	0	0	0	518
Cooper Creek	FY21	3,869	193	0	<0.01	76	0.07	0	0	0	0	3,600
Cub Creek	FY21	193	0	0	0	0	0	0	0	0	0	193
Cumberland River	FY21	55,080	7,943	0	0.23	1,447	1.59	0	19	0	0	45,669
Davidson Branch	FY21	2,078	29	0	<0.01	19	0	0	0	0	0	2,030
Dry Creek	FY21	5,381	43	0	<0.01	82	0.21	0	2.66	0	0	5,253
Ewing Creek	FY21	11,858	178	0	<0.01	221	0.91	0	15	0	0	11,443
Gibson Creek	FY21	7,024	40	0	0.01	82	1.38	0	0.58	0	0	6,900
Gizzard Branch	FY21	1,991	30	0	0	19	0	0	0.41	0	0	1,941
Harpeth River	FY21	17,158	974	0	0.01	411	0.52	0	3.59	0	0	15,770
Indian Creek	FY21	544	0	0	0	0	0	0	0	0	0	544
Island Creek	FY21	95	0	0	0	0	0	0	0	0	0	95
Little Harpeth River	FY21	2,795	25	0	<0.01	25	0	0	0.83	0	0	2,744
Loves Branch	FY21	2,653	12	0	0	25	0.09	0	0	0	0	2,616
Mansker Creek	FY21	4,374	20	0	0	0	0	0	0	0	0	4,354
Marrowbone Creek	FY21	4,041	2.93	0	<0.01	0	0	0	0	0	0	4,038
Mill Creek Lower	FY21	36,026	302	0	0.1	802	2.84	0	25	0	0	34,894
Mill Creek Upper	FY21	17,517	199	0	0.01	240	0.18	0	7.2	0	0	17,070
Overall Creek	FY21	3,515	38	0	0.15	13	0.08	0	0.82	0	0	3,464
Pages Branch	FY21	4,498	50	0	0.04	95	0.23	0	1.79	0	0	4,350
Percy Priest Lake, Lower	FY21	18,945	246	0	<0.01	512	0.07	0	0	0	0	18,187
Percy Priest Lake, Upper	FY21	12,397	190	0	0.01	69	0	0	19	0	0	12,119
Pond Creek	FY21	360	0	0	0	0	0	0	0	0	0	360
Richland Creek	FY21	16,505	1,274	0	0.01	442	1.21	0	6.26	0	0	14,781
Sandy Creek	FY21	1,250	7.73	0	<0.01	25	0	0	0	0	0	1,217
Sevenmile Creek	FY21	20,136	224	0	0.04	474	2.19	0	2.79	0	0	19,433
South Harpeth River, Lower	FY21	1,854	4.62	0	0	19	0	0	0	0	0	1,830
Stoner Creek	FY21	13,293	513	0	0.04	379	0.26	0	7.3	0	0	12,393
Stones River	FY21	10,816	78	0	<0.01	246	0	0	10	0	0	10,481
Sugartree Creek	FY21	4,797	87	0	0.15	107	0.03	0	1.27	0	0	4,601
Sulpher Creek	FY21	870	5.57	0	<0.01	0	0	0	0	0	0	864
Sycamore Creek	FY21	6,751	7.97	0	0	0	0	0	0.71	0	0	6,742
Whites Creek	FY21	17,723	571	0	0	227	4.85	0	12	0	0	16,909

Based on average annual rainfall conditions: (1) – Accounts for all control measures implemented in watershed thru end of FY (2) – Based on control measures implemented during the fiscal year

Watershed	Year	Baseline Pollutant Load (lbs)	Pollutant: Pb									Net Pollutant Load from Watershed (lbs)
			Removal by MWS Control Measure Implementation during Fiscal Year (pounds)									
			LID Ordinance / SCMs [1]	Construction Sites Inspected [2]	Illicit Discharge Program [2]	Street Sweeping [2]	Home Buyout Program [1]	Trees Planted [1]	Stream Buffers [1]	Industrial Inspected [2]	Field Screenings [2]	
All Watersheds	FY21	1,749	83	0	<0.01	457	29	0	43	3.26	0	1,133
Back Creek	FY21	7.38	0	0	0	0	0	0	0	0	0	7.38
Browns Creek	FY21	76	1.44	0	<0.01	19	0	0	0.13	0.19	0	55
Bull Run Creek	FY21	8.72	0	0	0	0	0	0	0	0	0	8.72
Cooper Creek	FY21	22	0.35	0	<0.01	5.49	1.84	0	0.03	0	0	14
Cub Creek	FY21	7.44	0	0	0	0	0	0	0	0	0	7.44
Cumberland River	FY21	323	48	0	<0.01	105	7.83	0	5.82	0.14	0	157
Davidson Branch	FY21	17	0.17	0	<0.01	1.37	0	0	0	0	0	16
Dry Creek	FY21	30	0.31	0	<0.01	5.94	0	0	0.42	0.09	0	23
Ewing Creek	FY21	64	1.61	0	<0.01	16	0	0	2.81	0.19	0	44
Gibson Creek	FY21	33	0.26	0	<0.01	5.94	0.92	0	0.19	0	0	26
Gizzard Branch	FY21	15	0.27	0	0	1.37	0	0	0.13	0	0	14
Harpeth River	FY21	84	2.09	0	<0.01	30	0	0	1.73	0	0	50
Indian Creek	FY21	8.1	0	0	0	0	0	0	0	0	0	8.1
Island Creek	FY21	7.64	0	0	0	0	0	0	0	0	0	7.64
Little Harpeth River	FY21	18	0.18	0	<0.01	1.83	0	0	0.49	0	0	16
Loves Branch	FY21	15	0.1	0	0	1.83	0	0	0	0	0	13
Mansker Creek	FY21	18	0.17	0	0	0	0	0	0	0	0	18
Marrowbone Creek	FY21	13	0.04	0	<0.01	0	0	0	0	0	0	13
Mill Creek Lower	FY21	209	2.67	0	<0.01	58	1.94	0	2.21	0.14	0	144
Mill Creek Upper	FY21	69	1.12	0	<0.01	17	8.94	0	3.6	0	0	38
Overall Creek	FY21	19	0.18	0	<0.01	0.91	0	0	0.87	0	0	17
Pages Branch	FY21	31	0.58	0	<0.01	6.86	0	0	0.56	1.14	0	22
Percy Priest Lake, Lower	FY21	86	0.62	0	<0.01	37	0	0	0.88	0	0	48
Percy Priest Lake, Upper	FY21	48	1.46	0	<0.01	5.03	0	0	4.2	1.08	0	36
Pond Creek	FY21	7.68	0	0	0	0	0	0	0	0	0	7.68
Richland Creek	FY21	104	10	0	<0.01	32	0	0	2.02	0.2	0	60
Sandy Creek	FY21	12	0.05	0	<0.01	1.83	0	0	0	0	0	11
Sevenmile Creek	FY21	98	0.99	0	<0.01	34	0	0	1.06	0	0	61
South Harpeth River, Lower	FY21	13	0.02	0	0	1.37	0	0	0.49	0	0	11
Stoner Creek	FY21	70	3.81	0	<0.01	27	0	0	2.47	0.1	0	37
Stones River	FY21	73	0.65	0	<0.01	18	0	0	3.24	0	0	52
Sugartree Creek	FY21	31	0.57	0	<0.01	7.77	0	0	0.45	0	0	23
Sulpher Creek	FY21	9.92	0.06	0	<0.01	0	0	0	0	0	0	9.86
Sycamore Creek	FY21	21	0.04	0	0	0	0	0	0.23	0	0	20
Whites Creek	FY21	78	4.96	0	0	16	7.06	0	9.43	0	0	40

Based on average annual rainfall conditions: (1) – Accounts for all control measures implemented in watershed thru end of FY (2) – Based on control measures implemented during the fiscal year

Watershed	Year	Baseline Pollutant Load (lbs)	Pollutant: Ni									Net Pollutant Load from Watershed (lbs)
			Removal by MWS Control Measure Implementation during Fiscal Year (pounds)									
			LID Ordinance / SCMs [1]	Construction Sites Inspected [2]	Illicit Discharge Program [2]	Street Sweeping [2]	Home Buyout Program [1]	Trees Planted [1]	Stream Buffers [1]	Industrial Inspected [2]	Field Screenings [2]	
All Watersheds	FY21	1,772	154	0	<0.01	292	0	0	688	0	0	639
Back Creek	FY21	8.88	0	0	0	0	0	0	0	0	0	8.88
Browns Creek	FY21	92	1.75	0	<0.01	12	0	0	2.16	0	0	76
Bull Run Creek	FY21	9.99	0	0	0	0	0	0	0	0	0	9.99
Cooper Creek	FY21	18	0.28	0	<0.01	3.5	0	0	0.38	0	0	14
Cub Creek	FY21	9.01	0	0	0	0	0	0	0	0	0	9.01
Cumberland River	FY21	339	84	0	<0.01	67	0	0	72	0	0	117
Davidson Branch	FY21	17	0.25	0	<0.01	0.88	0	0	0	0	0	16
Dry Creek	FY21	33	0.45	0	<0.01	3.8	0	0	7.64	0	0	21
Ewing Creek	FY21	62	2.14	0	<0.01	10	0	0	55	0	0	0
Gibson Creek	FY21	30	0.53	0	<0.01	3.8	0	0	1.43	0	0	24
Gizzard Branch	FY21	18	0.52	0	0	0.88	0	0	1	0	0	15
Harpeth River	FY21	63	2.54	0	<0.01	19	0	0	37	0	0	4.68
Indian Creek	FY21	9.76	0	0	0	0	0	0	0	0	0	9.76
Island Creek	FY21	9.15	0	0	0	0	0	0	0	0	0	9.15
Little Harpeth River	FY21	22	0.36	0	<0.01	1.17	0	0	4.9	0	0	16
Loves Branch	FY21	16	0.13	0	0	1.17	0	0	0	0	0	15
Mansker Creek	FY21	21	0.31	0	0	0	0	0	0	0	0	21
Marrowbone Creek	FY21	16	0.08	0	<0.01	0	0	0	0	0	0	16
Mill Creek Lower	FY21	234	4.04	0	<0.01	37	0	0	145	0	0	48
Mill Creek Upper	FY21	58	1.89	0	<0.01	11	0	0	51	0	0	0
Overall Creek	FY21	19	0.32	0	<0.01	0.58	0	0	9.97	0	0	8.58
Pages Branch	FY21	33	0.72	0	<0.01	4.38	0	0	6.42	0	0	21
Percy Priest Lake, Lower	FY21	82	1.51	0	<0.01	24	0	0	11	0	0	46
Percy Priest Lake, Upper	FY21	69	1.6	0	<0.01	3.21	0	0	75	0	0	0
Pond Creek	FY21	9.17	0	0	0	0	0	0	0	0	0	9.17
Richland Creek	FY21	98	24	0	<0.01	20	0	0	24	0	0	29
Sandy Creek	FY21	13	0.08	0	<0.01	1.17	0	0	0	0	0	12
Sevenmile Creek	FY21	79	2.29	0	<0.01	22	0	0	8.54	0	0	47
South Harpeth River, Lower	FY21	15	0.03	0	0	0.88	0	0	6.35	0	0	8.03
Stoner Creek	FY21	54	11	0	<0.01	18	0	0	18	0	0	7.59
Stones River	FY21	78	1.05	0	<0.01	11	0	0	26	0	0	39
Sugartree Creek	FY21	28	1.17	0	<0.01	4.96	0	0	3.72	0	0	18
Sulpher Creek	FY21	12	0.09	0	<0.01	0	0	0	0	0	0	12
Sycamore Creek	FY21	22	0.09	0	0	0	0	0	1.75	0	0	20
Whites Creek	FY21	74	11	0	0	11	0	0	118	0	0	0

Based on average annual rainfall conditions: (1) – Accounts for all control measures implemented in watershed thru end of FY (2) – Based on control measures implemented during the fiscal year

Watershed	Year	Baseline Pollutant Load (lbs)	Pollutant: Zn									Net Pollutant Load from Watershed (lbs)
			Removal by MWS Control Measure Implementation during Fiscal Year (pounds)									
			LID Ordinance / SCMs [1]	Construction Sites Inspected [2]	Illicit Discharge Program [2]	Street Sweeping [2]	Home Buyout Program [1]	Trees Planted [1]	Stream Buffers [1]	Industrial Inspected [2]	Field Screenings [2]	
All Watersheds	FY21	37,210	1,960	0	<0.01	1,257	3,015	0	0	20	0	30,959
Back Creek	FY21	253	0	0	0	0	0	0	0	0	0	253
Browns Creek	FY21	1,486	44	0	<0.01	52	82	0	0	1.11	0	1,307
Bull Run Creek	FY21	278	0	0	0	0	0	0	0	0	0	278
Cooper Creek	FY21	480	11	0	<0.01	15	120	0	0	0	0	334
Cub Creek	FY21	255	0	0	0	0	0	0	0	0	0	255
Cumberland River	FY21	6,323	1,087	0	<0.01	288	596	0	0	0.85	0	4,351
Davidson Branch	FY21	479	4.3	0	<0.01	3.77	0	0	0	0	0	471
Dry Creek	FY21	682	10	0	<0.01	16	14	0	0	0.56	0	641
Ewing Creek	FY21	1,327	54	0	<0.01	44	63	0	0	1.13	0	1,166
Gibson Creek	FY21	848	6.52	0	<0.01	16	151	0	0	0	0	674
Gizzard Branch	FY21	471	6.48	0	0	3.77	0	0	0	0	0	461
Harpeth River	FY21	1,550	59	0	<0.01	82	36	0	0	0	0	1,374
Indian Creek	FY21	270	0	0	0	0	0	0	0	0	0	270
Island Creek	FY21	255	0	0	0	0	0	0	0	0	0	255
Little Harpeth River	FY21	492	4.27	0	<0.01	5.03	0	0	0	0	0	483
Loves Branch	FY21	367	2.59	0	0	5.03	5.82	0	0	0	0	354
Mansker Creek	FY21	463	5.42	0	0	0	0	0	0	0	0	457
Marrowbone Creek	FY21	348	0.97	0	<0.01	0	0	0	0	0	0	347
Mill Creek Lower	FY21	4,299	84	0	<0.01	160	320	0	0	0.85	0	3,735
Mill Creek Upper	FY21	1,499	32	0	<0.01	48	571	0	0	0	0	849
Overall Creek	FY21	537	4.31	0	<0.01	2.51	5.85	0	0	0	0	525
Pages Branch	FY21	767	20	0	<0.01	19	16	0	0	6.84	0	706
Percy Priest Lake, Lower	FY21	1,295	12	0	<0.01	102	5.88	0	0	0	0	1,176
Percy Priest Lake, Upper	FY21	1,074	50	0	<0.01	14	0	0	0	6.49	0	1,004
Pond Creek	FY21	261	0	0	0	0	0	0	0	0	0	261
Richland Creek	FY21	2,097	215	0	<0.01	88	84	0	0	1.19	0	1,709
Sandy Creek	FY21	347	1.79	0	<0.01	5.03	0	0	0	0	0	340
Sevenmile Creek	FY21	1,873	22	0	<0.01	94	148	0	0	0	0	1,609
South Harpeth River, Lower	FY21	341	0.38	0	0	3.77	0	0	0	0	0	337
Stoner Creek	FY21	1,324	85	0	<0.01	75	18	0	0	0.58	0	1,145
Stones River	FY21	1,671	20	0	<0.01	49	0	0	0	0	0	1,602
Sugartree Creek	FY21	776	13	0	<0.01	21	2.38	0	0	0	0	740
Sulpher Creek	FY21	305	1.93	0	<0.01	0	0	0	0	0	0	303
Sycamore Creek	FY21	520	0.83	0	0	0	0	0	0	0	0	520
Whites Creek	FY21	1,596	104	0	0	45	777	0	0	0	0	670

Based on average annual rainfall conditions: (1) – Accounts for all control measures implemented in watershed thru end of FY (2) – Based on control measures implemented during the fiscal year

Watershed	Year	Baseline Pollutant Load (lbs)	Pollutant: Cr									Net Pollutant Load from Watershed (lbs)
			Removal by MWS Control Measure Implementation during Fiscal Year (pounds)									
			LID Ordinance / SCMs [1]	Construction Sites Inspected [2]	Illicit Discharge Program [2]	Street Sweeping [2]	Home Buyout Program [1]	Trees Planted [1]	Stream Buffers [1]	Industrial Inspected [2]	Field Screenings [2]	
All Watersheds	FY21	1,735	64	0	<0.01	325	0	0	392	0	0	955
Back Creek	FY21	6.66	0	0	0	0	0	0	0	0	0	6.66
Browns Creek	FY21	73	1.2	0	<0.01	13	0	0	0.54	0	0	57
Bull Run Creek	FY21	8.56	0	0	0	0	0	0	0	0	0	8.56
Cooper Creek	FY21	22	0.39	0	<0.01	3.9	0	0	0.08	0	0	18
Cub Creek	FY21	6.73	0	0	0	0	0	0	0	0	0	6.73
Cumberland River	FY21	305	40	0	<0.01	74	0	0	59	0	0	131
Davidson Branch	FY21	18	0.14	0	<0.01	0.97	0	0	0	0	0	17
Dry Creek	FY21	29	0.21	0	<0.01	4.22	0	0	6.23	0	0	18
Ewing Creek	FY21	65	1.09	0	<0.01	11	0	0	35	0	0	18
Gibson Creek	FY21	33	0.15	0	<0.01	4.22	0	0	2.05	0	0	26
Gizzard Branch	FY21	13	0.17	0	0	0.97	0	0	1.44	0	0	11
Harpeth River	FY21	87	2.06	0	<0.01	21	0	0	9.97	0	0	54
Indian Creek	FY21	7.74	0	0	0	0	0	0	0	0	0	7.74
Island Creek	FY21	6.99	0	0	0	0	0	0	0	0	0	6.99
Little Harpeth River	FY21	19	0.11	0	<0.01	1.3	0	0	3.56	0	0	14
Loves Branch	FY21	16	0.09	0	0	1.3	0	0	0	0	0	15
Mansker Creek	FY21	22	0.11	0	0	0	0	0	0	0	0	22
Marrowbone Creek	FY21	17	0.02	0	<0.01	0	0	0	0	0	0	17
Mill Creek Lower	FY21	193	1.66	0	<0.01	41	0	0	38	0	0	112
Mill Creek Upper	FY21	73	0.76	0	<0.01	12	0	0	25	0	0	35
Overall Creek	FY21	19	0.15	0	<0.01	0.65	0	0	4.57	0	0	14
Pages Branch	FY21	29	0.32	0	<0.01	4.87	0	0	5.67	0	0	18
Percy Priest Lake, Lower	FY21	93	0.83	0	<0.01	26	0	0	2.41	0	0	63
Percy Priest Lake, Upper	FY21	53	1	0	<0.01	3.57	0	0	46	0	0	2.33
Pond Creek	FY21	7.12	0	0	0	0	0	0	0	0	0	7.12
Richland Creek	FY21	101	6.32	0	<0.01	23	0	0	20	0	0	51
Sandy Creek	FY21	12	0.03	0	<0.01	1.3	0	0	0	0	0	10
Sevenmile Creek	FY21	98	0.86	0	<0.01	24	0	0	10	0	0	62
South Harpeth River, Lower	FY21	14	0.01	0	0	0.97	0	0	1.34	0	0	12
Stoner Creek	FY21	68	2.28	0	<0.01	19	0	0	26	0	0	20
Stones River	FY21	68	0.43	0	<0.01	13	0	0	35	0	0	20
Sugartree Creek	FY21	29	0.39	0	<0.01	5.52	0	0	4.61	0	0	19
Sulpher Creek	FY21	10	0.04	0	<0.01	0	0	0	0	0	0	10
Sycamore Creek	FY21	27	0.03	0	0	0	0	0	2.51	0	0	24
Whites Creek	FY21	86	2.94	0	0	12	0	0	52	0	0	19

Based on average annual rainfall conditions: (1) – Accounts for all control measures implemented in watershed thru end of FY (2) – Based on control measures implemented during the fiscal year

Watershed	Year	Baseline Pollutant Load (lbs)	Pollutant: Cu									Net Pollutant Load from Watershed (lbs)
			Removal by MWS Control Measure Implementation during Fiscal Year (pounds)									
			LID Ordinance / SCMs [1]	Construction Sites Inspected [2]	Illicit Discharge Program [2]	Street Sweeping [2]	Home Buyout Program [1]	Trees Planted [1]	Stream Buffers [1]	Industrial Inspected [2]	Field Screenings [2]	
All Watersheds	FY21	5,282	188	0	<0.01	337	221	0	268	3.26	0	4,265
Back Creek	FY21	28	0	0	0	0	0	0	0	0	0	28
Browns Creek	FY21	216	4.76	0	<0.01	14	1.67	0	0	0.19	0	196
Bull Run Creek	FY21	33	0	0	0	0	0	0	0	0	0	33
Cooper Creek	FY21	69	1.12	0	<0.01	4.04	13	0	0	0	0	51
Cub Creek	FY21	29	0	0	0	0	0	0	0	0	0	29
Cumberland River	FY21	911	111	0	<0.01	77	56	0	47	0.14	0	620
Davidson Branch	FY21	64	0.5	0	<0.01	1.01	0	0	0	0	0	63
Dry Creek	FY21	93	1.05	0	<0.01	4.38	0.29	0	4.34	0.09	0	83
Ewing Creek	FY21	196	6	0	<0.01	12	1.27	0	20	0.19	0	156
Gibson Creek	FY21	116	0.46	0	<0.01	4.38	8.23	0	1.99	0	0	101
Gizzard Branch	FY21	60	0.57	0	0	1.01	0	0	1.38	0	0	57
Harpeth River	FY21	236	5.58	0	<0.01	22	0.73	0	4.06	0	0	204
Indian Creek	FY21	31	0	0	0	0	0	0	0	0	0	31
Island Creek	FY21	29	0	0	0	0	0	0	0	0	0	29
Little Harpeth River	FY21	65	0.32	0	<0.01	1.35	0	0	2.84	0	0	61
Loves Branch	FY21	53	0.35	0	0	1.35	0.12	0	0	0	0	51
Mansker Creek	FY21	67	0.5	0	0	0	0	0	0	0	0	67
Marrowbone Creek	FY21	49	0.07	0	<0.01	0	0	0	0	0	0	49
Mill Creek Lower	FY21	592	7.98	0	<0.01	43	17	0	16	0.14	0	509
Mill Creek Upper	FY21	217	2.72	0	<0.01	13	62	0	15	0	0	125
Overall Creek	FY21	69	0.44	0	<0.01	0.67	0.12	0	2.76	0	0	65
Pages Branch	FY21	101	1.73	0	<0.01	5.05	0.32	0	4.58	1.14	0	88
Percy Priest Lake, Lower	FY21	211	1.6	0	<0.01	27	0.1	0	0	0	0	182
Percy Priest Lake, Upper	FY21	149	5.45	0	<0.01	3.7	0	0	27	1.08	0	112
Pond Creek	FY21	30	0	0	0	0	0	0	0	0	0	30
Richland Creek	FY21	307	16	0	<0.01	24	1.69	0	18	0.2	0	248
Sandy Creek	FY21	42	0.18	0	<0.01	1.35	0	0	0	0	0	41
Sevenmile Creek	FY21	278	2.08	0	<0.01	25	3.03	0	9.63	0	0	238
South Harpeth River, Lower	FY21	45	0.03	0	0	1.01	0	0	0	0	0	44
Stoner Creek	FY21	195	6.22	0	<0.01	20	0.36	0	25	0.1	0	143
Stones River	FY21	235	1.96	0	<0.01	13	0	0	33	0	0	187
Sugartree Creek	FY21	104	1.07	0	<0.01	5.72	0.05	0	4.29	0	0	93
Sulpher Creek	FY21	38	0.2	0	<0.01	0	0	0	0	0	0	37
Sycamore Creek	FY21	78	0.06	0	0	0	0	0	2.41	0	0	75
Whites Creek	FY21	246	7.9	0	0	12	55	0	29	0	0	142

Based on average annual rainfall conditions: (1) – Accounts for all control measures implemented in watershed thru end of FY (2) – Based on control measures implemented during the fiscal year

Watershed	Year	Baseline Pollutant Load (lbs)	Pollutant: O&G									Net Pollutant Load from Watershed (lbs)
			Removal by MWS Control Measure Implementation during Fiscal Year (pounds)									
			LID Ordinance / SCMs [1]	Construction Sites Inspected [2]	Illicit Discharge Program [2]	Street Sweeping [2]	Home Buyout Program [1]	Trees Planted [1]	Stream Buffers [1]	Industrial Inspected [2]	Field Screenings [2]	
All Watersheds	FY21	1,119,812	61,165	0	8.11	7,448	0	0	550	160	14	1,050,467
Back Creek	FY21	504	0	0	0	0	0	0	0	0	0	504
Browns Creek	FY21	57,032	939	0	0.41	305	0	0	1.18	9.07	1.08	55,776
Bull Run Creek	FY21	2,152	0	0	0	0	0	0	0	0	0	2,152
Cooper Creek	FY21	12,226	193	0	<0.01	89	0	0	0.22	0	0	11,944
Cub Creek	FY21	580	0	0	0	0	0	0	0	0	0	580
Cumberland River	FY21	214,169	36,520	0	2.19	1,706	0	0	75	6.92	0	175,859
Davidson Branch	FY21	9,603	132	0	<0.01	22	0	0	0	0	0	9,448
Dry Creek	FY21	19,555	214	0	0.01	97	0	0	7.23	4.55	0	19,233
Ewing Creek	FY21	44,932	1,162	0	<0.01	261	0	0	44	9.19	0	43,457
Gibson Creek	FY21	21,125	139	0	0.09	97	0	0	2.35	0	0	20,887
Gizzard Branch	FY21	9,258	176	0	0	22	0	0	1.64	0	0	9,058
Harpeth River	FY21	46,984	1,137	0	0.05	484	0	0	20	0	0	45,344
Indian Creek	FY21	1,359	0	0	0	0	0	0	0	0	0	1,359
Island Creek	FY21	942	0	0	0	0	0	0	0	0	0	942
Little Harpeth River	FY21	11,135	110	0	<0.01	30	0	0	5	0	0	10,990
Loves Branch	FY21	10,876	91	0	0	30	0	0	0	0	0	10,756
Mansker Creek	FY21	16,329	119	0	0	0	0	0	0	0	0	16,210
Marrowbone Creek	FY21	11,297	19	0	0.01	0	0	0	0	0	0	11,278
Mill Creek Lower	FY21	139,266	1,683	0	1	946	0	0	65	6.92	5.15	136,560
Mill Creek Upper	FY21	45,440	683	0	0.05	283	0	0	39	0	2.38	44,433
Overall Creek	FY21	10,363	131	0	1.46	15	0	0	7.83	0	0	10,208
Pages Branch	FY21	16,615	287	0	0.37	112	0	0	7.06	56	0	16,153
Percy Priest Lake, Lower	FY21	54,574	884	0	0.02	603	0	0	6.48	0	0	53,081
Percy Priest Lake, Upper	FY21	43,320	933	0	0.12	82	0	0	61	53	3.29	42,188
Pond Creek	FY21	812	0	0	0	0	0	0	0	0	0	812
Richland Creek	FY21	65,505	7,272	0	0.05	521	0	0	26	9.75	0	57,677
Sandy Creek	FY21	3,491	37	0	<0.01	30	0	0	0	0	0	3,425
Sevenmile Creek	FY21	56,959	934	0	0.42	559	0	0	12	0	1.38	55,452
South Harpeth River, Lower	FY21	6,319	11	0	0	22	0	0	3.62	0	0	6,282
Stoner Creek	FY21	36,424	3,062	0	0.37	447	0	0	30	4.77	0	32,880
Stones River	FY21	50,890	451	0	0.01	290	0	0	40	0	0.43	50,108
Sugartree Creek	FY21	15,320	401	0	1.46	127	0	0	5.47	0	0	14,786
Sulpher Creek	FY21	3,624	39	0	<0.01	0	0	0	0	0	0	3,585
Sycamore Creek	FY21	19,246	31	0	0	0	0	0	2.87	0	0	19,212
Whites Creek	FY21	61,581	3,379	0	0	268	0	0	88	0	0	57,846

Based on average annual rainfall conditions: (1) – Accounts for all control measures implemented in watershed thru end of FY (2) – Based on control measures implemented during the fiscal year

Watershed	Year	Baseline Pollutant Load (lbs)	Pollutant: TSS									Net Pollutant Load from Watershed (lbs)
			Removal by MWS Control Measure Implementation during Fiscal Year (pounds)									
			LID Ordinance / SCMs [1]	Construction Sites Inspected [2]	Illicit Discharge Program [2]	Street Sweeping [2]	Home Buyout Program [1]	Trees Planted [1]	Stream Buffers [1]	Industrial Inspected [2]	Field Screenings [2]	
All Watersheds	FY21	15,413,533	662,581	10,830,215	46,006	1,895,435	89	0	3,402	19,980	1,713	1,954,113
Back Creek	FY21	6,681	0	0	0	0	0	0	0	0	0	6,681
Browns Creek	FY21	689,370	14,805	596,316	5,934	77,713	0	0	3.86	1,133	134	0
Bull Run Creek	FY21	26,413	0	0	0	0	0	0	0	0	0	26,413
Cooper Creek	FY21	184,016	3,900	82,939	0.01	22,745	5.76	0	0.88	0	0	74,425
Cub Creek	FY21	7,410	0	0	0	0	0	0	0	0	0	7,410
Cumberland River	FY21	2,930,119	409,514	2,322,503	7,423	434,055	24	0	536	864	0	0
Davidson Branch	FY21	124,019	1,614	37,143	0.01	5,686	0	0	0	0	0	79,576
Dry Creek	FY21	256,180	2,701	79,912	0.02	24,641	0	0	45	568	0	148,313
Ewing Creek	FY21	611,690	14,751	279,261	1,483	66,340	0	0	237	1,148	0	248,468
Gibson Creek	FY21	304,679	1,815	68,070	1,484	24,641	2.87	0	21	0	0	208,647
Gizzard Branch	FY21	116,659	1,982	28,865	0	5,686	0	0	14	0	0	80,111
Harpeth River	FY21	755,573	20,071	159,166	2,967	123,203	0	0	91	0	0	450,076
Indian Creek	FY21	17,298	0	0	0	0	0	0	0	0	0	17,298
Island Creek	FY21	10,636	0	0	0	0	0	0	0	0	0	10,636
Little Harpeth River	FY21	133,132	1,486	551,926	0.01	7,582	0	0	36	0	0	0
Loves Branch	FY21	135,809	1,009	1,900	0	7,582	0	0	0	0	0	125,318
Mansker Creek	FY21	192,291	1,432	17,801	0	0	0	0	0	0	0	173,058
Marrowbone Creek	FY21	135,315	223	0	742	0	0	0	0	0	0	134,351
Mill Creek Lower	FY21	1,855,066	23,974	813,616	4,453	240,720	6.06	0	251	864	643	770,538
Mill Creek Upper	FY21	680,657	9,552	275,836	1,483	72,027	28	0	224	0	298	321,209
Overall Creek	FY21	138,565	1,567	126,553	746	3,791	0	0	47	0	0	5,861
Pages Branch	FY21	230,732	6,085	41,941	2,968	28,432	0	0	51	6,974	0	144,282
Percy Priest Lake, Lower	FY21	801,287	8,321	66,465	0.06	153,530	0	0	26	0	0	572,945
Percy Priest Lake, Upper	FY21	494,402	13,458	3,228,719	3,709	20,850	0	0	332	6,615	411	0
Pond Creek	FY21	11,047	0	31,591	742	0	0	0	0	0	0	0
Richland Creek	FY21	925,922	56,634	753,061	2,225	132,680	0	0	198	1,218	0	0
Sandy Creek	FY21	54,481	487	60,559	0.01	7,582	0	0	0	0	0	0
Sevenmile Creek	FY21	893,439	9,197	406,082	2,226	142,158	0	0	103	0	173	333,500
South Harpeth River, Lower	FY21	78,160	108	4,769	2,225	5,686	0	0	15	0	0	65,356
Stoner Creek	FY21	606,348	21,016	214,852	1.02	113,726	0	0	260	595	0	255,897
Stones River	FY21	666,244	5,609	130,645	742	73,922	0	0	342	0	54	454,931
Sugartree Creek	FY21	235,461	4,161	156,365	1,487	32,222	0	0	46	0	0	41,179
Sulpher Creek	FY21	42,711	490	0	0.01	0	0	0	0	0	0	42,221
Sycamore Creek	FY21	240,529	302	190,088	0	0	0	0	25	0	0	50,114
Whites Creek	FY21	821,191	26,316	103,271	2,967	68,236	22	0	497	0	0	619,883

Based on average annual rainfall conditions: (1) – Accounts for all control measures implemented in watershed thru end of FY (2) – Based on control measures implemented during the fiscal year

Watershed	Year	Baseline Pollutant Load (lbs)	Pollutant: TDS — Removal by MWS Control Measure Implementation during Fiscal Year (pounds)									Net Pollutant Load from Watershed (lbs)
			LID Ordinance / SCMs [1]	Construction Sites Inspected [2]	Illicit Discharge Program [2]	Street Sweeping [2]	Home Buyout Program [1]	Trees Planted [1]	Stream Buffers [1]	Industrial Inspected [2]	Field Screenings [2]	
All Watersheds	FY21	58,235,262	2,478,379	0	0	0	0	0	36,036	0	0	55,720,847
Back Creek	FY21	29,440	0	0	0	0	0	0	0	0	0	29,440
Browns Creek	FY21	2,578,468	49,254	0	0	0	0	0	69	0	0	2,529,144
Bull Run Creek	FY21	108,799	0	0	0	0	0	0	0	0	0	108,799
Cooper Creek	FY21	645,916	19,578	0	0	0	0	0	7.1	0	0	626,332
Cub Creek	FY21	33,568	0	0	0	0	0	0	0	0	0	33,568
Cumberland River	FY21	10,657,266	1,551,461	0	0	0	0	0	4,844	0	0	9,100,961
Davidson Branch	FY21	437,537	4,455	0	0	0	0	0	0	0	0	433,083
Dry Creek	FY21	1,016,606	6,748	0	0	0	0	0	655	0	0	1,009,204
Ewing Creek	FY21	2,259,557	30,763	0	0	0	0	0	3,893	0	0	2,224,901
Gibson Creek	FY21	1,122,809	6,703	0	0	0	0	0	136	0	0	1,115,971
Gizzard Branch	FY21	398,930	7,124	0	0	0	0	0	95	0	0	391,711
Harpeth River	FY21	2,679,383	99,165	0	0	0	0	0	1,079	0	0	2,579,139
Indian Creek	FY21	87,863	0	0	0	0	0	0	0	0	0	87,863
Island Creek	FY21	36,963	0	0	0	0	0	0	0	0	0	36,963
Little Harpeth River	FY21	568,627	5,368	0	0	0	0	0	249	0	0	563,010
Loves Branch	FY21	542,511	2,231	0	0	0	0	0	0	0	0	540,281
Mansker Creek	FY21	870,717	4,605	0	0	0	0	0	0	0	0	866,112
Marrowbone Creek	FY21	698,637	647	0	0	0	0	0	0	0	0	697,990
Mill Creek Lower	FY21	7,026,841	55,669	0	0	0	0	0	5,436	0	0	6,965,736
Mill Creek Upper	FY21	2,687,782	31,444	0	0	0	0	0	2,213	0	0	2,654,125
Overall Creek	FY21	582,611	4,750	0	0	0	0	0	339	0	0	577,521
Pages Branch	FY21	826,311	8,861	0	0	0	0	0	462	0	0	816,988
Percy Priest Lake, Lower	FY21	3,234,871	48,528	0	0	0	0	0	212	0	0	3,186,131
Percy Priest Lake, Upper	FY21	2,449,509	17,097	0	0	0	0	0	4,990	0	0	2,427,423
Pond Creek	FY21	54,598	0	0	0	0	0	0	0	0	0	54,598
Richland Creek	FY21	3,168,811	196,554	0	0	0	0	0	1,506	0	0	2,970,751
Sandy Creek	FY21	197,201	1,403	0	0	0	0	0	0	0	0	195,799
Sevenmile Creek	FY21	3,181,362	46,384	0	0	0	0	0	687	0	0	3,134,291
South Harpeth River, Lower	FY21	358,824	788	0	0	0	0	0	118	0	0	357,917
Stoner Creek	FY21	2,025,249	168,286	0	0	0	0	0	1,724	0	0	1,855,239
Stones River	FY21	2,287,846	15,193	0	0	0	0	0	2,409	0	0	2,270,244
Sugartree Creek	FY21	771,453	16,405	0	0	0	0	0	308	0	0	754,740
Sulpher Creek	FY21	185,090	921	0	0	0	0	0	0	0	0	184,170
Sycamore Creek	FY21	1,154,903	911	0	0	0	0	0	166	0	0	1,153,826
Whites Creek	FY21	3,268,401	77,085	0	0	0	0	0	4,439	0	0	3,186,877

Based on average annual rainfall conditions: (1) – Accounts for all control measures implemented in watershed thru end of FY (2) – Based on control measures implemented during the fiscal year

Watershed	Year	Baseline Pollutant Load (MPN	Pollutant: E. coli. Removal by MWS Control Measure Implementation during Fiscal Year (MPN)									Net Pollutant Load from Watershed (MPN
			LID Ordinance / SCMs [1]	Construction Sites Inspected [2]	Illicit Discharge Program [2]	Street Sweeping [2]	Home Buyout Program [1]	Trees Planted [1]	Stream Buffers [1]	Industrial Inspected [2]	Field Screenings [2]	
All Watersheds	FY21	10,333,937	365,214	0	4,211	115,412	<0.01	0	<0.01	0	0	9,849,100
Back Creek	FY21	6,485	0	0	0	0	0	0	0	0	0	6,485
Browns Creek	FY21	229,747	14,259	0	214	4,732	<0.01	0	<0.01	0	0	210,542
Bull Run Creek	FY21	17,105	0	0	0	0	0	0	0	0	0	17,105
Cooper Creek	FY21	139,459	8,936	0	1.89	1,385	<0.01	0	0	0	0	129,136
Cub Creek	FY21	6,929	0	0	0	0	0	0	0	0	0	6,929
Cumberland River	FY21	1,664,584	204,682	0	1,138	26,429	<0.01	0	<0.01	0	0	1,432,335
Davidson Branch	FY21	62,604	1,113	0	1.89	346	0	0	0	0	0	61,142
Dry Creek	FY21	173,186	1,108	0	3.79	1,500	<0.01	0	<0.01	0	0	170,573
Ewing Creek	FY21	383,044	2,747	0	1.89	4,039	<0.01	0	<0.01	0	0	376,255
Gibson Creek	FY21	249,577	1,373	0	45	1,500	<0.01	0	<0.01	0	0	246,657
Gizzard Branch	FY21	52,069	591	0	0	346	0	0	<0.01	0	0	51,132
Harpeth River	FY21	641,605	43,782	0	28	7,502	<0.01	0	<0.01	0	0	590,293
Indian Creek	FY21	20,068	0	0	0	0	0	0	0	0	0	20,068
Island Creek	FY21	1,283	0	0	0	0	0	0	0	0	0	1,283
Little Harpeth River	FY21	78,249	833	0	1.89	462	0	0	<0.01	0	0	76,953
Loves Branch	FY21	79,933	207	0	0	462	<0.01	0	0	0	0	79,264
Mansker Creek	FY21	140,672	318	0	0	0	0	0	0	0	0	140,354
Marrowbone Creek	FY21	139,981	57	0	3.79	0	0	0	0	0	0	139,921
Mill Creek Lower	FY21	1,120,464	6,829	0	520	14,657	<0.01	0	<0.01	0	0	1,098,457
Mill Creek Upper	FY21	655,908	7,734	0	26	4,386	<0.01	0	<0.01	0	0	643,763
Overall Creek	FY21	127,581	1,507	0	759	231	<0.01	0	<0.01	0	0	125,084
Pages Branch	FY21	144,354	684	0	191	1,731	<0.01	0	<0.01	0	0	141,748
Percy Priest Lake, Lower	FY21	639,364	6,803	0	11	9,348	<0.01	0	0	0	0	623,202
Percy Priest Lake, Upper	FY21	384,036	6,045	0	61	1,270	0	0	<0.01	0	0	376,661
Pond Creek	FY21	14,049	0	0	0	0	0	0	0	0	0	14,049
Richland Creek	FY21	514,014	25,882	0	26	8,079	<0.01	0	<0.01	0	0	480,027
Sandy Creek	FY21	46,943	266	0	1.89	462	0	0	0	0	0	46,214
Sevenmile Creek	FY21	734,537	6,038	0	216	8,656	<0.01	0	<0.01	0	0	719,627
South Harpeth River, Lower	FY21	59,365	190	0	0	346	0	0	0	0	0	58,829
Stoner Creek	FY21	493,028	8,098	0	191	6,925	<0.01	0	<0.01	0	0	477,815
Stones River	FY21	289,479	1,621	0	5.68	4,501	0	0	<0.01	0	0	283,352
Sugartree Creek	FY21	165,881	2,729	0	759	1,962	<0.01	0	<0.01	0	0	160,431
Sulpher Creek	FY21	27,039	74	0	1.89	0	0	0	0	0	0	26,963
Sycamore Creek	FY21	240,938	261	0	0	0	0	0	<0.01	0	0	240,677
Whites Creek	FY21	590,377	10,449	0	0	4,155	<0.01	0	<0.01	0	0	575,774

Based on average annual rainfall conditions: (1) – Accounts for all control measures implemented in watershed thru end of FY (2) – Based on control measures implemented during the fiscal year