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

December 2020
Reporting Period:
July 1, 2019 - June 30, 2020

METRO WATER SERVICES

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 14, 2020

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

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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 2020 (FY20), which represents the period between July 1, 2019 through June 30, 2020.

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 Section (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 is responsible for coordinating with various other Metro Departments to ensure 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 FY20. 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.

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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
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
Aujuah Jackson	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
Stephanie Petty	Metro Water Services	Watershed Group Inspector, Stormwater NPDES Section
Carol Edwards	Metro Water Services	Soil Conservationist, Stormwater NPDES Section
Sharon Smith	Department of Public Works	Solid Waste Division
Phillip Jones	Department of Public Works	Assistant Director of the Street Services Division
Ernie Kurgan	Department of Public Works	Street Services Division
Will Robinson	Department of Public Works	Street Services Division
Wade Hill/Jon Michael	Codes Department	Chief Plans Reviewer
Anita McCaig	Metro Planning Department	Planner
Christopher Michie	Metro Health Department	Septic System Oversight
Steve Crosier	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
FY20	Fiscal Year 2020
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
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 impaired streams. It is Metro's long-term goal to reduce pollutant loadings from the MS4 so as 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 FY20.

1.2.1 MWS Clean Water Nashville Overflow Abatement Program

In the spring of 2020, a contractor for the Clean Water Nashville Overflow Abatement Program found a sanitary sewer main leak/seepage at a crossing of Mill Creek near Franklin Limestone Road. The contractor was able to isolate the leak by performing dye tracing of the sewer main. It was determined that a drilling operation for a communications line likely caused the damage to the infrastructure in 2018. Once discovered, MWS System Services Division (SSD) immediately set up sewage bypass pumps until the compromised sewer main could be repaired. The sanitary sewer main was later lined, permanently repairing the leak. This discovery and repair removed a significant loading of sanitary sewage from Mill Creek.

Photographs of the Dye Trace Sanitary Sewer Seep

1.2.2 Field Screening Discovery and MWS Coordination on Major Sanitary Sewer Overflow

While performing proactive dry weather field screening of a commercial property, an NPDES inspector observed foul-smelling, discolored flow in an unnamed tributary to McCrory Creek. NPDES tracked the substance upstream where an overflowing sanitary sewer manhole was found. NPDES immediately notified SSD, who acted quickly to re-route flow from a nearby pump station and clean up any large areas of sewage sludge.

Photograph of the Pooled Sewage from the Overflow

1.2.3 Construction Violation

During a normal, routine grading permit inspection, an NPDES inspector observed a muddy discharge from the construction site to the MS4. Upon further investigation, it was determined that the site's Erosion Prevention and Sediment Control (EPSC) practices were not being properly followed. Unfiltered pit pump water was routing off-site to the MS4. The NPDES inspector directed site personnel to immediately implement all EPSC controls and issued an NOV to the site with an assessed administrative penalty of $400. As a result of the enforcement, the site immediately repaired the EPSC measures and remediated lost sediment from the site.

Grading Permit Violation Pictures and Resulting Enforcement

1.2.4 Illegal Dumping in Storm Drain

NPDES received a citizen complaint about an unknown white substance that was dumped into a storm drain. Upon investigating, NPDES staff found a large amount of unknown material in the storm drain. NPDES coordinated with the Nashville Fire Department, with their hazardous materials unit responding and performing a field test on the substance. The Nashville Fire Department determined the material to be a form of pesticide and proceeded to remove and properly dispose of the material.

Pesticide Material Dumped in the Storm Drain Removed by the Nashville Fire Department

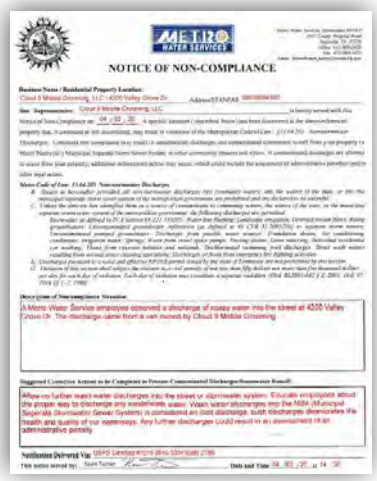
1.2.5 Ready Mix Concrete Wash-Out into MS4

In the Spring of 2020, NPDES received a citizen complaint of concrete being dumped into the street. Upon investigating, NPDES personnel observed concrete staining and residue of concrete wash-out into the MS4. NPDES obtained the information of the ready mix company responsible for the discharge and notified them of the issue. Since the ready mix facility holds a permit with TDEC that requires them to control concrete washout and prevent discharges to the MS4 or Waters of the State, NPDES also made TDEC aware of the situation. Subsequently, TDEC issued a Notice of Violation to the ready mix facility, specifically requiring them to re-train all drivers on proper wash-out practices.

Improper Concrete Wash-Out to the MS4

1.2.6 Improper Discharge of Pet Grooming Wash Water

While performing proactive dry weather field screening inspections, NPDES staff observed a discharge from a commercial pet grooming van. The soapy discharge was draining to the street and would ultimately reach the MS4. Upon investigating the washing operation, NPDES found that the company was regularly discharging the wash water to the street, as they had no containment system in place. NPDES issued a Notice of Noncompliance (NON) to the mobile grooming company requiring them to implement a capture and containment system that would allow their wash water to be disposed of properly.


NOTICE OF NON-COMPLIANCE

Discharge of Pet Grooming Wash Water to the MS4

1.2.8 Illicit Discharge of Commercial Stone Cutting Slurry Wastewater

While performing proactive dry weather field screening inspections, NPDES staff observed a murky discharge routing to the MS4. This discharge was tracked back to a commercial stone cutting facility that was found to be routing wet-cutting slurry wastewater to the open ground outside their facility. Due to the large volume of material discharged, the untreated, process water discharge represented a significant source of sediment to the MS4. NPDES issued an NOV with a $100 administrative penalty. As a result, the facility coordinated with the MWS Pretreatment Section to install a collections system that filters out the sediment and routes the remaining wastewater to the sanitary sewer.

Discharge of Stone-Cutting Slurry

1.2.9 Cross Connection of Sanitary Sewer to the MS4

While performing field work on the sanitary sewer main, the MWS System Services Division (SSD) crews found a suspicious corrugated plastic pipe routing from a private clean-out cap to a street storm drain. NPDES was notified and immediately investigated, finding the pipe was, indeed, routing sanitary sewer discharges to the MS4. A NOV with a $100 administrative penalty was issued to the property owner requiring immediate removal of the cross connection. The property owner complied quickly in eliminating the sanitary sewer discharge to the MS4.

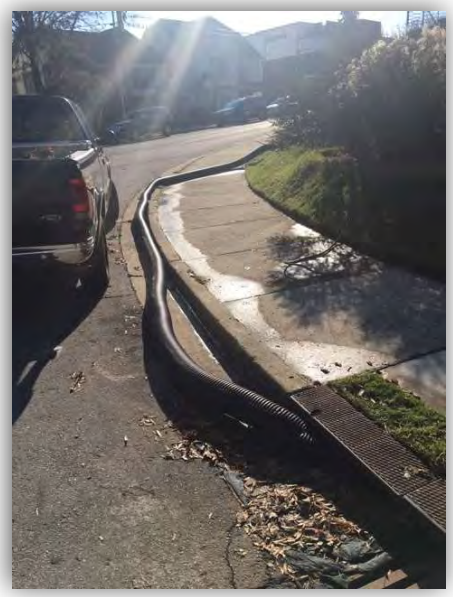
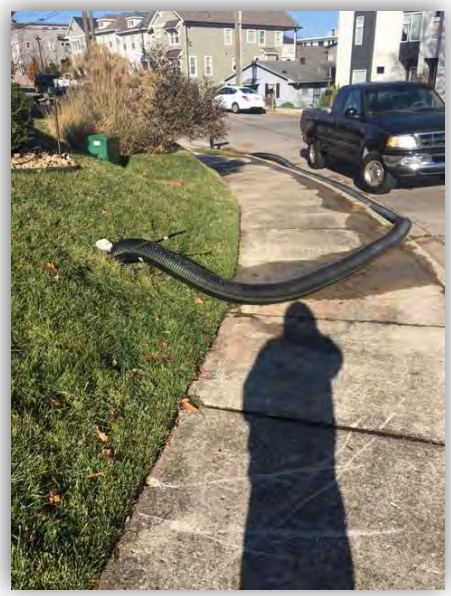



Photo of the Sanitary Wastewater Cross-Connection to the Storm Drain

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 FY20, 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 July 2020, just after the permit year ended, 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.

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 FY20, 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 FY20, 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 FY20:

- Metro Department MS4 Permit Compliance Workshop
  At the end of 2019, NPDES scheduled a large meeting with all the major Metro departments to go over the MS4 Permit Compliance requirements that was supposed to occur in March. As everyone knows, this month turned out to be an extremely hard month for the city of Nashville. As Nashville was dealing with the recovery efforts from the devastating tornado, the long-lasting impacts from the COVID-19 pandemic began to take hold. Despite these hardships, NPDES was able to reschedule the date and format of the meeting to host a virtual workshop on May 15, 2020. The workshop was a success as 39 individual attendees from all the major Metro departments tuned in to hear about how their department's actions affects Metro's MS4 Permit Compliance. The workshop presentation is posted at the following link:
  https://www.youtube.com/watch?v=PlejP8mjjG4&feature=youtu.be

Screenshots from the Virtual MS4 Workshop

- Urban Runoff 5K
  During FY20, MWS continued to partner with TDEC and the Tennessee Stormwater Association (TNSA) to host the 7th annual Urban Runoff 5K and Water Quality Festival. The event was a family-oriented run/walk through the nature trails of Shelby Park. The race route took runners past the Shelby Bottoms Nature Center green roof and bioretention basins. Public education signage was present throughout the route to explain the benefits of trees and other "green" features on reducing impacts to stormwater runoff. In addition to the actual race, several local organizations and government agencies hosted exhibitor booths as part of the Water Quality Festival that occurred during and after the race. This race had the highest ever turnout at an estimated 450 attendees to the race and water quality festival.

Photos form the Urban Runoff 5K Hosted in FY20

- Social Media Post
  In FY20, MWS continued to expand stormwater messaging on its social media platform. MWS routinely updates Facebook and Twitter messages, which has proven to be an effective method in reaching the new generation, 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. In FY20, MWS posted a total of 417 separate educational messages to social media that reached a total audience size of over 16,700 individual views, many of which included stormwater messages. Below are some typical FY 20 social media posts relating to stormwater.

Example Social Media Posts with Stormwater Messages in FY20

- 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 FY20, the CRC signed up or renewed contracts with 13 new and renewing adopters bringing the total number of stream segments adopted to 44. There were 26 stream cleanups conducted during FY20 that involved the collection of more than 240 bags of trash.

Photos of Adopt A 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 21 years. Since MWS began participating in the home buyout program, Metro has purchased over 435 floodplain properties (over 200 acres) in which structures and other impervious surfaces such as driveways have been removed. In FY20, MWS initiated the purchase of 16 homes within the floodplains. 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.

Photos of some recent tree plantings on Floodplain Buyout Properties

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. Projects implemented with WIF funds will include structural and non-structural controls to include some retrofits of previously developed properties.

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 FY20. In FY21, NPDES will begin to analyze the success of the bioretention basin project in reducing the volume of stormwater runoff and pollutants from draining into Sorghum Branch.

In addition to the Pitts Park bioretention project, Metro completed engineering design and 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 will be completely constructed in FY21. At the time this report was being prepared, the Whites Creek Bank stabilization project was completed. Next year's FY21 Annual Report will include an extensive writeup on both bank stabilization projects as they will both serve to greatly reduce the amount of sediment loss to each creek. These projects qualified for reimbursement funds from the National Resources Conservation Services (NRCS) Emergency Watershed Program (EWP) since they are also preventing future impacts to sanitary sewer infrastructure that parallel the creek. The pictures below represent some of the work in progress at the time this report was being compiled.

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

Stormwater Control Measure Oversight Program

At the time this report was compiled, Nashville had inventoried 5,863 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 over the last few years. NPDES's current work plan has 4 personnel dedicated to inspecting and following up 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.

NPDES logs all the SCM inspection and reporting documentation into the Metro-wide Cityworks database. During FY20, NPDES performed inspections and/or re-inspections of 1,015 properties for SCM maintenance compliance. Since the average grading permit property contains an average of 3 SCM structures, it is estimated that NPDES inspected over 3,000 individual SCM structures for maintenance compliance. As a result of the inspections, NPDES issued 332 notices to property owners informing them of the inspection results and any required maintenance. While some notices are in verbal or email form, the majority of the 332 notices issued were detailed letters that include inspection findings, a copy of the engineering plans and maintenance agreements, and photographs of the compliance issues. In addition, NPDES issued 3 Notices of Noncompliance to property owners that failed to respond to maintenance needs or were found to have altered the function of SCM structures without notification. One of the more challenging aspects NPDES has encountered over the first few years of the expanded SCM maintenance oversight program has been tracking down and contacting residential SCM property owners.

In FY20, NPDES continued coordination with the Metro Legal 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. The inspection and follow-up with SCMs located on commercial or industrial-owned properties, however, has proven to be much more successful, which should directly translate to continually improving stormwater runoff from these facilities. In FY20, NPDES continued to inspect every Metro-owned SCM and coordinate with the various departments that oversee the maintenance responsibilities. NPDES also began working with the various departments to establish new Memorandums of Understanding (MOU) reflecting the new process of NPDES inspecting SCMs every year and reporting major maintenance needs to each department. All of the MOUs are expected to be executed in FY21. Below are some before and after photographs of SCM structures that NPDES inspected and coordinated with the property owner to perform maintenance.

Photographs of SCM Maintenance Performed after NPDES Inspection and Follow-up Coordination

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 ten thousand trees have been planted and counted towards the campaign. In order to help meet the Root Nashville 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 is planning to plant over 900 trees on our properties during FY21. They are also developing a program to plant and maintain trees within Metro's right-of-way. These trees will help mitigate the 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.

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 FY20, 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 each year of 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.

National Stormwater Award Recipient:

In FY20, MWS Stormwater NPDES was formally recognized as the Best Phase 1 Organization by the Stormwater Congress at the Water Environment Federation's Annual Technical Exhibition and Conference (WEFTEC) in Chicago, Illinois. The 2019 Water Environment Federation (WEF) National Municipal Stormwater and Green Infrastructure Awards Program selected Nashville's NPDES program for the award and categorized the program as Gold Level in Innovation and Gold Level in Project Management. The National Municipal Stormwater and Green Infrastructure Awards program, developed and introduced in 2015 by the Water Environment Federation through a cooperative agreement with the U.S. Environmental Protection Agency (EPA), was established to recognize high-performing regulated MS4s. Award winners meet and exceed regulatory requirements in innovative ways that are effective and cost-efficient.

An article from the WEF published magazine recognizing the award winners is included in Section 4 of this document. As this report was being compiled, NPDES was informed that Nashville's MS4 program also won the 2020 MS4 award for the innovation category for all the techniques deployed for public outreach and education and the quantification of illicit discharge detection and elimination activities of the program. More information on this award can be found at the following website: https://stormwater.wef.org/2020/09/wef-stormwater-institute-honors-outstanding-ms4-permittees/.

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 and valuable positive impact on water quality and conservation through its environmental education programs, interpretive exhibits, green facilities, and watershed protection. Of the approximately 27,000 individuals who participated in nature center programs last year, as many as 10,000 received education and information directly related to water resources. Up to 142,000 more park visitors were exposed to water resources education through 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 491,300 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.

Mill Ridge Property – During the previous fiscal years, MNPR acquired several hundred acres of property in the southeastern portion of the county. This property, which is mostly old farmland, is rich with water resources as several tributaries to Hurricane Creek and Collins Creek are present throughout the parcels of land. NPDES began coordinating with MNPR on some potential stream/wetland enhancement projects on the property in previous permit years. In FY18, MNPR acquired an additional 60 acres of land that contain additional degraded headwater streams that may serve as potential stream mitigation projects in the future.

Parks Land Conservation - The majority of the 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 using 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 man-made 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 Boomers 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 is 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 other 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 2019 and 2020, the Planning Department worked on two corridor plans for properties along Dickerson Pike. The first plan started from the Pike's southern terminus north to Trinity Lane and the second plan covered 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 plans call 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.

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, wildlife habitat, and water management in flood-prone areas.

The Planning Department meets on a daily basis 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 oversee 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 10 years. Due to financial constraints in FY20, 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 will increase 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.

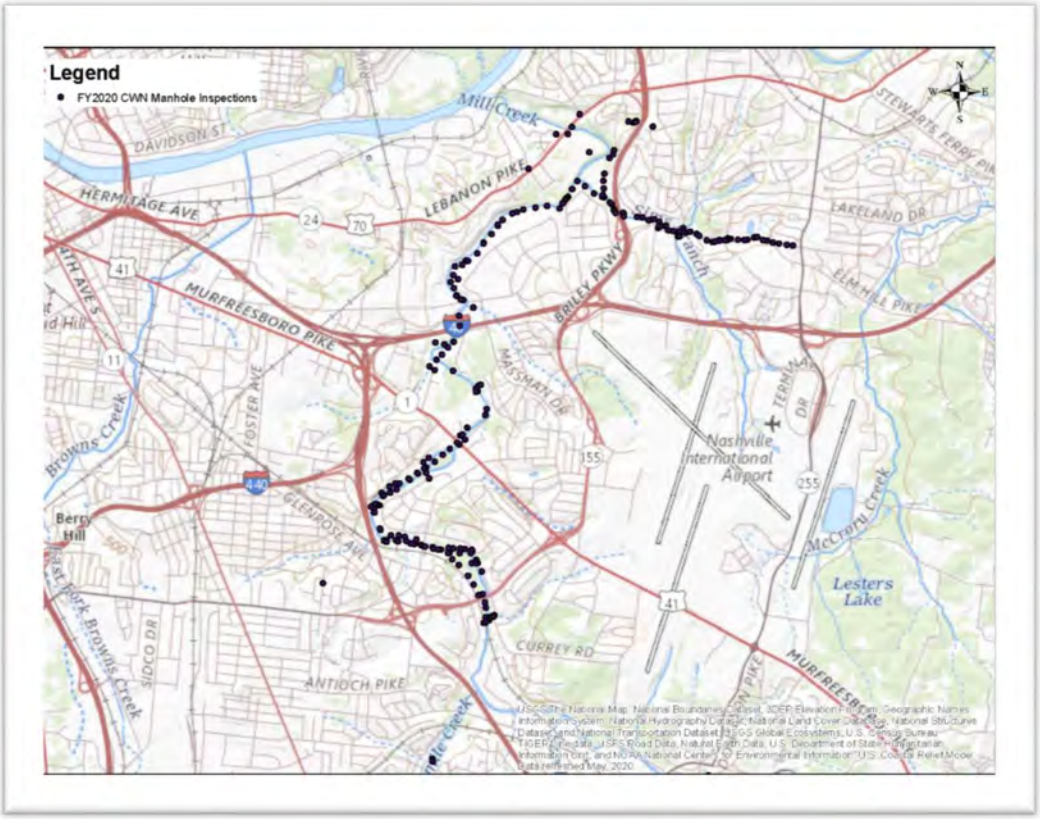
In addition to major engineering/construction projects, CWN began performing targeted sanitary sewer trunk line walking in FY20 to look for structural integrity issues with the sewer manholes. CWN particularly focused on Mill Creek and the North Fork of Ewing Creek in FY20. The sewer walks revealed many issues with the pipe to manhole connections that resulted in groundwater infiltrating into the sanitary system as well as the potential for sanitary sewer to seep out of the sewer main. Most of these issues that were found have since been corrected. The figures below illustrate the areas in which sewer trunk lines were field inspected in FY20.

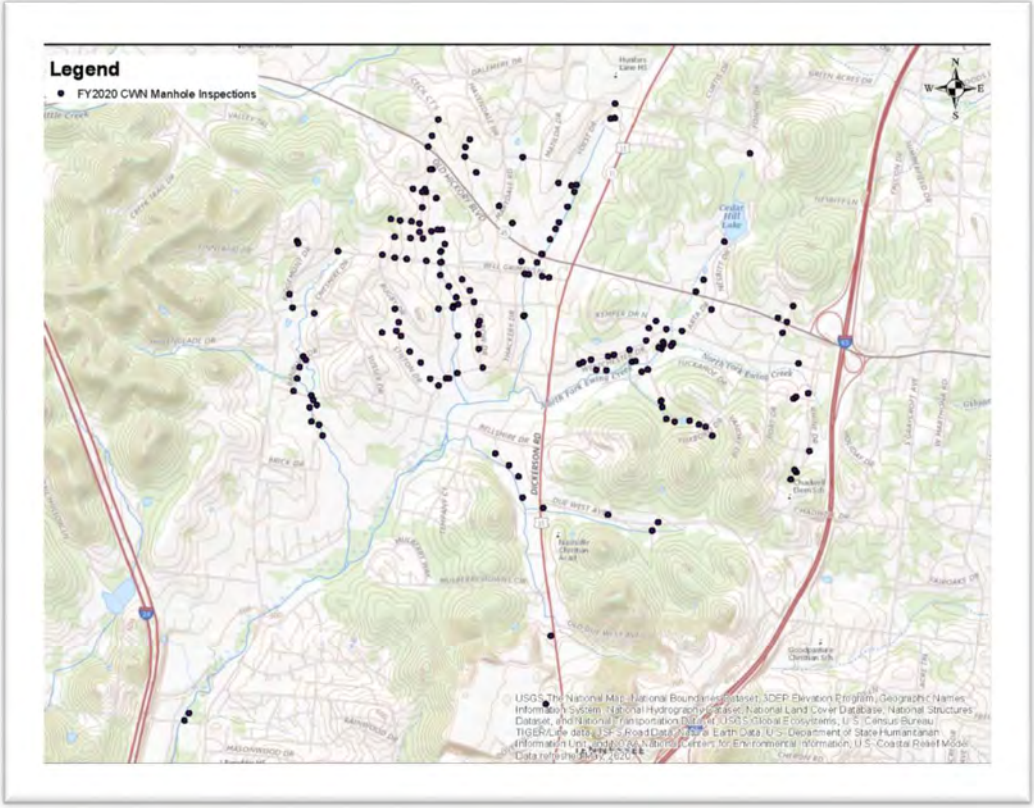
Table 3 – MWS Engineering Projects to Reduce Sanitary Overflows

Type of Projects	Miles of Sanitary Lines	Money Spent	Watersheds Where Work was Performed
Vandiver Rehabilitation: Design began in December 2016 for this project, which will reduce I/I related issues in the collection system. Design was completed in June 2017. Construction began in March 2018 and was completed in FY 2020.	5.8	$3.96M	Cumberland River

Table 4 – Future MWS Engineering Projects to Reduce Sanitary Overflows

Project	Miles	Costs	Watersheds
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 on October 2016. Advertisement for construction occurred in FY 20, and construction will begin in FY 21.		est. $29 M	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 construction is scheduled to begin in FY 21.		est. $19 M	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 will concluded in FY 2020. Advertisement for construction packages occurred in FY 20, and construction will begin in FY 2021.		est. $380M	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. Construction is scheduled to begin in FY 2021.	4.92	est. $4.6M	Dry 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	est. $4.4 M	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 construction is scheduled to begin in FY 2021.	3.89	est. 11.6 M	Cooper 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 2021.	5.30	est. $5.7 M	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 2021 dependent upon completion of easement acquisitions.	2.29	est. $12.6 M	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 be scheduled in FY 2021.	7.80	est. $8.2 M	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	est. $7.4 M	Cumberland River





Locations of Sanitary Sewer Trunk Line Walk Data Points

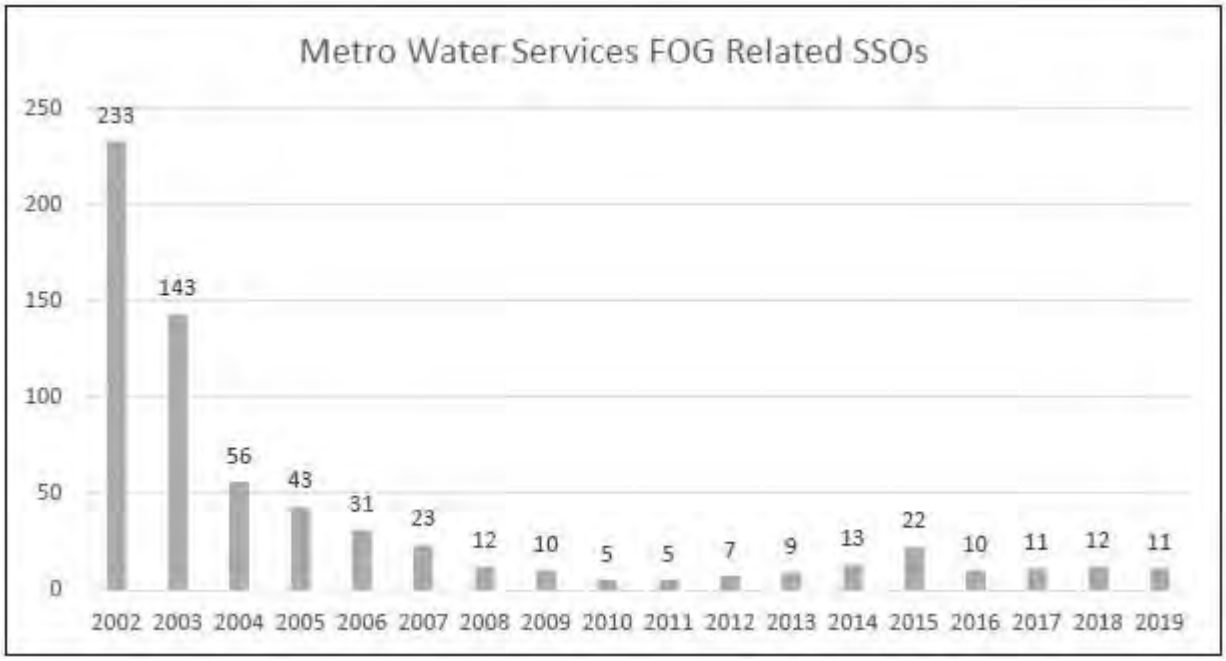
MWS System Services Division

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 FY20 SSD and contractors inspected with Closed Circuit TV (CCTV) approximately 478,527 linear feet and cleaned approximately 240,737 linear feet of Metro sewer line. During FY20, 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 FY20 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 2019, MWS issued 132 Noncompliance Notifications (NCNs) 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 2019, there were 11 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 caused 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 600,000+*

What is the reporting period for this annual report? *The reporting period for this Annual report is from 07/01/19 to 06/30/20, which is the 9th reporting period under the current permit. This Annual Report coincides with Metro's Fiscal Year 2020 (FY20) 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
Manskerss 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
Manskerss 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
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 FY20, 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 educate the new generation of customers about stormwater issues and pollution. Three main social media sources (Facebook, Twitter, 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, cigarette butts, lawn wastes, pet waste, and general trash. In particular, during FY20, Metro posted various social media messages that reached over 16,700 different views, many of which included stormwater-specific messaging. NPDES also continued to achieve specific public education outcomes by sending out email or mail-out notices to various audience groups (i.e. development community, specific neighborhoods, etc.) In FY20, NPDES sent out targeted public education mail-outs to 188 residents within the Ewing Creek watershed that discussed the proper use of fertilizers and disposal of lawn waste. Many phone calls and emails were generated from concerned citizens in response to this mail-out.

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 Department provides numerous opportunities designed to receive feedback from the general public or other stakeholders on a routine basis. Over the past few years, the Planning Department has created several "Resource Teams" that are made up of various stakeholders from the private and public sector involved in advising the Planning Department on future development activities, much of which involves sustainable stormwater practices. Information on public meeting opportunities can be found at the following website link:

https://www.nashville.gov/Planning-Department/Meeting-Information/Virtual-Public-Comment.aspx

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 in the spring/summer 2020 due to the COVID-19 Pandemic. 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, 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 276 LID Waiver requests. As a result, 224 of the requests were eventually approved (some with conditions), while the remaining 52 requests were either denied or withdrawn. During FY20, MWS continued to pursue 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. This update is expected to be completed and implemented in FY21.

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, the 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 FY20, there were 283 grading permits issued, while 285 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. As of FY20, there were 770 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 8,590 construction-related inspections in FY20. 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 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 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.*

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 11,897 MS4-permitted Outfalls, 392 Sub-MS4 Outfalls, and 2,432 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 FY20, 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 FY20, NPDES screened 187 separate ½ mile grids for potential stormwater runoff issues, which included looking at 421 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 FY20, there were 6 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 130 separate water quality investigations during FY20, most of which, originated from citizen complaints. Refer to Table 7H.1 for a complete listing of the 130 IDDE investigations initiated during FY20. There were also 11 spill response investigations and 7 sanitary sewer 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, the Health Department investigated 60 properties for reports of failing septic systems (refer to Table 7H.4) In addition, the Metro Codes Department responds to many illegal dumping and private sanitary sewer discharge complaints each year that are not represented in these tables.

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 FY20, NPDES performed audit inspections on all of the RMP facilities except the Fairgrounds (under construction) and updated plans as necessary.

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 FY20, 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 FY20, NPDES personnel performed audit inspections of each of the RMP facilities to ensure each individual site is being maintained as designated in the RMP. The RMPS were also updated during this process to reflect personnel changes and site management changes at the site. NPDES plans to perform these audit inspections once every 2 years. 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 since re-evaluated this process and has decided to dedicate a greater amount 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 discovered that some of the inspection and maintenance reports that were submitted were not accurate and lacking in content. X Yes ☐ No

During previous permit years, NPDES expanded resources dedicated to SCM inspection and maintenance oversight. In FY20, 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 FY20. It is estimated that approximately 203,431 cubic yards of material was removed from the MS4 ditches and culverts, approximately 329,850 pounds of material was removed from 36,650 inlets, and approximately 570,815 square feet of erosion control matting was deployed during the FY20 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 FY20.

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 FY20 would provide the following benefits to water quality.

- *Removal of approximately 3,652 cubic yards of accumulated sediment,*
- *Stabilization of 245 linear feet of stream banks*
- *Removal of approximately 212 linear feet of concrete-lined ditch, and*
- *Stabilization of 9,228 linear feet of redefined ditches.*

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 FY20, the Permit Group section within NPDES had 6 people that were primarily dedicated to investigating and enforcing on illicit discharge issues. Toward the end of FY20, NPDES added another inspector to the Permit Group to make 7 employees now trained in IDDE response. 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 19 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 FY20, 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 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 FY20, NPDES audited and updated all of the Runoff Management Plans for municipal maintenance facilities. This process involved coordination with on-site personnel at each facility. In FY20, 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.

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 1,646 plans submitted to the MWS Development Review Section during FY20. 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 FY20.

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

According to queries of Metro permit tracking database Cityworks, there were 1,537 plans approved during FY20. 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 FY20, there were 283 grading permits issued.

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

There were an estimated 3,045 inspections of individual SCM structures by NPDES staff during FY20. 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. Most properties have multiple SCMs, therefore, when a property is inspected or re-inspected, several SCM structures often get inspected. For this number we consider there is an average of 3 SCMs located per each grading permit property. The estimated 3,045 structure inspection/re-inspections included 1,015 separate site visits to completed grading permit properties.

How many were found to have inadequate maintenance?

Of the 1,015 grading permit sites visited by NPDES in FY20, inspectors issued 332 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 a 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 FY20, 3 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 283, which is an assumed number based on the number of grading permits issued during FY20.

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 Department of Public Works, Division of Solid Waste 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 FY20, 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 FY20 NPDES inspected 46 industrial facilities. Refer to Table 10.F.1 for a list of Industrial Facilities that were inspected during FY20.

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 FY20, MWS Development Services issued 48 NOVs that included an assessment of $11,300 in administrative penalties.*

Action	Construction	Permanent Stormwater Controls	Illicit Discharge	Authority?
Notice of violation	54	0	6	X Yes ☐ No
Administrative Penalties	$25,142	$0	$900	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:		3 Notices of Non Compliance	8 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 FY20, NPDES, which oversees various MS4 compliance activities, operated under a budget of $3,091,500. The overall MWS Stormwater Division's budget, which includes NPDES, Development Services Review engineers, Stormwater Planning and Stormwater Maintenance, was $24,936,000. 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 FY21 budget includes $3,272,600 dedicated to the Stormwater NPDES Section, while the overall Stormwater Department is operating under a budget of $27,696,200.

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 $36,801,400

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 119 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 11 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 FY20 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 209 water quality samples and performed visual stream assessments on approximately 79,000 linear feet of 303(d)-listed streams within FY20.

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 is operational in FY20. Specific tables and graphs of FY20 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 IDDE program in response to a Compliance Evaluation Inspection (CEI) by TDEC in July of 2020. As a result of the internal review and TDEC's CEI, NPDES made some adjustments to IDDE enforcement policies and the SWMP narrative. Changes to the SWMP were included in attachments to the SWMP. These SWMP amendments are included in Attachment B of this document.

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. As mentioned in the above section, NPDES made some adjustments to the IDDE enforcement policies and IDDE SWMP narrative from recommendations of the TDEC CEI. 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 - Util Srv Mgr — Printed Name and Title

Signature

12/13/20 — Date

3.0 Required MS4 Reporting Tables

List of Tables

Table 6B.1 – Grading Permit Projects Initiated/Completed within FY20

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	**4,452**	**4,071**	**3,479**

Table 6C.1 – Small Construction Site Oversight in FY20

New Infill Permits Issued	1,379
Follow up site visits for Infill Developments	3,345
NOVs Issued to Single Family Residential Development	48

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 Investigations Initiated during FY20

Number	Location	Date Initiated	Initiated By
2020039567	277 BECKLEA DR 37115	6/25/2020 14:02	Kevin Turner
2020038957	102 IRIS AVE 37138	6/24/2020 7:30	Kevin Turner
2020038148	833 NETHERLANDS DR 37076	6/19/2020 13:05	Kevin Turner
2020038123	922 DRUMMOND DR 37211	6/19/2020 11:58	Kevin Turner
2020038120	3401 CENTRAL PIKE 37076	6/19/2020 11:53	Kevin Turner
2020037062	115 BELLEVUE DR S 37205	6/16/2020 9:59	Allison Davis
2020036971	4864 MCCOOL RD 37218	6/15/2020 20:01	Kevin Turner
2020036056	3412 RICHARDS ST 37215	6/11/2020 8:28	Kevin Turner
2020035370	116 BELLE GLEN DR 37221	6/8/2020 15:28	Kevin Turner
2020034827	7709 DAN KESTNER DR 37221	6/4/2020 15:20	Kevin Turner
2020032801	1805 DICKERSON PIKE 37207	5/27/2020 12:26	Kevin Turner
2020032798	6922 NOLENSVILLE PIKE 37027	5/27/2020 12:24	Kevin Turner
2020031769	5800 CROSSINGS BLVD 37013	5/21/2020 10:46	Kevin Turner
2020031132	2580 MURFREESBORO PIKE 37217	5/19/2020 8:39	Kevin Turner
2020031126	2714 RIVERBEND DR 37214	5/19/2020 8:27	Kevin Turner
2020031110	710 JOBEE CREEK CV 37214	5/19/2020 7:46	Kevin Turner
2020031099	400 SHELBY AVE 37206	5/19/2020 7:12	Kevin Turner
2020026146	266 STEWARTS FERRY PIKE 37214	4/24/2020 14:15	Kevin Turner
2020026145	4085 MAGNOLIA FARMS DR 37076	4/24/2020 14:13	Kevin Turner
2020024585	231 ORLANDO AVE 37209	4/20/2020 7:27	Jessica Bell
2020024467	4208 SNEED RD 37215	4/17/2020 12:06	Kevin Turner
2020024465	0 POPLAR CREEK TRCE 37221	4/17/2020 12:03	Kevin Turner
2020022849	4208 BRICK CHURCH PIKE 37189	4/10/2020 8:12	Allison Davis
2020022631	1907 LEBANON PIKE 37210	4/9/2020 11:00	Kevin Turner
2020022063	2128 CANADY AVE 37211	4/7/2020 12:15	Kevin Turner
2020021643	318 54TH AVE N 37209	4/6/2020 9:15	Joshua Hayes
2020021516	4200 VALLEY GROVE DR 37076	4/3/2020 13:49	Kevin Turner
2020019638	6648 JOCELYN HOLLOW RD 37205	3/26/2020 12:51	Kevin Turner

Table 7H.1 – Illicit Discharge Investigations Initiated during FY20 (Continued)

Number	Location	Date Initiated	Initiated By
2020018470	1801 B TAMMANY DR 37216	3/23/2020 7:14	Kevin Turner
2020018047	6297 OLD HICKORY BLVD 37189	3/19/2020 14:30	Kevin Turner
2020016455	129 BUSH RD 37217	3/12/2020 14:15	Allison Davis
2020016000	4220 HARDING PIKE 37205	3/11/2020 10:43	Veronica Logue
2020015857	4519 CHARLOTTE AVE 37209	3/11/2020 7:59	Kevin Turner
2020015848	1607 COUNTY HOSPITAL RD 37218	3/11/2020 7:25	Kevin Turner
2020015666	1907 LEBANON PIKE 37210	3/10/2020 12:40	Joshua Hayes
2020013354	7489 HARROW DR 37221	2/28/2020 11:06	Allison Davis
2020009804	5229 SUNSAIL DR 37013	2/13/2020 10:54	Kevin Turner
2020009782	2253 B CASTLEMAN DR 37215	2/13/2020 10:28	Kevin Turner
2020007948	3806 RICHLAND AVE 37205	2/5/2020 11:35	Kevin Turner
2020007944	88 BENZING RD 37013	2/5/2020 11:33	Kevin Turner
2020007928	1901 KIMBARK DR 37215	2/5/2020 11:15	Kevin Turner
2020007006	3820 MARYDALE DR 37207	1/31/2020 12:57	Kevin Turner
2020006542	4820 LEESA ANN LN 37076	1/30/2020 8:24	Kevin Turner
2020005552	1009 ANTIOCH PIKE 37211	1/27/2020 7:57	Kevin Turner
2020005537	2947 SINBAD DR 37214	1/27/2020 7:20	Kevin Turner
2020005455	1053 MURFREESBORO PIKE 37217	1/24/2020 14:16	Kevin Turner
2020002945	401 BOWLING AVE #97 37205	1/14/2020 14:01	Kevin Turner
2020002845	0 ROSA L PARKS BLVD 37228	1/14/2020 10:14	Joshua Hayes
2020002751	1 TERMINAL DR 37214	1/14/2020 7:49	Kevin Turner
2020002383	5135 HARDING PL 37211	1/13/2020 8:55	Kevin Turner
2020002380	1019 OMOHUNDRO PL 37210	1/13/2020 8:54	Kevin Turner
2020002375	1415 MURFREESBORO PIKE 37217	1/13/2020 8:51	Kevin Turner
2020001941	5560 NOLENSVILLE PIKE 37211	1/9/2020 15:10	Kevin Turner
2020001920	1 UNIVERSITY PARK DR 37204	1/9/2020 14:37	Kevin Turner

Table 7H.1 – Illicit Discharge Investigations Initiated during FY20 (Continued)

Number	Location	Date Initiated	Initiated By
2020001145	0 KNIGHTS OF COLUMBUS BLVD 37214	1/7/2020 13:47	Kevin Turner
2020000091	5353 CANE RIDGE RD 37013	1/2/2020 9:28	Kevin Turner
2020000088	2164 GOLF CLUB LN 37215	1/2/2020 9:26	Kevin Turner
2019079026	3800 SAM BONEY DR 37211	12/30/2019 14:16	Kevin Turner
2019078572	118 4TH AVE 37115	12/27/2019 10:07	Kevin Turner
2019077113	7320 CENTENNIAL BLVD 37209	12/17/2019 14:47	Kevin Turner
2019076053	127 GALLATIN PIKE N 37115	12/12/2019 10:53	Joshua Hayes
2019074530	2500 12TH AVE S 37204	12/5/2019 14:41	Allison Davis
2019074120	3602 OLD HICKORY BLVD 37138	12/4/2019 13:05	Kevin Turner
2019073837	4724 OLD HICKORY BLVD 37138	12/3/2019 13:12	Kevin Turner
2019073590	6198 CULBERTSON RD 37013	12/3/2019 7:44	Kevin Turner
2019072544	1006 DELRAY CT 37209	11/26/2019 7:49	Joshua Hayes
2019072236	957 SOUTHSIDE PL 37203	11/25/2019 9:16	Kevin Turner
2019072101	140 5TH AVE S 37201	11/22/2019 15:05	Kevin Turner
2019072098	360 MURFREESBORO PIKE 37210	11/22/2019 15:04	Kevin Turner
2019069733	3616 GALLATIN PIKE 37216	11/13/2019 14:18	Kevin Turner
2019069620	604 MOOREWOOD CT 37207	11/13/2019 10:59	Kevin Turner
2019069616	4398 STENBERG RD 37189	11/13/2019 10:52	Kevin Turner
2019069341	460 CRAIGHEAD ST 37204	11/12/2019 14:00	Allison Davis
2019069308	5310 GEORGIA AVE 37209	11/12/2019 12:32	Kevin Turner
2019068784	1018 ELM HILL PIKE 37210	11/8/2019 8:37	Kevin Turner
2019068692	508 OLD HICKORY BLVD 37138	11/7/2019 14:20	Kevin Turner
2019067214	5165 RAWLINGS RD 37080	11/1/2019 14:11	Kevin Turner
2019066653	720 DAVIDSON ST 37213	10/30/2019 14:24	Kevin Turner
2019065543	6401 CHARLOTTE PIKE 37209	10/25/2019 14:57	Kevin Turner
2019065044	400 NEELYS BEND RD 37115	10/24/2019 11:06	Kevin Turner

Table 7H.1 – Illicit Discharge Investigations Initiated during FY20 (Continued)

Number	Location	Date Initiated	Initiated By
2019063577	407 CRAIGHEAD ST 37204	10/17/2019 15:07	Kevin Turner
2019062430	735 HARDING PL 37211	10/14/2019 7:32	Kevin Turner
2019062136	7601 HIGHWAY 70 S 37221	10/10/2019 14:11	Allison Davis
2019062126	2131 ABBOTT MARTIN RD 37215	10/10/2019 13:50	Kevin Turner
2019061780	1019 BATE AVE 37204	10/9/2019 13:05	Kevin Turner
2019060999	1070 CINDER RD 37138	10/7/2019 9:11	Kevin Turner
2019060502	6856 COLLINSWOOD DR 37221	10/3/2019 10:01	Kevin Turner
2019059223	2421 POWELL AVE 37204	9/27/2019 13:38	Allison Davis
2019057894	7252 HIGHWAY 70 S #100 37221	9/23/2019 13:26	Kevin Turner
2019057249	688 BREWER DR 37211	9/19/2019 13:35	Allison Davis
2019057124	5526 ASHLAND CITY HWY 37218	9/19/2019 10:01	Kevin Turner
2019056014	700 A FATHERLAND ST 37206	9/16/2019 11:32	Kevin Turner
2019053909	939 ANDERSON LN 37115	9/6/2019 11:26	Kevin Turner
2019053622	8687 OLD HARDING PIKE 37221	9/5/2019 11:14	Kevin Turner
2019052698	1403 4TH AVE S 37210	8/30/2019 14:01	Kevin Turner
2019051965	630 GALLATIN PIKE N 37115	8/28/2019 11:26	Kevin Turner
2019051652	4402 TENNESSEE AVE 37209	8/27/2019 13:03	Kevin Turner
2019051482	134 SPACE PARK SOUTH DR 37211	8/27/2019 7:40	Kevin Turner
2019051108	320 GALLATIN PIKE S 37115	8/23/2019 13:11	Joshua Hayes
2019049871	400 TULIP GROVE RD 37076	8/19/2019 15:25	Kevin Turner
2019049495	4601 MURPHY RD 37209	8/16/2019 14:13	Kevin Turner
2019049485	720 DAVIDSON ST 37213	8/16/2019 13:59	Kevin Turner
2019049112	2947 BRICK CHURCH PIKE 37207	8/15/2019 8:19	Kevin Turner
2019049085	40 WHITE BRIDGE PIKE 37205	8/15/2019 7:26	Kevin Turner
2019048478	401 COMMERCE ST 37219	8/13/2019 7:18	Kevin Turner
2019048423	5172 WHITLOW MOUNTAIN RD 37015	8/12/2019 15:17	Kevin Turner
2019048198	3741 ANNEX AVE 37209	8/12/2019 8:47	Kevin Turner
2019047606	6921 HIGHWAY 100 37221	8/8/2019 9:50	Kevin Turner
2019047601	2021 FATHERLAND ST 37206	8/8/2019 9:45	Kevin Turner

Table 7H.1 – Illicit Discharge Investigations Initiated during FY20 (Continued)

Number	Location	Date Initiated	Initiated By
2019047594	50 VAUGHN RD 37221	8/8/2019 9:38	Kevin Turner
2019047589	2235 TWO RIVERS PKWY 37214	8/8/2019 9:35	Kevin Turner
2019047585	1901 ED TEMPLE BLVD 37208	8/8/2019 9:32	Kevin Turner
2019047578	1221 FORREST PARK DR 37221	8/8/2019 9:28	Kevin Turner
2019047576	4601 MURPHY RD 37209	8/8/2019 9:26	Kevin Turner
2019047572	860 OLD HICKORY BLVD W 37207	8/8/2019 9:15	Kevin Turner
2019047304	1302 NEELYS BEND RD 37115	8/7/2019 11:31	Kevin Turner
2019046645	8207 SAWYER BROWN RD #A-1 37221	8/5/2019 15:01	Allison Davis
2019046586	718 HUNTINGTON PKWY 37211	8/5/2019 13:36	Joshua Hayes
2019045869	350 HARDING PL 37211	8/1/2019 8:23	Kevin Turner
2019045378	347 WILHAGAN RD 37217	7/30/2019 15:20	Kevin Turner
2019045297	1818 ASHTON AVE 37218	7/30/2019 13:44	Allison Davis
2019044765	4487 POST PL #1 37205	7/29/2019 7:23	Kevin Turner
2019044555	1 TITANS WAY 37213	7/26/2019 10:09	Kevin Turner
2019044038	6434 OLD HICKORY BLVD 37189	7/24/2019 13:50	Kevin Turner
2019043936	3273 RIVER WALK DR 37214	7/24/2019 10:46	Kevin Turner
2019042812	3201 CLARKSVILLE PIKE 37218	7/18/2019 14:53	Aujuah Jackson
2019042367	1314 FORREST PARK DR 37205	7/17/2019 10:11	Allison Davis
2019041771	2190 BANDYWOOD DR 37215	7/15/2019 11:59	Allison Davis
2019041124	2576 HESSEY PASS 37122	7/11/2019 12:15	Allison Davis
2019040812	1301 FOSTER AVE 37210	7/10/2019 11:32	Joshua Hayes

Table 7H.2 – Spill Response Investigations Initiated by NPDES during FY20

Number	Location	Date Initiated	Initiated By
2020037317	1208 SILVERLEAF CT 37221	6/17/2020 6:24	Dale Binder
2020027715	13010 OLD HICKORY BLVD 37013	5/4/2020 7:49	Dale Binder
2020026321	5280 CANE RIDGE RD 37013	4/27/2020 9:46	Dale Binder
2020020079	1500 TURNER ST 37138	3/30/2020 7:16	Dale Binder
2019069797	880 CONFERENCE DR 37072	11/14/2019 7:24	Kenneth Tranter
2019066726	715 POPLAR AVE 37210	10/31/2019 5:48	Dale Binder
2019066725	5055 FRANKLIN PIKE 37220	10/31/2019 5:19	Dale Binder
2019058658	800 2ND AVE S 37210	9/26/2019 5:54	Dale Binder
2019044855	6575 CABOT DR 37209	7/29/2019 10:03	Kevin Turner
2019043154	3024 ELM HILL PIKE 37214	7/22/2019 8:55	Kenneth Tranter
2019040968	2801 JOHN A MERRITT BLVD 37209	7/11/2019 6:42	Kenneth Tranter

Table 7H.3 – MWS Sewer Discharge Investigations Initiated by NPDES during FY20

NUMBER	LOCATION	INITIATED DATE	INITIATED BY NAME
2020000942	3216 CURTIS ST 37218	1/7/2020 8:58	Kevin Turner
2019072097	521 NORTHCREST DR 37211	11/22/2019 15:03	Kevin Turner
2019071300	5224 TROUSDALE DR 37220	11/20/2019 11:22	Kevin Turner
2019065985	6716 HOLT RD 37211	10/29/2019 7:40	Kevin Turner
2019063958	5242 TROUSDALE DR 37220	10/21/2019 8:05	Kevin Turner
2019063040	5007 META DR 37211	10/16/2019 8:16	Kevin Turner
2019044566	1610 12TH AVE N 37208	7/26/2019 10:26	Kevin Turner

Table 7H.4 - Failing Septic System Investigations Performed by the Health Department in FY20

Date Received	Street Name	Job Description	Date Investigated	Sewage on the Ground	Date Abated
5/29/2019	9044 S. Harpeth Court	Failure	6/3/2019	No	-
7/9/2019	1467 Campbell Road	Failure	7/9/2019	Yes	8/8/2019
7/9/2019	2217 Baker Road	Failure	7/9/2019	No	-
7/17/2019	3092 Ivey Point Road	Failure	7/18/2019	Yes	9/9/2019
7/23/2019	6993 Old Hickory Boulevard	Failure	7/29/2019	No	9/10/2019
7/25/2019	4805 Lickton Pike	Failure	7/29/2019	Yes	8/27/2019
7/28/2019	6587 Old Hickory Boulevard	Failure	7/30/2019	Yes	11/13/2019
7/25/2019	1230 Jefferson Davis Court	Failure	7/31/2019	Yes	9/23/2019
8/1/2019	5384 Brick Church Pike	Failure	8/2/2019	No	-
8/6/2019	4708 Hessey Road	Failure	8/15/2019	Yes	10/28/2019
8/11/2019	27 Jones Circle	Failure	8/15/2019	No	-
9/3/2019	4796 Drakes Branch Road	Failure	9/9/2019	No	-
9/3/2019	5941 Lickton Pike	Failure	9/9/2019	No	-
8/30/2019	4493 Brick Church Pike	Failure	9/11/2019	Yes	10/15/2019
9/11/2019	4625 Whites Creek Pike	Failure	9/16/2019	No	-
9/30/2019	7736 Greenbrier Road	Failure	10/1/2019	No	-
10/3/2019	4041 Twin Oaks Land	Failure	10/9/2019	No	-
10/10/2019	2640 Union Hill Road	Failure	10/10/2019	No	-
10/10/2019	2557 Pennington Bend Road	Failure	10/11/2019	No	-
10/16/2019	2553 Pennington Bend Road	Failure	10/16/2019	No	-
11/13/2019	8525 Raymond Roberts Drive	Failure	11/14/2019	No	-
11/14/2019	6774 Gower Road	Failure	11/19/2019	No	-
12/17/2019	212 Hurst Drive	Failure	12/19/2019	No	-
12/19/2019	3845 Baxter Road	Failure	12/30/2019	No	-
12/23/2019	1862 Union Hill Road	Failure	12/30/2019	Yes	-
1/2/2020	3124 Freeman Hollow Road	Failure	1/3/2020	Yes	2/3/2020
?	7267 Bidwell Road	Failure	1/8/2020	No	1/27/2020
1/24/2020	675 Brick Church Pike	Failure	1/28/2020	Yes	6/23/2020
2/5/2020	3654 Hogget Ford Road	Failure	2/11/2020	Yes	2/26/2020
3/2/2020	4366 Waller Road	Failure	3/5/2020	Yes	
3/11/2020	6129 Clarksville Pike	Failure	3/13/2020	Yes	6/15/2020

Table 7H.4 - Failing Septic System Investigations Performed by the Health Department in FY20
(Continued)

Date Received	Street Name	Job Description	Date Investigated	Sewage on the Ground	Date Abated
3/13/2020	3395 Freeman Hollow Road	Failure	3/16/2020	No	-
3/19/2020	8475 Poplar Creek Road	Failure	3/19/2020	No	-
3/10/2020	5970 Mt. View Road	Failure	4/6/2010	No	-
3/30/2020	6060 Eatons Creek Road	Failure	4/6/2020	Yes	5/12/2020
3/19/2020	8413 Whites Creek Road	Failure	4/6/2020	No	-
3/31/2020	5227 John Hager Road	Failure	4/8/2020	Yes	5/22/2020
4/8/2020	7550 Wilkerson Pike	Failure	4/8/2020	Yes	
?	5047 Seymour Hollow Road	Failure	4/14/2020	Yes	6/5/2020
4/13/2020	3560 Baxter Road	Failure	4/14/2020	Yes	5/28/2020
4/16/2020	7156 Bidwell Road	Failure	4/17/2020	No	-
4/17/2020	7221 Whites Creek Pike	Failure	4/17/2020	Yes	6/24/2020
4/20/2020	4772 Lickton Pike	Failure	4/21/2020	No	-
4/20/2020	4146 Brick Church Pike	Failure	4/22/2020	Yes	-
4/27/2020	5831 Pettus Road	Failure	5/5/2020	No	-
5/6/2020	1361 Campbell Road	Failure	5/6/2020	No	-
5/8/2020	178 Fox Vale Road	Failure	5/14/2020	No	-
5/13/2020	5927 Eatons Creek Road	Failure	5/14/2020	Yes	6/30/2020
?	8692C Haselton Road	Failure	5/15/2020	Yes	6/17/2020
5/15/2020	5765 Eatons Creek Road	Failure	5/18/2020	Yes	-
5/18/2020	12156 Old Hickory Boulevard	Failure	5/19/2020	No	-
5/20/2020	9051 Hester Beasley Road	Failure	5/29/2020	Yes	7/17/2020
5/28/2020	712 Trevor Drive	Failure	6/1/2020	No	-
6/8/2020	4491 Chandler Road	Failure	6/8/2020	No	-
6/15/2020	7820 Whites Creek Pike	Failure	6/15/2020	No	-
5/27/2020	7956 Saddle Ride Trace	Failure	6/17/2020	No	-
6/16/2020	5750 Craft Road	Failure	6/17/2020	Yes	
6/15/2020	1444 Hunters Lane	Failure	6/18/2020	?	-
6/15/2020	109 Northside Drive	Failure	6/18/2020	No	-
6/25/2020	6217 Old Hickory Blvd	Failure	6/25/2020	No	-

Table 7H.5 – MWS Estimated/Reported Sewage Overflows in FY20

	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOT
Wet Weather Overflows - CSO Permitted	13	23	2	20	14	13	16	14	30	19	12	11	187
Wet Weather Overflows - Sewer (non-pumps)	2	0	0	5	9	13	18	34	16	4	4	2	107
Wet Weather Overflows - Pump Stations	4	3	0	8	9	23	15	19	32	15	2	0	130
Wet Weather Overflows SSO- TOTAL	6	3	0	13	18	36	33	53	48	19	6	2	237
Dry Weather Overflows - Sewer (non-pumps)	2	3	4	8	4	10	7	13	7	6	7	9	80
Dry Weather Overflows - Pump Stations	0	1	0	1	0	1	0	0	0	1	0	0	4
Dry Weather Overflows - TOTAL	2	4	4	9	4	11	7	13	7	7	7	9	84
# of Overflows that Reached Creeks - Sewer	2	0	3	7	9	20	18	33	15	5	8	7	127
# of Overflows that Reached Creeks - Pump Stations (All)	4	4	0	9	9	24	15	19	32	16	2	0	134
# 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 FY20

ITEM	FY 2020 TOTAL
Ditch Excavated/Repaired (Linear Feet)	142,405
Debris Removed - Ditch Exc. & Repair (cubic yards)	3,550.25
Debris Removed - General (cubic yards)	203,431.43
Inlets Cleaned	36,650
Inlets Repaired	24
Material Removed (lbs)	329,850
Walls/Headwalls Built	587.5
Walls/Headwalls Repaired	35
Cross Drains Cleaned	335
Cross Drains Replaced	10
Matting Used (square feet)	570,815
Driveway Pipes Cleaned	1,440
Driveway Pipes Replaced	243
Preventative Maintenance Hours	8,813.48
Rain Routes Hours	1,825.9

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 FY20

	July	August	September	October	November	December	January	February	March	April	May	June	Total
Debris Collected (tons)	313.6	391.4	274.5	481.7	352.4	514.5	474.5	397.2	421.0	387.7	485.7	368.1	**4,862.1**
Miles of Street Swept	1,623.8	1,500.8	1,199.2	1,538.9	1,103.1	1,455.3	1,939.0	1,709.9	1,697.8	,808.1	2,185.8	1,943.2	**19,704.9**

Table 9F.1 - Development and Review Section Plan Review Numbers for FY20

	July	August	September	October	November	December	January	February	March	April	May	June	Total
Number of Plan Submittals	115	147	89	110	69	218	118	127	129	104	91	329	**1,646**
Number of Plan Approvals	114	146	86	107	67	194	115	117	123	104	89	275	**1,537**

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. 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
Airgass 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
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	No	No	
Auto Central	12761 Old Hickory Blvd	No	No	
Azko Nobel	20 Culvert Street	No	No	
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 Bv	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 Bv	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
Howard Baer, Inc.	1301 Foster Ave	Yes	No	TNR053385
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 Bv	Yes	No	TNR050060
Jacob Holm Opco Inc.	1002 Industrial Rd	Yes	No	TNR058900
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
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	
Land O'Lakes Purina Feed LLC -	3601 Trousdale Dr	Yes	No	TNR053398
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
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 Bvld	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 Bv	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 Jp 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
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 Bv	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 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 Bv	Yes	No	TNR051899
WestRock (Smurfit-Stone Container)	707 19th Ave N	Yes	No	TNR053040
WHIRLPOOL CORP	1714 Heil Quaker Bv	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 FY20

Site Name	Site Location	TMSP Site	RMCP Site	Date Inspected	TDEC Permit Number
Auto Central	12761 Old Hickory Blvd	No	No	6/4/20	
HARCROS CHEMICALS INC	1418 Poplar Ln	Yes	No	3/19/20	TNR058747
Amazon.com Services, Inc. - DNA1	2813 Brick Church Pike	Yes	No	3/13/20	TNR059540
Purity Dairies	360 Murfreesboro Pike	Yes	No	3/11/20	TNR053516
Sysco Nashville	1 Hermitage Plaza	Yes	No	2/27/20	TNR058838
Nashville Machine Company	530 Woodycrest Ave	Yes	No	2/25/20	TNR050889
Reading Midwest Distribution (FTEC, Inc. (Palfleet Truck))	1801 Lebanon Park	Yes	No	2/19/20	TNR056769
Greer Stop Nut	481 McNally Dr	Yes	No	2/13/20	TNR050038
Southern Services (Waste Management of Tennessee-Nashville)	4651 Amy Lynn Dr	Yes	No	2/11/20	TNR051258
Rock Harbor Marine/Marina	525 Basswood Ave	Yes	No	2/5/20	TNR058737
Nashville Central STP	1600 2nd Ave N	Yes	No	1/30/20	TNR053258
PSC Metals, Inc.	710 S 1st St	Yes	No	1/28/20	TNR051488
Pepsi Bottling Group	715 Thompson Ln	Yes	No	1/23/20	TNR051157
Whites Creek Wastewater Treatment Plant	1360 County Hospital Rd	No	No	1/21/20	
Dry Creek Wastewater Treatment Plant	61 Edenwold Rd	Yes	No	1/14/20	TNR053255
Tennessee Imports Auto Salvage	326 Oriel Ave	Yes	No	1/14/20	TNR055923
Nashville Wilbert Burial Vault Co.	432 Woodycrest Ave	Yes	No	1/8/20	TNR053618
Paulo Products Company	3206 Ambrose Ave	Yes	No	12/19/19	TNR050762
American Appliance Products - Madison	1129 Myatt Blvd	Yes	No	12/17/19	TNR050823
Dynamic Lifecycle Innovations TN LLC	3520 Ambrose Ave	Yes	No	12/10/19	TNR058723
Precision Design and Machine Inc	6124 Cockrill Bend Circle	Yes	No	12/5/19	TNR054425
American Fabricators Inc	570 Metroplex Drive	Yes	No	11/26/19	TNR050340
Cherokee Marine Terminal	520 Cowan St	Yes	No	11/14/19	TNR050033
All Star Recycling	460a Craighead Street	Yes	No	11/8/19	TNR056304
Kennametal Inc (ATI Metal Working Products)	1 Teledyne Place	Yes	No	11/5/19	TNR053523
Jones Bros. Contractors Asphalt Plant #1 (Danley)	820 Old Ezell Road	Yes	No	10/31/19	TNR050885

Table 10F.1 - Industrial Sites Inspected during FY20 (Continued)

Site Name	Site Location	TMSP Site	RMCP Site	Date Inspected	TDEC Permit Number
Quality Plating	71 Fesslers Ln	Yes	No	10/30/19	TNR056370
Industrial Machine and Tool Co.	88 Polk Avenue	No	No	10/29/19	
WestRock (Smurfit-Stone Container)	707 19th Ave N	Yes	No	10/23/19	TNR053040
Advanced Composites (TN)	3050 Sidco Dr	Yes	No	10/18/19	TNR050238
48Forty Solutions (CHEP Recycled Pallet Solutions, LLC)	601 Space Park S.	Yes	No	10/17/19	TNR059311
Mid-South Wire	1070 Visco Dr	Yes	No	10/4/19	TNR050712
Smitty's Auto Parts	1609 Bell Rd	Yes	No	10/1/19	TNR053717
N & S Inc.	361 Herron Dr	Yes	No	9/24/19	TNR050716
United Parcel Service - TCI	7525 Hickory Hills Ct	Yes	No	9/18/19	TNR053556
Truck Center, Inc. (Business Moved)	518 Hagan St	Yes	No	9/17/19	TNR056457
Southern Recycling (Metal Management Nashville, LLC)	1840 Linder Industrial Dr	Yes	No	9/13/19	TNR056650
Four Lane Auto Salvage Inc.	400 W Trinity Ln	Yes	No	9/4/19	TNR050223
Neely's Bend Inc.	1327 Neelys Bend Rd	Yes	No	8/23/19	TNR051976
West Nashville Auto Recycling Inc.	5604 Centennial Bv	Yes	No	8/16/19	TNR051899
LKQ Pick Your Part Southeast LLC	2030 Lucas Lane	Yes		8/14/19	TNR058938
Shrum Auto Salvage	1050 Old Buck Hill Road	Yes	No	8/8/19	
Pull-A-Part, LLC	7114 Centennial Boulevard	Yes	No	7/19/19	TNR056537
All State Auto Parts, Inc.	515 Nawakwa Trl	Yes	No	7/12/19	TNR056026
Howard Baer, Inc.	1301 Foster Ave	Yes	No	7/8/19	TNR053385
Abernathy Truck Salvage, Inc.	865 W Trinity Ln	Yes	No	7/3/19	TNR055940

Table 13A.1 – TMDL Monitoring Data for FY20

Date	Time	Water-shed	Site Name	Samplers (initials)	DO	Conductivity	Temp.	pH	Flow	E. coli	PCR huback
					mg/L	µS	°C		ft3/sec	MPN/100mL	
7/9/2019	9:09	Mill	Holt	VI SP	7.15	519	22	7.94	1.865	344.8	ND
7/10/2019	9:06	Mill	Holt	VL SP	6.78	566	22.3	7.82	0.557	217.8	0.3
7/16/2019	9:35	Mill	Holt	VL SP	7.45	595	21.7	8	0.809	387.3	ND
7/26/2019	9:13	Mill	Holt	VL SP	7.67	552	19.2	7.98	3.360	298.7	ND
7/29/2019	8:55	Mill	Holt	MB SP	7.2	583	20.8	7.99	0.508	328.2	0.8
8/29/2019	9:43	Mill	Holt	VL SP	7.53	583	19.5	7.75	*	261.3	ND
9/24/2019	10:10	Mill	Holt	VL SP	6.111	624	19.6	7.86	*	21.6	0.2
10/24/2019	9:56	Mill	Holt	VL SP	9.46	609	11.9	8.12	*	120.1	ND
12/4/2019	9:52	Mill	Holt	MB VL	10.27	530	11	8.04	*	198.9	ND
1/23/2020	9:53	Mill	Holt	MB SP KW	11.55	515	8.5	8.22	*	204.6	*
2/28/2020	9:59	Mill	Holt	VL SP	12.39	373.5	9.4	7.98	*	117.8	0.4
4/22/2020	8:33	Mill	Holt	VL SP	9.2	494	12.3	8.19	*	127.4	ND
5/26/2020	11:28	Mill	Holt	MB	7.79	537	19.2	8.03	*	152.9	*
6/15/2020	9:32	Mill	Holt	VL SP	6.78	543	18.3	7.21	*	248.1	*
11/26/2019	9:29	Mill	Holt	VL SP	10.37	556	11.2	8.3	*	42.6	ND
7/9/2019	9:29	Mill	Indian	VL SP	9.47	430.9	23.4	7.98	2.156	648.8	0.2
7/10/2019	9:28	Mill	Indian	VL SP	6.45	510	24.3	8.11	2.664	186	ND
7/16/2019	0:00	Mill	Indian	VL SP	6.56	519	23.9	8.07	1.216	148.3	ND
7/26/2019	9:34	Mill	Indian	VL SP	8.57	481	19.6	8.05	8.721	648.8	0.3
7/29/2019	9:05	Mill	Indian	MB SP	6.74	504	21.6	8.17	3.423	866.4	0.7
8/29/2019	10:03	Mill	Indian	VL SP	7.27	515	20.1	7.99	*	290.9	ND
9/24/2019	10:27	Mill	Indian	VL SP	4.74	5.5	20.1	7.94	*	161.6	0.5
10/24/2019	10:16	Mill	Indian	VL SP	8.19	561	10.7	8.31	*	113.7	0.2
11/26/2019	9:52	Mill	Indian	VL SP	11.44	470	9.7	8.61	*	111.2	0.6
12/4/2019	10:27	Mill	Indian	MB VL	11.07	423.4	8.9	8.4	*	228.2	ND
1/23/2020	10:10	Mill	Indian	MB SP KW	12.59	429.6	6.5	8.22	*	107.1	*
2/28/2020	10:16	Mill	Indian	VL SP	12.76	398.8	7.7	8.09	*	71.7	0.2
4/22/2020	8:52	Mill	Indian	VL SP	11.71	429.7	11.6	8.35	*	131.4	2.6
5/26/2020	11:56	Mill	Indian	MB	8.08	451.1	20.6	8.09	*	248.1	*
6/15/2020	9:56	Mill	Indian	VL SP	7.83	484	19.4	7.48	*	143.9	*
7/9/2019	10:25	Mill	Mill 3	VL SP	7.39	406.1	27.3	8.14	31.294	93.4	ND
7/26/2019	10:50	Mill	Mill 3	VL SP	6.91	537	22.7	8.13	77.241	190.4	ND
7/29/2019	10:16	Mill	Mill 3	MB SP	7.66	552	25.6	8.39	*	83.9	ND
8/29/2019	10:53	Mill	Mill 3	VL SP	8.51	537	24	8.15	*	73.3	0.1
9/24/2019	11:17	Mill	Mill 3	VL SP	5.84	523	23.8	8.08	*	157.3	0.1
10/24/2019	11:11	Mill	Mill 3	VL SP	9.55	564	14.1	8.55	*	77.1	ND
11/26/2019	10:39	Mill	Mill 3	VL SP	10.01	550	10.3	8.68	*	39.5	0.1
1/23/2020	10:56	Mill	Mill 3	MB SP KW	13.04	507	6.2	8.24	*	111.9	ND
2/28/2020	9:15	Mill	Mill 3	MB KT	11.6	471	8.5	8.14	*	325.5	0.7
5/26/2020	11:08	Mill	Mill 3	SP	7.02	436	23.9	7.75	*	387.3	*
7/10/2019	10:28	Mill	Mill 3	VL SP	6.19	517	28.1	8.21	19.206	46.5	0.6
7/16/2019	10:44	Mill	Mill 3	VL SP	6.41	533	26.2	8.17	14.499	48.8	0.5

Table 13A.1 – TMDL Monitoring Data for FY20 (Continued)

Date	Time	Water-shed	Site Name	Samplers (initials)	DO	Conductivity	Temp.	pH	Flow	E. coli	PCR huback
					mg/L	µS	°C		ft3/sec	MPN/100mL	
12/4/2019	11:30	Mill	Mill 3	MB VL	10.63	524	9.8	8.62	*	133.4	ND
4/22/2020	9:46	Mill	Mill 3	VL SP	10.42	466	15.6	8.3	*	436	ND
6/15/2020	10:51	Mill	Mill 3	VL SP	6.86	588	23.9	7.76	*	14.4	*
7/9/2019	8:41	Mill	Mill 5	VL SP	6.01	519	24.5	7.81	8.857	*	1.1
7/10/2019	8:48	Mill	Mill 5	VL SP	5.61	555	25.1	7.62	6.303	816.4	0.2
7/16/2019	9:08	Mill	Mill 5	VL SP	6.3	573	24	7.56	11.466	1986.3	ND
7/26/2019	8:39	Mill	Mill 5	VL SP	8.12	561	20.4	7.78	34.373	1299.7	ND
7/29/2019	8:45	Mill	Mill 5	MB SP	6.34	568	22.8	8.01	17.637	816.4	0.4
8/29/2019	9:25	Mill	Mill 5	VL SP	6.8	559	20.7	7.43	*	1299.7	0.3
9/24/2019	9:54	Mill	Mill 5	VL SP	5.02	560	21.5	7.44	*	686.7	0.5
11/26/2019	9:15	Mill	Mill 5	VL SP	10.78	543	10.7	8.33	*	142.1	0.3
12/4/2019	10:07	Mill	Mill 5	MB VL	11.52	497	9.5	8.12	*	224.7	ND
1/23/2020	9:40	Mill	Mill 5	MB SP KW	13.12	483	6.6	8.14	*	148.3	*
2/28/2020	9:39	Mill	Mill 5	VL SP	12.71	437	7.9	7.86	*	121.1	0.8
4/22/2020	8:17	Mill	Mill 5	VL SP	10.53	452.2	13.1	8.02	*	344.1	0.8
5/26/2020	11:42	Mill	Mill 5	MB	8.8	462	21.9	8.06	*	1119.9	*
6/15/2020	9:15	Mill	Mill 5	VL SP	6.71	500	20.1	7.48	*	1299.7	*
10/24/2019	9:36	Mill	Mill 5	VL SP	9.5	606	12.1	8.03	*	290.9	ND
7/9/2019	10:42	Mill	Sorghum	VL SP	7.7	493	23.4	7.92	2.960	*2419.6	0.5
7/10/2019	10:59	Mill	Sorghum	VL SP	7.05	567	23.9	8.11	1.969	1046.2	0.5
7/16/2019	11:06	Mill	Sorghum	VL SP	7.35	599	23.5	8.09	1.257	21430	ND
7/26/2019	10:27	Mill	Sorghum	VL SP	8.15	532	20.7	8.04	0.879	204.6	1.8
7/29/2019	10:28	Mill	Sorghum	MB SP	7.27	548	22.6	8.24	1.242	456.9	1.9
7/30/2019	9:36	Mill	Sorghum	*	6.82	575	23	8	*	>2419.6	6.7
8/29/2019	11:07	Mill	Sorghum	VL SP	7.42	507	20.7	8.02	*	2419.6	1.3
9/24/2019	11:28	Mill	Sorghum	VL SP	5.91	661	21.3	7.99	*	104.6	0.4
10/24/2019	11:27	Mill	Sorghum	VL SP	8.75	608	13.1	8.36	*	770.1	0.4
11/26/2019	10:46	Mill	Sorghum	VL SP	10.32	495	11.9	8.25	*	549.3	ND
12/4/2019	11:14	Mill	Sorghum	MB VL	10.75	478	11.2	8.39	*	1046.2	0.3
1/23/2020	11:06	Mill	Sorghum	MB SP KW	12.47	472	8.2	8.25	*	547.5	1.3
2/28/2020	9:33	Mill	Sorghum	MB KT	11.68	447.8	8.8	8.16	*	387.3	ND
4/22/2020	10:00	Mill	Sorghum	VL SP	10.93	459	13	8.25	*	201.4	0.9
5/26/2020	11:20	Mill	Sorghum	SP	6.86	496	20.8	7.85	*	1203.3	*
6/15/2020	11:03	Mill	Sorghum	VL SP	6.78	600	19.6	7.75	*	658.6	*
7/9/2019	9:47	Mill	Turkey	VL SP	5.75	287	23.6	7.57	0.187	517.2	0.7
7/10/2019	9:45	Mill	Turkey	VL SP	4.71	472	24	7.68	0.200	172.3	ND
7/16/2019	10:09	Mill	Turkey	VL SP	5.26	597	23.8	7.63	*	51.2	0.3
7/26/2019	9:48	Mill	Turkey	Vl SP	9.45	519	20.2	7.6	0.564	325.5	ND
7/29/2019	9:26	Mill	Turkey	MB SP	3.71	500	22.3	7.68	*	108.1	1
8/29/2019	10:14	Mill	Turkey	VL SP	1.96	503	19.9	7.75	*	1413.6	0.2
10/24/2019	10:32	Mill	Turkey	VL SP	5.7	582	11.4	8.25	*	1413.6	1.4
11/26/2019	10:05	Mill	Turkey	VL SP	10.44	519	10	8.7	*	30.5	0.4

Table 13A.1 – TMDL Monitoring Data for FY20 (Continued)

Date	Time	Water-shed	Site Name	Samplers (initials)	DO	Conductivity	Temp.	pH	Flow	E. coli	PCR huback
					mg/L	µS	°C		ft3/sec	MPN/100mL	
12/4/2019	10:40	Mill	Turkey	MB VL	10.74	486	10	8.15	*	133.3	ND
1/23/2020	10:24	Mill	Turkey	MB SP KW	12.38	494	6.7	8.06	*	75.4	*
2/28/2020	10:30	Mill	Turkey	VL SP	12.74	442.9	7.9	8.27	*	193.5	0.2
4/22/2020	9:06	Mill	Turkey	VL SP	11.52	476	12.3	8.38	*	106.7	0.6
5/26/2020	12:07	Mill	Turkey	MB	3.72	426.4	20.4	8.03	*	259.5	*
6/15/2020	10:10	Mill	Turkey	VL SP	2.68	554	19	7.46	*	8.6	*
7/9/2019	10:03	Mill	Whittemore	VL SP	8.9	432.3	22.1	8.02	3.109	613.1	ND
7/10/2019	10:15	Mill	Whittemore	VL SP	8.36	519	22.7	8.04	1.730	517.2	0.3
7/16/2019	10:23	Mill	Whittemore	VL SP	7.86	633	22.3	8.16	2.586	686.7	ND
7/26/2019	10:18	Mill	Whittemore	VL SP	8.85	589	20	8.11	4.547	325.5	0.5
7/29/2019	9:52	Mill	Whittemore	MB SP	8.54	643	21.3	8.32	3.945	549.3	1.5
8/29/2019	10:26	Mill	Whittemore	VL SP	8.66	632	19.9	8.06	*	416	ND
9/24/2019	10:59	Mill	Whittemore	VL SP	6.64	627	20.8	7.99	*	225.4	0.2
10/24/2019	10:49	Mill	Whittemore	VL SP	10.62	614	13.1	8.37	*	307.6	0.7
11/26/2019	10:20	Mill	Whittemore	VL SP	11.06	573	12.1	8.64	*	167	ND
12/4/2019	10:55	Mill	Whittemore	MB VL	10.73	572	11.7	8.17	*	260.3	ND
1/23/2020	10:38	Mill	Whittemore	MB SP KW	12.78	553	9.4	8.35	*	307.6	ND
2/28/2020	9:58	Mill	Whittemore	MB KT	12.4	519	9.8	8.27	*	225.4	ND
4/22/2020	9:27	Mill	Whittemore	VL SP	11.67	525	13	8.29	*	191.8	*
5/26/2020	10:46	Mill	Whittemore	SP	9.01	532	19	7.43	*	920.8	*
6/15/2020	10:28	Mill	Whittemore	VL SP	7.95	479	19.3	7.91	*	816.4	*

* indicates parameter not required

Table 13A.2 - SWMP Quantifiable Statistics

Categories	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20
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
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
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
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
# 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
# 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
# of Grading Permits Issued	252	239	165	109	121	135	142	138	318	276	254	262	311	327	283
# 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
# 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
# of Stormwater Enforcements (NOVs and SWOs)	283	190	342	188	123—	148	94	96	168	128	116	159	112	125	87

Table 13A.3 – Ambient Monitoring Data for the FY20 Reporting Period

Date	Time	Site Name	Samplers (initials)	DO	DO	Cond	Temp. C	pH	Flow	*E. coli*	BOD5	COD	NH3	TKN	NO3 +NO2	Diss. P	Total P.	Pb	Zn	Cr	Cu	Ni	Oil and Grease	TSS	TDS
				%	mg/L	uS	C		ft3/sec	mpn	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	mg/L
8/15/2018	7:12	Trip Blank	MGB VL	*	*	*	*	*	*	*	ND	*	ND	ND	ND	ND	ND	ND	4.149	ND	0.595	0.172	ND	ND	1
8/15/2018	11:08	Stones 2	MGB VL	55.0	4.57	288.7	24.6	7.98	10.70	43.2	ND	*	ND	0.5	ND	0.02	0.05	0.665	4.965	0.818	1.761	1.297	ND	14	183
8/15/2018	9:04	Harpeth 2	MGB VL	71.8	5.75	433.3	26.4	7.90	97.73	13.2	ND	*	ND	0.5	0.433	0.41	0.49	0.172	2.496	0.226	0.631	0.449	ND	28	272
9/19/2018	8:20	Harpeth 2	MB SP	68.1	5.62	500	25.0	8.01	43.00	29.2	ND	*	ND	ND	1.134	0.39	0.44	0.434	4.11	0.412	1.316	1.04	ND	12	298
9/19/2018	9:53	Stones 2	MB VL SP	71.4	5.97	262.4	24.4	7.83	119.00	4.1	ND	*	ND	ND	0.683	0.01	0.05	0.144	2.571	0.154	0.569	0.409	ND	1	142
9/19/2019	8:20	Field Blank	MB SP	*	*	*	*	*	*	*	ND	*	ND	ND	ND	0.01	ND	ND	3.525	ND	0.581	0.181	ND	ND	ND
5/8/2019	8:17	Harpeth 2	MB SP	85.2	7.76	389.5	20.0	8.03	296.01	75.4	ND	ND	0.145	0.25	0.788	0.29	0.35	0.191	3.986	ND	1.176	0.487	ND	12	232
5/8/2019	8:17	Harpeth 2 (duplicate)	MB SP	83.6	7.60	389.9	20.0	7.95	*	77.6	ND	ND	ND	0.25	0.789	0.28	0.35	0.178	4.314	ND	0.917	0.521	ND	11	234
5/8/2019	9:19	Stones 2	MB SP	53.2	5.11	373.4	16.8	7.79	92.60	39.3	ND	15	ND	0.15	0.268	0.05	0.04	ND	3.79	ND	0.776	0.503	ND	3	237
6/4/2019	8:40	Harpeth 2	VL SP	76.4	6.51	448.4	24.1	8.20	47.81	35	2	17	ND	0.49	0.306	0.3	0.48	0.388	5.341	ND	1.314	0.87	ND	13	276
6/4/2019	10:03	Stones 2	VL SP	71.3	6.41	300.3	20.3	7.85	-57.30	119	ND	21	ND	0.32	ND	ND	0.05	ND	3.409	ND	0.887	0.459	ND	2	181

Table 13A.4 – Benthic Monitoring Data for TMDL Streams during FY20 Reporting Period

Station ID	Site Name	Date	Ecoregion	QC	Habitat Score	Collection	TMI	HUC	X Coordinate	Y Coordinate
MILL021.2DA	Mill Creek 5	7/31/2019	71h		162	SQKICK	38	TN05130202007_5000	-86.69290	35.99530
COLLI000.4DA	Collins Creek	8/13/2019	71h		131	SQKICK	14	TN05130202007_0600	-86.66500	36.04810
DRY001.1DA	Dry Creek	8/20/2019	71h		115	SQKICK	30	TN05130202027_2000	-86.70570	36.28440
NEELE000.4DA	Neeleys	8/22/2019	71h		109	SQKICK	26	TN05130202212_0100	-86.70710	36.25450
GIBSO001.3DA	Gibson Creek	8/22/2019	71h		121	SQKICK	30	TN05130202212_1000	-86.72320	36.25190
WHITT001.0DA	Whittemore Branch	9/4/2019	71i		115	SQKICK	24	TN05130202007_1200	-86.68390	36.05220
MILL009.6DA	Mill Creek 3	9/5/2019	71h		156	SQKICK	36	TN05130202007_3000	-86.68520	-86.68540
INDIA000.4DA	Indian Creek	9/11/2019	71h		133	SQKICK	32	TN05130202007_0800	-86.67830	36.01420
SORGH000.3DA	Sorghum Branch	9/17/2019	71h		119	SQKICK	14	TN05130202007_1300	-86.70090	0.00000
HOLT000.4DA	Holt Creek	9/20/2019	71h		126	SQKICK	14	TN05130202007_1100	-86.70850	36.01040
OWL000.1DA	Owl Creek	9/27/2019	71i		131	SQKICK	40	TN05130202007_0900	-86.69960	36.00190
DRY001.1DA	Dry Creek	3/9/2020	71h		133	SQSH	18	TN5130202027_2000	-86.70580	36.28440
DRY001.1DA	Dry Creek	3/9/2020	71h	Duplicate	137	SQSH	16	TN5130202027_2000	-86.70580	36.28440
GIBSO001.3DA	Gibson Creek	3/18/2020	71h		156	SQKICK	10	TN130202212_1000	-86.72290	36.25200
NEELE000.4DA	Neeleys Branch	5/20/2020	71h		102	SQKICK	12	TN05130202212_0100	-86.70790	36.25510
MILL021.2DA	Mill Creek 5	6/2/2020	71i		141	SQKICK	38	TN05130202007_5000	-86.69270	35.99520
HOLT000.4DA	Holt Creek	6/4/2020	71h		133	SQKICK	28	TN05130202007_1100	-86.70850	36.01040
INDIA000.4DA	Indian Creek	6/8/2020	71h		134	SQKICK	34	TN05130202007_0800	-86.67830	36.01420
COLLI000.4DA	Collins Creek	6/11/2020	71h		108	SQKICK	22	TN05130202007_0600	-86.66500	36.04780
SORGH000.3DA	Sorghum Branch	6/17/2020	71h		96	SQKICK	18	TN05130202007_1300	-86.70070	36.09530
OWL000.1DA	Owl Creek	6/22/2020	71i		127	SQKICK	30	TN05130202007_900	-86.69960	36.00190
WHITT001.0DA	Whittemore Branch	6/24/2020	71i		118	SQKICK	38	TN05130202007_1200	-86.68400	36.05210
MILL009.6DA	Mill Creek 3	6/29/2020	71h		146	SQKICK	30	TN05130202007_3000	-86.68520	36.09120
MILL009.6DA	Mill Creek 3	6/29/2020	71h	Duplicate	143	---	---	TN05130202007_3000	-86.68510	36.09110

4.0 Supporting Program Data

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

2019 National Phase MS4 Program Award from the Water Environment Federation

National Municipal Stormwater and Green Infrastructure Awards Program

The Water Environment Federation honors
Metro Nashville Water Services – Stormwater Division for its outstanding
stormwater management program and commitment to installing green infrastructure.

Metro Nashville Water Services – Stormwater Division
has been awarded special winner of:

Overall Highest Score, Phase I

In addition, you have been also categorized as the following:

Innovation: Gold Level | Program Management: Gold Level

Eileen J. O'Neill, Ph.D.
Executive Director
Water Environment Federation

Water Environment Federation
the water quality people

Article from Worldwater Stormwater Management announcing the 2019 National Phase 1 MS4 Program Award to Nashville from the Water Environment Federation

MS4 Awards

Recognizing stormwater management achievements

The Water Environment Federation (WEF) Stormwater Institute celebrates five years of the National Municipal Stormwater and Green Infrastructure Awards, which recognizes United States (US) communities for high-performing stormwater management efforts. **Mark Doneux** of the Capitol Region Watershed District and **Rebecca Arvin-Colon** of WEF discuss the achievements of award-winning communities, including the 2019 overall winners: Metro Water Services, Nashville, Tennessee, and the City of Alexandria, Virginia.

In 2015, WEF launched the National Municipal Stormwater and Green Infrastructure Awards program, (MS4 Awards) through a cooperative agreement with the US Environmental Protection Agency (EPA). Housed within the WEF Stormwater Institute, MS4 Awards recognizes high-performing communities that are regulated under EPA's National Pollutant Discharge Elimination System (NDPES) Phase I and Phase II Municipal Separate Storm Sewer System (MS4) permit program. The winners are those communities that exceed regulatory requirements using the most innovative, effective, and cost-efficient approaches to stormwater program management.

According to the EPA, Phase 1 communities have populations of 100,000 or more, which cover medium and large cities and counties. Phase II communities include smaller urbanized areas and non-traditional MS4s such as hospitals, departments of transportation, and public universities.

Over the past five years, the MS4 Awards program received 100 applications from regulated entities within 32 US states and the District of Columbia – indicating the nationwide interest and significance of this awards program. A diverse work team, comprised of volunteers from WEF and partner organizations, review and designate communities as either bronze, silver, or gold level in two categories: program management and innovation. In addition to assigning each applicant comparative benchmarking levels, the work team selects EPA Phase I and Phase II community winners in program management, innovation, and overall highest score.

Applicant communities showcase adaptability and innovation, by tailoring the NPDES program – a broad, US stormwater regulatory framework – and making it effective at their geographic and water resource scale.

2019 winners

The winners of the fifth annual MS4 Awards program with the highest overall score include the Phase I Metro Water Services in Nashville, Tennessee as well as the Phase II City of Alexandria, Virginia.

The Phase I community selected as most innovative is the Louisville and Jefferson County Metropolitan Sewer District, Kentucky; while the Capitol Region Watershed District in the state of Minnesota won the award for most innovative Phase II community.

Program management winners include the Phase I communities of Anne Arundel County, Maryland, and the Phase II Rogue Valley Sewer Services, Oregon.

Each of the overall, innovation, and program

Article from Worldwater Stormwater Management announcing the 2019 National Phase 1 MS4 Program Award to Nashville from the Water Environment Federation (Continued)

management award winners from the past five years include 13 Phase I communities from 10 states and 8 Phase II communities from 8 states.

Phase I Winners

2015
- Overall Winner: Charlotte Stormwater Services, North Carolina
- Program Management (Mgt): Montgomery County, Department of Environmental Protection, Maryland
- Innovation: City of Santa Monica, California; and City of Tacoma, Washington

2016
- Overall Winner: Santa Clara Valley Urban Runoff Pollution Prevention Program, California
- Program Mgt: City of Austin, Watershed Protection Department, Texas
- Innovation: Jefferson Parish, Environmental Affairs, Louisiana

2017
- Overall Winner: City of Austin, Watershed Protection Department, Texas
- Program Mgt: City of Alpharetta, Georgia
- Innovation: Boston Water and Sewer Commission, Massachusetts

2018
- Overall Winner: Lexington-Fayette Urban County Government, Division of Water Quality, Kentucky
- Program Mgt: Lexington-Fayette Urban County Government, Division of Water Quality, Kentucky
- Innovation: Louisville and Jefferson County Metropolitan Sewer District, Kentucky

2019
- Overall Winner: Metro Water Services, Nashville, Tennessee
- Program Mgt: Anne Arundel County, Maryland
- Innovation: Louisville and Jefferson County Metropolitan Sewer District, Kentucky

Phase II Winners

2015
- Overall Winner: City of Fairbanks, Alaska
- Program Mgt: Lafayette Consolidated Government, Louisiana
- Innovation: City of Alexandria, Virginia

2016
- Overall Winner: Capitol Region Watershed District, St. Paul, Minnesota
- Program Mgt: Kitsap County, Public Works, Washington
- Innovation: City of Auburn, Alabama

2017
- Overall Winner: Capitol Region Watershed District, St. Paul, Minnesota
- Program Mgt: City of Alexandria, Virginia
- Innovation: Lake Havasu City, Arizona

2018
- Overall Winner: City of Alexandria, Virginia
- Program Mgt: City of Auburn, Alabama
- Innovation: City of Alexandria, Virginia

Rogue Valley Sewer Services Stormwater Manager teaching residents about Low Impact Development stormwater management techniques. Photo by RVSS
Opposite: Four-Mile Run Wetland Reserve in Alexandria, Virginia. Photo by City of Alexandria

2019
- Overall Winner: City of Alexandria, Virginia
- Program Mgt: Rogue Valley Sewer Services, Oregon
- Innovation: Capitol Region Watershed District, Minnesota

Highlights of 2019 winners

Phase I

The Phase I winner of the fifth annual MS4 Awards program with the highest overall score was **Metro Water Services in Nashville, Tennessee.**

Metro Nashville's MS4 permit program began on July 1, 1996, when Metropolitan Nashville and Davidson County (Metro) was issued its first Phase I MS4 permit. To meet those requirements, the Metro Stormwater NPDES Office was created within the Department of Public Works in 1997. In 2002, the NPDES Office (and all Stormwater Operations) was moved to Metro Water Services to better align Metro's other water resource programs. Over its 23 years of MS4 permit compliance, Metro has developed a comprehensive program for one of the larger MS4 permit jurisdictional areas in the nation – approximately 1,295 square kilometers (500 square miles) – which endeavors to meet and exceed MS4 permit conditions to both protect the community and local water resources. The Metro MS4 program has attempted to be a leader via the establishment of the following programs:
- Creation of strong local stormwater regulations that strive to protect Nashville's waterways; development of an aggressive construction site inspection oversight program that has greatly reduced sediment loss from active construction sites
- Development of water quality monitoring programs that utilize various innovative means to perform better pollution source tracking of identified stream pollutants – which has led to the delisting of various impaired 303(d) stream segments over time, as pollution sources were removed
- Development of a robust post-construction Stormwater Control Measure (SCM) inspection and maintenance oversight program that serves to make sure SCMs remain functional over time
- Development and implementation of a multifaceted public education program (as it is better to stop pollution issues before they occur)
- Implementation of an Illicit Discharge Detection & Elimination (IDDE) program that has served to prevent tremendous amounts of pollution from entering Nashville waterways.

Metro's supportive leadership – including the Mayor's Office, Metro Council, and Metro Water Services Administration staff – has created a program that is viewed holistically as a leading MS4 program. Metro's approach is to be diligent in meeting all MS4 permit provisions while focusing on the ultimate regulatory goal: achieving clean water and water resources for the community. An example of this mentality can be seen in the early 2000s when Metro stakeholders realized the importance of no-disturb stream riparian buffers by working to make Metro one of the first municipalities in Tennessee to require no-disturb buffers on land development sites. This policy led the way within the state prompting other jurisdictions to follow suit.

Similarly, as the new runoff reduction and pollution prevention low impact development (LID) regulations were being promoted by federal and state regulators in Metro's 2011 draft MS4 permit, a proactive incentive program was initiated by Metro to motivate developers to pursue LID stormwater designs several years prior to the 2012 LID implementation date mandated by the eventually issued MS4 permit. That effort served to address much uncertainty and opposition regarding the utilization of LID.

Likely, Metro's single most-important initiative was the adoption of the Stormwater User Fee in 2009, which provides a dedicated funding source for various stormwater activities that serve to meet MS4 Permit requirements and protect Metro watersheds and water resources.

The Program Management winner for Phase I Community was **Anne Arundel County, Maryland.**

Anne Arundel County's Watershed Protection and Restoration Program (WPRP) was created in late 2013, with the passage of the county's local Watershed Protection and Restoration Fee. The fee is a dedicated funding source for stormwater management planning, implementation, and maintenance — aimed at ensuring that the county is able to meet its State and Federal clean water mandates and improve the health of local waterways.

The WPRP is responsible for coordinating Anne Arundel County's efforts to satisfy the terms of its MS4 permit, issued by the Maryland Department of the Environment. The terms include providing stormwater management review of new development projects, inspecting and maintaining existing stormwater facilities across the county, monitoring illicit discharges into the county's stormwater system, providing public education to reduce stormwater pollutants, and undertaking restoration efforts to reduce pollution across the county.

The creation of the WPRP has allowed

Nashville Website Article Announcing the 2019 National Phase MS4 Program Award from the Water Environment Federation

Nashville.gov | Metro Government of Nashville & Davidson County, Tennessee

Nashville Stormwater Program Receives Top Recognition

8/7/2019

Program Selected as One of Three Winners

Metro Water Services' National Pollution Discharge Elimination System (NPDES) program will be formally recognized as the Best Phase 1 Organization by the Stormwater Congress at the Water Environment Federation's Annual Technical Exhibition and Conference (WEFTEC) in Chicago, Illinois on September 23, 2019. The 2019 Water Environment Federation (WEF) National Municipal Stormwater and Green Infrastructure Awards Program selected Nashville's NPDES program for the award and categorized the program as Gold Level in Innovation and Gold Level in Project Management.

Metro Water Services' NPDES program implements specific pollution prevention programs designed to improve the quality of Metro's waterways, particularly as it relates to improving the quality of discharges from Metro's Municipal Separate Storm Sewer System (MS4). The NPDES program maintains MS4 permit compliance, while simultaneously achieving water quality improvements in every Metro stream. It is Metro's long-term goal to reduce pollutant loadings from the MS4 as much as possible so as to remove from the federal 303(d) list a majority of the streams that are indicated as being impaired by MS4 runoff. The Clean Water Act Section 303(d) is a list of waterways that are impaired and threatened by pollution.

Nashville's NPDES program works with developers, construction sites, commercial businesses, and residents to educate about, inspect for compliance, and enforce Stormwater Management regulations.

About the Award

The National Municipal Stormwater and Green Infrastructure Awards program, developed and introduced in 2015 by the Water Environment Federation through a cooperative agreement with the U.S. Environmental Protection Agency (EPA), was established to recognize high-performing regulated MS4s. Award winners meet and exceed regulatory requirements in innovative ways that are effective and cost-efficient.

###

Back

Example of one of MWS Stormwater Social Media Posts

MWS NPDES Mailout to Ewing Creek Watershed Residents

METRO WATER SERVICES

Use Fertilizer and Other Lawn Care Products Responsibly!

Excessive use of fertilizers and pesticides can lead to excess nutrients and "dead zones" in our waterways. Ewin Creek is experiencing this harmful effect, due to the improper use of fertilizers in the surrounding neighborhood. When applying chemicals, remember to use sparingly and according to directions!

Please use lawn chemicals properly to help keep our waterways clean.

Some helpful tips to help the environment and your lawn:

- Never apply chemicals if rain is forecasted within the next 24 hours
- Never apply lawn chemicals on bare or eroded areas
- Never apply chemicals near water sources or storm drains

For more information on proper lawn care, visit Nashville.gov/Stormwater and to report pollution call (615) 313-PURE or email StormwaterQuality@nashville.gov

Did you know...

Stormwater runoff from your property ends up in local streams and creeks? Pollutants have been identified in local streams in your neighborhood and we need your help to keep our waters clean!

METRO WATER SERVICES

For more information visit:
www.nashvile.gov/stormwater
To report pollution:
Call: (615) 313-PURE
Email: StormwaterQuality@nashville.gov

Metro Water Services- Stormwater

1607 A County Hospital Road
Nashville, TN 37218

PLEASE PLACE STAMP HERE

Various Stats Tracked for the Water Quality Improvement Project with the Cumberland River Compact

MWS/CRC Partnership Agreement	Current Project Period			Agreement 2			Agreement 1	Total of All Projects	
Data as of: 08/05/2020	05/06/20 - 05/05/25			3/1/15-2/28/20			3/1/09-3/1/15	3/12/09-Present	
Partnership Progress Summary Table	W-QIP			W-QIP			SEP	Total	
SEP Goal Criteria	W-QIP Goal	Current # Done	% Done	W-QIP Goal	Current # Done	% Done	SEP Total	Completed to date	SEP Goal Criteria
Facilitate 50 rain gardens being built/yr for 5 years	50	6	12%	250	257	103%	300	563	Facilitate 50 rain gardens being built/yr for 5 years
Facilitate planting of 12,500 trees 1/2" or greater	2500	534	21%	12,500	27,606	221%	12,486	40,626	Facilitate planting of 12,500 trees 1/2" or greater
Educate 10,000 Davidson County residents about green infrastructure	15000	2214	15%	12,500	44,005	352%	69,115	115,334	Educate 10,000 Davidson County residents about green infrastructure
Recreation Opportunities on the River (People engaged)	10000	0	0%	12,500	22,864	183%	NA	22,864	Recreation Opportunities on the River (People engaged)
Facilitate the adoption of at least 25 stream segments	25	2	8%	25	69	276%	18	87	Facilitate the adoption of at least 25 stream segments
Remove impermeable pavement (reporting square footage removed)	NA	0	NA	NA	3,000	NA	0	3,000	Remove impermeable pavement (reporting square footage removed)
Stream Cleanup Requests Received	NA	2	NA	NA	NA	NA	NA	2	Stream Cleanup Requests Received
Stream Cleanup Events Held	160	19	12%	NA	139	NA	NA	158	Stream Cleanup Events Held
Stream Banks Stabilized (linear ft)	250	105	42%	NA	NA	NA	NA	105	Stream Banks Stabilized (linear ft)
start date =				5/6/2020					
end date =				5/5/2025					

Example Meeting Minutes from the Stormwater Management Committee during FY20

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 7, 2020
* * * * * * * * * * * *
8:15 AM
Place

Meeting took place via Teleconference and aired live on Comcast channel 3. A livestream of the meeting was simulcast on Nashville.gov with a remote station set up at the Sonny West Conference Center (700 2nd Avenue South) for anyone who was unable to submit their comments electronically and wished to make comments in that manner. Social distance recommendations were implemented at the remote station.

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. Jesus Gomez-Velez, P. E.
Mr. Roy Dale, 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. with roll call of committee members. Mr. Galbreath and Ms. Theresa Costonis (Metro Legal) stated that the first order of business would be a motion to determine under the Governor's Executive Order #16 that the meeting agenda constitutes essential business of this Board and meeting electronically is necessary to protect the health, safety, and welfare of Tennesseans in light of the COVID-19 outbreak. Mr. Roy Dale moved for approval. Ms. Carrie Stokes seconded and the Board approved without objection.

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 FY20 (Continued)

II. APPROVAL OF MAY 7, 2020 MEETING MINUTES & DECISION LETTERS

A motion was made by Ms. Anna Maddox and seconded by Mr. Roy Dale for approval of the March 5, 2020 minutes and decision letters. Ms. Carrie Stokes, Ms. Maddox, Mr. Dale, Mr. Jesus Gomez-Velez, and Mr. Dodd Galbreath voted in favor of the motion. The motion carried.

III. STORMWATER MANAGEMENT COMMITTEE AGENDA

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

1. **202000001**
   River North – Phase 1
   520 Cowan Street — APN 082060A00200CO & 08210000500
   Inspector: (Denice Johns) — CD-05 (Sean Parker)

Case was previously deferred on February 6, 2020

Case was previously deferred on March 3, 2020

APPLICANT'S REQUEST: Is to allow the following:

1. Temporary uncompensated fill in the floodplain until such time that each lot becomes developed within seven-year period. (Postpone the compensating cut that is required to offset the fill).

APPELLANT: Monroe Infrastructure, LLC
REPRESENTATIVE: Civil Site Design Group, PLLC (Kevin Gangaware)
COMMENTS:
SW STAFF: Stormwater staff requests that the applicant provide floodplain storage compensation in accordance with Stormwater Management Manual Volume 1 Chapter 5.5.6 paragraph 1 that states "All dredged or cut materials shall be removed from the site before fill materials can be delivered, unless all fill material is generated onsite".
CODES: No comment provided.
PLANNING: Approved
GREENWAYS: Parks requests, the applicant assures that in the final grading and drainage plan for this project, that greenway connectivity and construction from the north to south limits of the site, as well as from the greenway to the proposed pedestrian and bicycle infrastructure and proposed buildings within the development, can be accomplished per ADA and Metro greenway standards, given the grading and drainage plans submitted with this variance request and any anticipated riverbank stabilization needs.

Example Meeting Minutes from the Stormwater Management Committee during FY20 (Continued)

Stormwater Management Committee
May 7, 2019
Page 3

Mr. Kevin Gangaware (Civil Site Design Group) spoke on behalf of the request at the location of 520 Cowan Street. Mr. Gangaware stated that the variance request was to allow work to take place in the buffer of the Cumberland River. The variance was a request to temporarily delay compensating cut required because of constructing new roads, which would be built above the 100-year flood plain elevation.

Mr. Gangaware went further to state that there was a plan in place if the development activity stalled. After seven years, if the remaining compensatory floodplain storage had not been provided, the client would take any necessary actions to remove the remaining quantity of materials to bring the site into compliance.

After discussion during the Executive Session of the Committee on May 7, 2020 and review of the information presented Mr. Roy Dale made a motion to approve with the following standard Conditions # 1-2 and Conditions # 3-7. Ms. Anna Maddox seconded the motion. Ms. Carrie Stokes, Mr. Dodd Galbreath, Mr. Dale, Mr. Jesus Gomez-Velez, and Ms. Maddox voted in favor of the motion. The motion carried.

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 #202000001), 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 7, 2021. 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.

3. Upon completion of construction, the Appellant shall provide MWS Stormwater staff with a set of Asbuilts showing the actual amount of fill in comparison to the amount of fill that is on the site today.

4. The Appellant shall provide a plan of stabilization along the riverbank in the confinement of Phase 1 and work with Greenways on a plan of mitigation that will need to be completed within the seven-year timeframe in which the variance is being granted.

5. The Appellant shall provide a note to the recorded plat stating each parcel is required to have at least 7200 cubic yards of compensating floodplain storage per acre.

6. There shall also be a restrictive covenant or document recorded so that anyone purchasing these parcels is aware of the obligations and responsibilities that are in place per this variance ruling.

Example Meeting Minutes from the Stormwater Management Committee during FY20 (Continued)

Stormwater Management Committee
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Page 4

7. The Appellant shall work out legal arrangements to inform future purchasers of all rulings. This may include a restricted covenants document, long term maintenance plan, and/or a bond. The documents will be recorded against each deed as necessary.

2. 202000003
Old Franklin Subdivision
0 Old Franklin Road — APN 17400009600
Inspector: (Shawn Herman) — CD-33 (Antoinette Lee)

Single Family Residential

APPLICANT'S REQUEST: Is to allow the following:
1. Removal of a total of 0.43 acres of wetlands and associated buffers to construct a single-family residential development.

APPELLANT: ECG Acquisitions, LLC
REPRESENTATIVE: Mary McGowan (Kimley-Horn & Associates)
COMMENTS:
SW STAFF: No comment
CODES: No comment provided.
PLANNING: Site is zoned RS10, defer to Stormwater for review.
GREENWAYS: Parks defers to the decision of the Stormwater Management Committee.

Ms. Mary McGowan (Kimley-Horn & Associates) and Michael Lamping (ECG Acquisitions, LLC), spoke on behalf of the request at the location of Old Franklin Road and Cane Ridge Road in Antioch, TN. It was presented to the committee that the property is L-shaped with an existing pond occupying the northern portion of the "L". South of the location is a steep hill preventing development of the southwest corner. The natural boundaries push the developable area of the site east, where three wetlands exist on the property. If the wetlands stated and their buffers are left undisturbed, a significant area would be needed for grading due to relatively low wetland elevations.

The project includes both on-site and off-site mitigation, which includes:
1) 60-foot buffers, in lieu of the required 30-foot buffers, provided at all existing streams and ponds within the property.
2) Protection of 0.36 acres of wetlands and 0.81 acres of wetland buffers.
3) Low Impact Development, including 82.4% post-development runoff reduction and oversized bioretention areas.
4) The purchase of 0.86 compensatory wetland mitigation credits from Swamp Road II mitigation bank.

Example Meeting Minutes from the Stormwater Management Committee during FY20 (Continued)

After discussion during the Executive Session of the Committee on May 7, 2020 and review of the information presented Ms. Carrie Stokes made a motion to approve with the following standard Conditions # 1-2. Ms. Anna Maddox seconded the motion. Ms. Stokes, Mr. Dodd Galbreath, Mr. Roy Dale, Mr. Jesus Gomez-Velez, and Ms. Maddox voted in favor of the motion. The motion carried.

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 #202000003), 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 7, 2021. 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.

3. 202000005
MSUD – Madison Suburban Utility District APN: 05180000900
936 Gallatin Pike CD-08 (Nancy VanReece)
Inspector: (Boots O'Hara)

Case previously approved March 1, 2018 under case # 201700032 to allow the following:
1) Disturbance of floodway, Zone 1, and Zone 2 floodway buffers of Gibson Creek to allow for construction of at-grade parking facilities, placement of BMP's and construction of sidewalks, 2) To allow 607 cubic yards of cut below the 2-yr flood elevation, 3) Continuous mowing and maintenance and 4) Waiver of buffer signage.

Case returning before the committee for the following reasons: 1) As per condition #2 of the decision letter dated March 20, 2018; variance expired March 1, 2019 and 2) Plans previously approved by the Stormwater Management Committee have changed.

APPLICANT'S REQUEST: Is to allow the following:
1. Disturbance of the Gibson Creek floodway, Zone 1 buffer, and Zone 2 buffer to remove impervious surfaces, install impervious walking trails, provide floodplain storage, and construct sidewalks.
2. Request not to be required to have Registered Landscape Architect stamp the mitigation plan.
3. Request to continuously mow and maintain the buffer.
4. Request for modified or waived buffer signage.
5. Request to allow 46 cubic yards of cut below the 2-yr flood elevation of 438.8' NAVD 88.

Example Meeting Minutes from the Stormwater Management Committee during FY20 (Continued)

Stormwater Management Committee
May 7, 2019
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APPELLANT: MSUD – Madison Suburban Utility District
REPRESENTATIVE: JVE (Jeff Vaughan)
COMMENTS:
SW STAFF: Staff does not feel adequate mitigation has been provided.
CODES: No comment provided.
PLANNING: Site is zoned CS, defer to Stormwater for review.
GREENWAYS: Parks requests that the applicant coordinate with Metro Greenways and Open Space Division to design a multi-purpose paved trail per Metro Greenways Design Standards.

Mr. Jeffery Vaughan (JV Engineering Inc.) spoke on behalf of the request at the location of 936 Gallatin Pike Madison, TN. Mr. Vaughan stated that Madison Suburban Utility District (MSUD) is proposing to construct an at-grade parking facility on the site of West Webster and Gallatin Pike which involves grading work within both the floodway and floodway buffers of Gibson Creek. MSUD would like to use a vacant lot that is on the north side of West Webster Street, directly across from the office building.

MSUD will also use a vacant lot that is located on north side of West Webster to construct a parking facility (this is also owned by MSUD). This added area will increase efficiency and operations. Once the project is complete, the finished result will be a net decrease of imperious surface, a net cut of material within the flood plain allowing for increase flood storage and a net increase in the aesthetic value of the site with addition of landscaping and detention areas.

Councilmember Nancy VanReece of District 8, sent notice which was read into the record by Mr. Logan Bowman (Metro Water Services) regarding her support of the project at the location of 936 Gallatin Pike Madison, TN.

After discussion during the Executive Session of the Committee on May 7, 2020 and review of the information presented Ms. Anna Maddox made a motion to approve with the following standard Conditions # 1-2. Mr. Roy Dale seconded the motion. Ms. Carrie Stokes, Mr. Dodd Galbreath, Mr. Dale, Ms. Maddox, and Mr. Jesus Gomez-Velez voted in favor. The motion carried.

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 #202000005), 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 7, 2021. 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.

Example Meeting Minutes from the Stormwater Management Committee during FY20 (Continued)

Stormwater Management Committee
May 7, 2019
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4. 202000006
Vastland OHB
527 Old Hickory Blvd — APN: 16000010600
Inspector: (Kenneth Tranter) — CD-04 (Robert Swope)

APPLICANT'S REQUEST: Is to allow the following:
1. Uncompensated fill. Amount of uncompensated fill requested for this variance is approximately 5,250 CY fill.

APPELLANT: Vastland Northcrest Dev., LLC
REPRESENTATIVE: Civil Site Design Group, PLLC (Kevin Gangaware)
COMMENTS:
SW STAFF: Staff does not feel adequate mitigation has been provided for the volume of uncompensated fill requested as there may be opportunities to reduce the amount of fill.
CODES: No comment provided.
PLANNING: Variance request is consistent with the Final Site plan. Approve.
GREENWAYS: Parks defers to the decision of the Stormwater Management Committee.

Mr. Kevin Gangaware (Civil Site Design Group, PLLC) spoke on behalf of the request at the location of Vastland Communities, 527 Old Hickory Blvd. Mr. Gangaware stated that the owner and developer were seeking relief from the Stormwater Management Ordinance to allow non-compensated fill in the floodplain of the Sevenmile Creek. The stated project proposes 32 townhomes along with associated driveways, parking utilities and other infrastructure.

Mr. Gangaware stated to the committee that a variety of grading options were tried however, they had not been successful. He did go further to state they were able to create a driveway crossing that filled a portion of the floodway allowing the entry drive to safely remain above the flood elevation and still not raise the FEMA base flood elevation.

Mr. Brian Siewert submitted comments in writing and read into the record by Mr. Logan Bowman (Metro Water Services) regarding Mr. Siewert's concerns regarding the development proposed by Vastland for the property located at 527 Old Hickory Blvd., Brentwood, TN 37027. Mr. Siewert stated that though the proposal had been approved by Metro Planning and Metro Council, what was NOT taken into consideration in those approvals was a perpetually shifting water table directly adjacent to the development located at 5709 and 5711 Chadwick Lane, Brentwood, TN 37027 (in Montgomery Place).

Mr. Siewert stated that it was his understanding that all approvals for this development were in compliance to maps and requirements/standards that were re-established in 2017. Since 2017, the problem areas in the aforementioned flood plain of Chadwick Lane have grown significantly. Mr. Siewert requested a halt of all approvals until a careful re-assessment of the flood plain area is surveyed and updated and all requirements/restrictions related to any construction on 527 Old Hickory Blvd. takes into consideration the continuously growing standing water issues in and around the Montgomery Place parcels.

Example Meeting Minutes from the Stormwater Management Committee during FY20 (Continued)

Councilmember Robert Swope of District 4 submitted comments on the project at 527 Old Hickory Blvd. Councilmember Swope stated there had been multiple community meetings on projects proposed for this location however this is the only project that passed almost unanimously. He also spoke on the property being a difficult piece of property to build on.

Councilmember Swope stated he was aware of the concerns Mr. Siewert has addressed to the Planning Department. However, Councilmember Swope as well as many members of the community are in favor of the development.

After discussion during the Executive Session of the Committee on March 5, 2020 and review of the information presented a motion to approve with the following standard Conditions # 1-2 and Condition # 3-4 were approved and seconded. The motion carried.

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 #202000006), 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 7, 2021. 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 May 7, 2020. The variance is valid only so long as the plan presented to the Stormwater Management Committee does not change.

3. The Appellant shall work from "alternative" plan, which was approved by the SWMC Committee Members during the May 7, 2020 variance meeting instead of the original plan presented. The alternative plans allow the removal of material within the floodway for areas that planting will take place.

4. The variance request will allow for compensatory cut under the 2-year storm event elevation, which will result in approximately 680 CY of uncompensated fill. This condition pertains to what would otherwise be required per Metro Stormwater Management Manual 5.5.6 Floodplain Alterations.

IV. ITEMS OF BUSINESS

VI. ADJOURNMENT

The meeting adjourned at 12:50 a.m.

Example Meeting Minutes from the Stormwater Management Committee during FY20 (Continued)

Metropolitan Stormwater Management Committee
Approved:

By: Peninsula Gilbert
Secretary

Date: 08/10/2020

MWS Classroom-Based Public Education Program Activities during FY20

Metro Water Services Programs & Activities

Report Dates: From 7/1/19 to 6/30/20

221 Programs/Activities 2710 Students 560 Adults

ActivityType: Classroom Program 109 Programs/Activities

TOTAL classroom program	109 Programs/Activities	2440 Students	Adults
Afterschool Flooding and flood prevention	**1 Programs/Activities**	**20 Students**	**Adults**
12/9/2019 Community Center: Coleman Community Center	1	20	middle school
Afterschool: Stormwater Control Measures	**7 Programs/Activities**	**140 Students**	**Adults**
9/30/2019 Special Group Smith Springs Community Center NAZA	1	20	middle school
10/21/2019 Community Center: Coleman Community Center NAZA	1	20	middle school
11/20/2019 Antioch Middle	1	20	middle school
12/4/2019 Special Group North YMCA	1	20	middle school
12/10/2019 Donelson Middle	1	20	middle
12/11/2019 Margaret Allen Middle	1	20	middle school
12/16/2019 Special Group Northeast YMCA NAZA	1	20	middle school
Special School Program	**7 Programs/Activities**	**131 Students**	**Adults**
12/12/2019 Stratford High sustainability and water treatment	3	45	high school
2/4/2020 Issac Litton Middle i3 STEM club meeting on projects - sewer clog prevention	1	20	5th - 8th grades
2/21/2020 Harpeth Hall STEM day water and wastewater presentations	3	66	
The Water Cycle & Me	**26 Programs/Activities**	**412 Students**	**Adults**
7/9/2019 Special Group Nashville Sail Camp	1	20	elementary - middle
7/9/2019 Special Group GROW Enrichment Summer Camp	1	20	elementary-middle
7/10/2019 Special Group Peace Ambassadors summer program	1	20	elementary
7/11/2019 Special Group Owls Hill Nature Sanctuary Summer Camp	1	20	elementary - middle

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MWS Classroom-Based Public Education Program Activities during FY20 (Continued)

7/16/2019	Special Group Nashville Sail Camp	1	20	elementary - middle
7/16/2019	Special Group GROW Envrichment summer camp	1	20	elementary - middle
7/17/2019	Special Group Peace Ambassadors Summer Camp	1	20	middle school
7/18/2019	Special Group Owls Hill Nature Sanctuary Summer Camp	1	20	elementary - middle
7/25/2019	Special Group Owls Hill Nature Sanctuary Summer Camp	1	20	elementary - middle
7/30/2019	Special Group GROW Enrichment Summer Camp	1	20	elementary -middle
8/1/2019	Special Group Owls Hill Nature Sanctuary Summer Camp	1	20	elementary -middle
11/6/2019	David Lipscomb Elementary School	4	80	3rd grade
12/13/2019	Special Group Montessori Academy	2	40	4-6th grade
6/4/2020	Special Group Owls Hill Nature Center	3	24	elementary
6/11/2020	Special Group Owls Hill Nature Sanctuary summer camp	3	24	elementary
6/18/2020	Special Group Owls Hill Summer Camp	3	24	elementary
Water Conservation	**13 Programs/Activities**		**315 Students**	**Adults**
9/9/2019	Cole Elementary	2	50	3rd grade
9/10/2019	Cole Elementary	3	75	3rd grade
12/3/2019	Granbery Elementary	4	100	3rd grade
12/3/2019	Oliver Middle School	1	20	6th grade
12/4/2019	Oliver Middle School	1	20	6th grade
12/6/2019	Granbery Elementary	2	50	3rd grade
Water Fun & Games	**1 Programs/Activities**		**15 Students**	**Adults**
7/15/2019	Library: Watkins Park Branch	1	15	elementary
Water Quality & You (Enviroscape)	**1 Programs/Activities**		**10 Students**	**Adults**
2/12/2020	Templeton Academy	1	10	5th grade
What can we do? Human activity, effects and solutions	**18 Programs/Activities**		**444 Students**	**Adults**
1/30/2020	Cane Ridge Elementary	4	100	4th garde

MWS Classroom-Based Public Education Program Activities during FY20 (Continued)

1/31/2020	Westmeade Elem.	4	106	4th grade
2/3/2020	Lakeview Elem. Design Center	5	125	4th grade
2/24/2020	Cotton, Hattie Elementary	1	25	4th grade
3/11/2020	Hickman Elementary	4	88	4th grade
When it rains does it have to flood?	**35 Programs/Activities**		**953 Students**	**Adults**
9/4/2019	Eakin Elementary	6	150	3rd grade
9/13/2019	Charlotte Park Elementary	4	100	3rd grade
9/16/2019	Inglewood Elementary	2	40	3rd grade
9/17/2019	Glengarry Elementary	4	100	3rd grade
9/18/2019	Cane Ridge Elementary	4	88	3rd grade
9/24/2019	Glencliff Elementary	3	75	3rd grade
9/25/2019	Glencliff Elementary	3	75	3rd grade
9/27/2019	Shayne Elem.	4	200	3rd grade
10/2/2019	Mills, Dan Elementary	5	125	3rd grade
ActivityType:	**Community Outreach Event**		**6 Programs/Activities**	
TOTAL Booth	**5 Programs/Activities**		**Students**	**Adults**
Booth/Table	**5 Programs/Activities**		**Students**	**Adults**
9/6/2019	Special Event Nashville Home Show	1		
9/20/2019	Special Event Park(ing) Day - focus on what not to flush and wastewater treatment plant tour promo	1		
9/28/2019	Special Event Good Neighbor Festival - focus on what not to flush	1		
10/5/2019	Special Event Celebrate Nashville - water fountain and promote water treatment and tours	1		
2/28/2020	Nashville Lawn and Garden Show Music City Gold	1		
TOTAL Provide Water	**1 Programs/Activities**		**Students**	**Adults**
Water Fountain	**1 Programs/Activities**		**Students**	**Adults**
9/6/2019	State Fair Multi day event	1		
ActivityType:	**Community Presentation**		**4 Programs/Activities**	
TOTAL Presentation	**4 Programs/Activities**		**Students**	**103 Adults**
Special Presentation	**4 Programs/Activities**		**Students**	**103 Adults**
10/17/2019	Garden Club Oak Valley Garden Club - MWS sustainability and Music City Gold	1		15

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MWS Classroom-Based Public Education Program Activities during FY20 (Continued)

2/13/2020	Master Gardeners Music City Gold	1		50
3/12/2020	David Lipscomb Univsersity Presentation to sustainability class on MWS activities	1		20
6/7/2020	Special Group Urban Green Lab Teachers Professional Development: Sustainability and MWS	1		18
ActivityType:	**Provide Music City Gold**		**11 Programs/Activities**	
TOTAL Provide Music City Gold		**11 Programs/Activities**	**Students**	**Adults**
Provide Music City Gold		**11 Programs/Activities**	**Students**	**Adults**
2/11/2020	Glencliff High For school gardens	1		
2/13/2020	Master Gardeners for various garden uses and trials	6		
2/13/2020	Special Group for school gardens run by Plant the Seed	1		
2/24/2020	Hillsboro High for school garden and trials	1	1	
6/10/2020	Library - Bellevue Branch Seed library garden	1		
6/10/2020	Library: Hermitage Seed library garden	1		
ActivityType:	**Tour**		**73 Programs/Activities**	
TOTAL Tour: Biosolids		**13 Programs/Activities**	**61 Students**	**85 Adults**
Biosolids Facility Tour: College		**1 Programs/Activities**	**Students**	**12 Adults**
3/2/2020	David Lipscomb Univsersity Practices of Sustainable Living coures	1		12
Biosolids Facility Tour: Community		**9 Programs/Activities**	**Students**	**73 Adults**
9/23/2019	Community Metro Connect	1		7
10/22/2019	Community Metro Connect	1		4
10/23/2019	Community Metro Connect	1		17
11/20/2019	Community	1		15
12/5/2019	Community Metro Connect	1		5
12/5/2019	Community	1		16
1/22/2020	Special Group Trancyce, Let's Talk Gardening podcast - getting MCG for seed starting	1		1

MWS Classroom-Based Public Education Program Activities during FY20 (Continued)

2/5/2020	Special Group STEAM/Science director and coaches - learning about Music City Gold for student projects	1			5
2/13/2020	Special Group Plant The Seed, tour and MCG for their gardens	1			3
Biosolids Facility Tour: Students		**3 Programs/Activities**	**61 Students**		**Adults**
10/21/2019	Vanderbilt School of Science & Math (High Schoo	1	26	9th grade	
11/14/2019	Nashville School of the Arts	1	26		
2/10/2020	Hillsboro High	1	9	11th grade	
TOTAL Tour: WTP		**32 Programs/Activities**	**118 Students**		**177 Adults**
K.R. Harrington Tour: Adults		**2 Programs/Activities**	**Students**		**8 Adults**
11/1/2019	Special Group Department of Health School Based Dental Program	1			6
1/22/2020	Special Group Tour for Utilities Superintendent from Ft Benton, Montana and friend	1			2
K.R. Harrington Tour: College		**5 Programs/Activities**	**Students**		**63 Adults**
7/10/2019	Special Group SAE Institute = Environmental Science Course	1			16
10/16/2019	Special Group SAE Institute	1			15
1/24/2020	David Lipscomb Univsersity Sustainability in the Urban Environment course	1			9
2/12/2020	Special Group College student from out of state, remote classes	1			1
2/26/2020	University: Vanderbilt Environmental Health Class	1			22
K.R. Harrington Tour: Community		**14 Programs/Activities**	**Students**		**100 Adults**
7/12/2019	Community	2			9
7/22/2019	Community	2			26
8/21/2019	Community	1			19
9/3/2019	Special Group Fifty Forward Group	1			10
9/12/2019	Community	2			7
9/17/2019	Community	1			5
10/16/2019	Community	2			9
11/5/2019	Community	2			11
11/5/2019	Community Special tour with accommodation, limited walking	1			4

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MWS Classroom-Based Public Education Program Activities during FY20 (Continued)

K.R. Harrington Tour: Students		**11 Programs/Activities**	**118 Students**		**6 Adults**
7/1/2019	Special Group AAOC Camp for Youth Development	1	15	middle school	
8/29/2019	University School of Nashville Office of Attorney General/Environmental Division - job Shadowing students	1	4	High School	
10/16/2019	Home School Group	1	11	elementary - middle	
10/25/2019	GirlScouts Wonders of Water Badge	1	16	elementary - middle	
10/26/2019	Special Group Lighting the Path for Girls mentoring group	1	9		6
11/13/2019	Nashville School of the Arts	1	19	11 and 12th grades	
11/21/2019	Goodpasture Christian School AP Biology class	1	7	high school	
2/10/2020	Hillsboro High	1	9	11th grade	
2/22/2020	Girl Scout Event elementary	1	3		
2/25/2020	Templeton Academy	1	6	6th grade	
3/10/2020	Academy for G.O.D.	1	19	4th grade	
TOTAL Tour: WWTP	**28 Programs/Activities**		**91 Students**		**195 Adults**
Whites Creek Tour: Adults		**1 Programs/Activities**	**Students**		**2 Adults**
1/22/2020	Special Group Tour for Utilities Sperintendent for Ft Benton, Montana	1			2
Whites Creek Tour: College		**7 Programs/Activities**	**15 Students**		**102 Adults**
9/26/2019	University: Vanderbilt Global History of Waste class	1			24
10/8/2019	University: Belmont University Environmental Science class	1	15		
10/9/2019	University: Belmont University Environmental Science Class	1			15
10/10/2019	University: Belmont University Environmental Science Class	1			15
11/14/2019	David Lipscomb Univsersity	1			6
12/2/2019	David Lipscomb Univsersity The Science of Green Living class	1			18
2/26/2020	Belmont University Intro to Environmental Science class	1			24
Whites Creek Tour: Community		**15 Programs/Activities**	**Students**		**91 Adults**
7/8/2019	Community	2			16

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MWS Classroom-Based Public Education Program Activities during FY20 (Continued)

7/24/2019	Community	2			11
8/19/2019	Community	2			15
9/3/2019	Community	1			4
9/5/2019	Community	2			9
10/4/2019	Community	2			13
10/14/2019	Community	2			13
11/4/2019	Community	2			10
Whites Creek Tour: Students	**5 Programs/Activities**		**76 Students**		**Adults**
10/21/2019	Vanderbilt School of Science & Math (High Schoo	1	26	9th grade	
11/4/2019	Special Group The Academy at Old Cockrill	1	12		
11/14/2019	Nashville School of the Arts	1	26		
2/10/2020	Hillsboro High	1	9	11th grade	
2/28/2020	Gateway Academy Environmental Class	1	3	High School	
ActivityType: Virtual Programming			**18 Programs/Activities**		
TOTAL: Materials Development	**17 Programs/Activities**		**Students**		**Adults**
Virtual Program Development	**17 Programs/Activities**		**Students**		**Adults**
3/26/2020	All schools Drinking Water Treatment Plant Virtual Tour and activities	1			
3/26/2020	All schools Wastewater Treatment Plant Virtual Tour and materials	1			
3/26/2020	All schools Biosolids Facility Virtual Tour and acctivities	1			
4/3/2020	All schools Stormwater Virtual Tour Video and activities	1			
4/3/2020	All schools Solve a water pollution mystery video (elementary students)	1			
4/22/2020	All schools Water is Heavy video and activity(K-2nd grade)	1			
4/22/2020	All schools Water Drop Video and Activity (K-2nd grade)	1			
4/22/2020	Earth Day Festival Activities and Materials for Virtual Earth Day Festival	1			
5/13/2020	All schools When it rains, does it have to flood? Video Story and activities (3rd & 4th grade)	1			

MWS Classroom-Based Public Education Program Activities during FY20 (Continued)

5/13/2020	All schools	1
	Surface Tension Fun and Games video and activities (3rd & 4th grade)	
5/22/2020	All schools	1
	Teacher Prof Dev - Stormwater Pt 1 SCMs	
5/22/2020	All schools	1
	Teacher Prof Dev - Stormwater Pt 2 Flooding and Floodplains	
5/22/2020	All schools	1
	Teacher Prof Dev - Stormwater Pt 3 Stormwater Fees	
5/26/2020	All schools	1
	Teacher Prof Dev - Urban Water Cycle pt 3-Drinking Water Treatment	
5/26/2020	All schools	1
	Teacher Prof Dev - Urban Water Cycle pt 2-Water & Nutrient reclamation	
5/26/2020	All schools	1
	Teacher Prof Dev - Urban Water Cycle pt 1-Stormwater	
6/23/2020	All schools	1
	Professional Development for Teachers - Urban Water Cycle series	

TOTAL Virtual Program	1 Programs/Activities	Students	Adults

Virtual Program	1 Programs/Activities	Students	Adults
6/19/2020	MNPS ALL SCHOOLS	1	
	Virtual Water Treatment Plant Tours - MNPS virtual summer program		

NPDES Public Education Events/Presentations during FY20

Date	Event	Education Type	Audience #/ Drains Marked	Audience	Target Audience/Pollutant
6/20/2020	Rain Barrel Pick Up	Citywide Event	450	Metro Nashville Residents	General Stormwater Pollution
6/9/2020	Pool Discharge	Brochure/Door Hanger Distribution	1	Homeowner/Pool Owner	General Stormwater Pollution
5/15/2020	Metro-Wide MS4 Presentation	Presentation	42	All metro departments	MS4 Permit Compliance
5/4/2020	Ewing Creek Fertilizer mail-out	Mail-out	200	Residents surrounding Ewin Creek segment	Fertilizer/Pesticides
4/23/2020	Creekstone Apartment Pet Waste Email	Metro Employee MS4 Compliance	50	Creekstone Apartments residents	Pet Waste
2/18/2020	Email notice	Mail-out	778	Grading permit related - Development Community	Construction/Development Education
1/8/2020	Urban Forest Connections Webinar	Presentation	354	Professionals	General Stormwater Pollution
12/18/2019	Wastewater Treatment Manager Meeting	Presentation	20	Wastewater Treatment Managers	Industrial Runoff
11/25/2019	Brochure Handout on Broadway	Brochure/Door Hanger Distribution	8	Business Owners	Restaurant Impacts
11/19/2019	TNSA Conference	Presentation	40	Stormwater Conference Attendees	General Stormwater Pollution
11/19/2019	Tennessee Stormwater Association Conference	Presentation	60	conference attendees	Construction/Development Education
10/8/2019	Citizens Water Academy	Presentation	15	Local Concerned Citizens	General Stormwater Pollution
10/7/2019	TN Farm Bureau Townhall	Public/Group Meeting	150	Farmers	General Stormwater Pollution
10/2/2019	Email notice	Mail-out	811	Grading permit related - Development Community	Construction/Development Education
9/7/2019	Dragon Boat Festival	Citywide Event	150	Racers and Nashville residents	General Stormwater Pollution
8/3/2019	Urban Runoff 5K	Citywide Event	450	Nashvillians and tourists	General Stormwater Pollution
7/20/2019	Farm Day (2)	Citywide Event	550	Families	Fertilizer/Pesticides
7/19/2019	Goodlettsville Waterfest	Citywide Event	310	Families and children of Goodlettsville	General Stormwater Pollution
7/14/2019	CRC Waterfest	Citywide Event	300	Families interested in water quality	General Stormwater Pollution
7/13/2019	Farm Day	Citywide Event	650	Families	Fertilizer/Pesticides
7/9/2019	Bioretention Mail-Outs	Mail-out	25	Residential Bioretention Owners	SCM Inspection/Maintenance

Note: Due to some staff reorganization, Each Social Media posts were not input into the NPDES Public Education database. From this point forward, NPDES will extract yearly stats from the social media posts for the Annual Report.

Metro Department of Public Works Waste Collection During FY20

	July	August	September	October	November	December	January	February	March	April	May	June	Total
Recycling													
Curbside Recycling/Inhouse Recycling/Recycling Dumpsters													
Mixed Recyclables	**864.14**	**930.71**	**908.60**	**842.20**	**928.29**	**985.05**	**1,021.71**	**1,047.01**	**842.93**	**944.82**	**1,100.85**	**1,000.70**	**11,417.01**
Monthly Totals													**11,417.01**
Oil	2.97	2.2	0	2.17	1.38	1.37	1.47	1.18	1.17	0.77	0	3.74	**18.42**
Anti Freeze	1.4	1.1	0	0	0	0.8	0	0	0.52	0	0	1.1	**4.92**
Electronics	0	19.73	0	12.21	4.82	8.45	1	0.27	0	3.79	8.68	12.21	**71.16**
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	6.66	2.66	4.81	4.48	1.38	3.54	11.27	3.07	0	1.46	18.04	1.92	**59.29**
Monthly Totals	**11.03**	**25.69**	**4.81**	**18.86**	**7.58**	**14.16**	**13.74**	**4.52**	**1.69**	**6.02**	**26.72**	**18.97**	**153.79**
Drop Off Recycling Centers & Convenience Centers													
Carpet/Carpet Pad	-	2.92	9.49	-	-	-	-		-	-	-	-	**12.41**
Mixed Recyclables	46.66	35.62	37.76	37.17	37.43	36.89	37.54	32.27	40.51	47.32	49.60	57.27	**496.04**
Aluminum & Tin	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Glass	211.68	191.06	199.23	203.01	198.82	225.96	220.93	179.26	229.16	225.83	263.94	245.86	**2,594.74**
Mixed Paper	127.86	124.04	123.18	122.51	134.53	168.48	127.98	111.81	125.75	127.55	116.52	115.31	**1,525.52**
OCC	261.36	259.63	233.05	248.45	246.39	311.84	293.36	249.42	255.41	239.46	262.15	263.03	**3,123.55**
Plastic	34.96	31.97	35.83	29.72	32.51	36.20	31.36	29.05	38.74	39.65	45.14	37.60	**422.73**
Plastic Bottles & Metal Cans	43.93	39.66	39.15	41.94	42.76	43.19	41.08	35.88	40.53	44.89	48.48	46.63	**508.12**
Scrap Metal	91.57	91.53	77.50	83.50	60.55	63.36	59.28	48.15	51.23	-	98.06	9.49	**824.22**
Tires	660.93	680.35	564.87	648.68	583.97	554.68	632.64	548.42	304.09	330.93	376.79	536.27	**6,422.62**
Monthly Totals	**1,478.95**	**1,456.78**	**1,320.06**	**,414.98**	**1,336.96**	**1,440.60**	**1,444.17**	**1,234.26**	**1,085.42**	**1,055.63**	**1,260.68**	**1,401.46**	**15,929.95**
Waste Collection													
Total Metro Public Works Trash Collection	4,018.93	3,924.66	3,382.81	4,066.87	3,732.03	3,763.76	4,010.11	4,066.28	5,288.47	3,744.22	3,646.22	3,566.98	**47,211.34**
Total Convenience Center Trash	2,218.93	2,514.38	2,050.27	2,033.32	2,022.91	1,811.15	1,961.90	1,977.44	1,381.47	423.39	2,500.14	2,405.94	**23,301.24**
Contracted Residential	9,250.38	9,414.20	7,411.53	8,871.71	8,535.81	8,770.85	9,323.27	7,565.87	9,096.80	10,551.33	10,447.19	9,384.03	**108,622.97**
Monthly Totals	**15,488.24**	**15,853.24**	**12,844.61**	**14,971.90**	**14,290.75**	**14,345.76**	**15,295.28**	**13,609.59**	**15,766.74**	**14,718.94**	**16,593.55**	**15,356.95**	**179,135.55**
Brush Collection													
Unground -- Metro	2,929.13	2,641.92	2,255.23	3,353.19	3,002.80	1,562.60	2,069.00	1,510.50	1,306.41	1,658.68	5,165.44	4,666.78	**32,121.68**
Unground -- Metro Citizens	289.21	272.80	157.47	152.29	185.78	107.22	94.46	98.62	179.37	306.17	438.67	261.93	**2,543.99**
Unground -- Parks	66.09	59.84	39.62	41.26	14.37	15.67	33.88	11.11	-	8.79	59.99	44.88	**395.50**
Ground -- Board of Education	98.43	46.08	7.89	36.25	17.44	12.02	50.35	1.72	66.22	11.13	177.17	68.88	**593.58**
Ground -- Library	-	1.87	1.88	0.98	0.66	-	2.59	-	2.59	-	2.12	3.01	**15.70**
Ground--Sheriff	8.84	7.24	0.10	10.03	3.51	-	6.23	5.09	3.71	20.59	9.72	9.93	**84.99**
Ground--Water	-	0.16	-	-	-	-	-	-	-	-	-	-	**0.16**
Monthly Totals	**3,391.70**	**3,029.91**	**2,462.19**	**3,594.00**	**3,224.56**	**1,697.51**	**2,256.51**	**1,627.04**	**1,558.30**	**2,005.36**	**5,853.11**	**5,055.41**	**35,755.60**

Metro Department of Public Works Hazardous Spills Responses During FY20

ID	Date	Notified	Location	Situation	Arrived	Initial Actions	Departed	Agencies
1974	5/17/2020	20:18	Buena Vista Pk. & Cliff Dr.	Oil spill on road from wreck	21:08	Used 25 lbs. Absorbent on spill	21:30	PW RIR
1970	4/30/2020	11:45	Old Hickory Bv. & Dickerson Rd	Hydraulic fluid spill on parking lot and road Old Hickory Bv. @twice daily store	12:00	Put down 50 lbs. absorbent	13:45	MNRIR / SOLID WASTE
1966	3/13/2020	8:40	Riverside Dr. & Paden Dr.	50 gallon hydraulic spill fluid oil on road	9:08	100 lbs. Absorbent	10:45	PW RIR
1963	1/23/2020	14:05	1007 Woods Lake Dr.	30 gal. Hydraulic spill on road	14:26	Covered with 60 lbs. Absorbent	14:41	PW RIR
1961	1/16/2020	9:00	3801 Syfert Ln	50 gal. Hydraulic oil spill on road	9:22	Spread 100 lbs. Absorbent on road	10:01	PW RIR
1959	12/12/2019	13:12	278 Richbrier Dr.	Hydraulic spill on road	13:45	Applied 350 lbs. Absorbent	15:20	PW RIR
1958	11/29/2019	9:45	5162 Rice Rd.	Hydraulic spill from trash truck on road	10:40	Put down 650 lbs. Absorbent	12:45	PW RIR
1956	10/30/2019	19:00	Lakeland Dr. & Mcgavock Pk.	Oil spill on rd.	19:35	Applied 250 lbs. Absorbent	21:35	MNPD, PW RIR
1953	10/15/2019	10:30	Centennial Bv.. & California Ave.	50 gal. Hydraulic spill on road from patch truck	10:42	Used 150 lbs. Of absorbent on road	11:20	PW PATCH TRUCK
1949	8/14/2019	8:40	1816 S. 19th.St.	Hydraulic oil spill 30 gal. On road	8:55	Put down 150 lbs. Absorbent	13:45	PW RIR
1946	7/30/2019	12:20	1335 Lewis St.	50 gal. Hydraulic spill oil on road.	12:40	Put down 600 lbs. Absorbent	13:41	PW RIR
1944	7/12/2019	7:35	Drexel St. & 7th. Ave S.	10 gal. Hydraulic spill on road	7:55	Put down 300 lbs. Absorbent on road	9:11	PW RIR

Note: PW RIR (Public Works Roadway Incident Response), PW PATCH (Public Works Patching Crews), MNPD (Metro Nashville Police Department)

Metro's WebEx MS4 Permit Orientation Meeting List of Attendees FY20

User	Join Time	Duration
Allison Davis	5/15/2020 8:46	01:41:21
Andy Welch	5/15/2020 9:08	01:18:35
Bill Penn	5/15/2020 9:02	01:24:45
Bob Leeman	5/15/2020 8:59	21:58
Brad Muckel	5/15/2020 8:57	01:30:18
Brent Grubb	5/15/2020 9:01	01:25:32
Casey Cooper	5/15/2020 8:55	01:32:22
Christopher Michie	5/15/2020 9:00	53:46
Elizabeth	5/15/2020 8:53	01:34:41
Heidi Mariscal	5/15/2020 9:05	01:21:58
Ilesha Montesrin	5/15/2020 9:01	01:25:48
Jennifer Smith	5/15/2020 10:14	13:42
Jerry Terfinko	5/15/2020 9:14	01:12:37
Joshua Hayes	5/15/2020 8:35	01:51:59
Julie Berbiglia	5/15/2020 8:53	00:22
Kevin Johnson	5/15/2020 9:06	01:20:44
Kevin Turner	5/15/2020 8:55	01:32:00
Laura Womack	5/15/2020 8:53	01:34:38
MNN Haney	5/15/2020 8:52	01:35:36
Matt	5/15/2020 9:01	01:25:50
Michael Hunt	5/15/2020 8:38	01:48:57
Mickie Sherrell	5/15/2020 9:02	01:24:58
Mike Leonard	5/15/2020 9:01	01:26:06
Mike W	5/15/2020 9:03	01:23:35
Randall Jones	5/15/2020 9:07	58:24
Rebecca Dohn	5/15/2020 8:51	01:36:03
Rocky Robinson	5/15/2020 9:10	16:47
Roger Lindsey	5/15/2020 9:00	01:26:51
Ron Cosentino	5/15/2020 9:02	01:03:45
Shane Parrish	5/15/2020 9:00	01:27:07
Shawn Thomas	5/15/2020 9:07	01:19:49
Sonia Allman	5/15/2020 9:05	01:21:02
Stephanie Judd	5/15/2020 8:33	01:54:01
Theresa Costonis	5/15/2020 9:24	01:03:04
Thomas Raybon	5/15/2020 9:04	01:23:27
Valorie Gilley	5/15/2020 9:09	01:17:39
douglas kinsey	5/15/2020 8:59	01:27:27
ricky swift	5/15/2020 9:04	01:16:34
scott potter	5/15/2020 8:35	01:51:19

Example Sign-in Sheets for Municipal Maintenance Employees on the MS4 Permit

Metro Department	Parks
Supervisor Performing Training (Signature)	Casey Buttrey
Rain Check Training Video (31 minutes)	☑
Operations and Maintenance SOP Review	☐

Employee Name	Employee Signature	Date Trained
Casey Buttrey		7-10-2020
Jeremy Hale		7-13-202
Tanner White		7-13-2020
Reggie Sims		7-13-202
Kyle Clarke		7-13-2020
Hunter Best		7-13-2020
Johnathon Peden		7-13-2020
Adam Jen		7-13-2020

Please scan in the completed form and email to Josh.Hayes@Nashville.gov or Metro mail a copy of the completed form to Josh Hayes at the MWS Stormwater, NPDES Office, 1607 County Hospital Road.

Example Sign-in Sheets for Municipal Maintenance Employees on the MS4 Permit (Continued)

Metro Nashville Stormwater (MS4)
Operations and Maintenance Employee Training Sign-in Sheet

Metro Department	Public Works / west center / streets / Roa
Supervisor Performing Training (Signature)	
Rain Check Training Video (31 minutes)	☐
Operations and Maintenance SOP Review	☑

Employee Name	Employee Signature	Date Trained
James Hannah	James Hannah	7-10-20
Jason Rainey	Jason Rainey	7-10-20
Jeff King	Jeff King	7-10-20
Kevin Morgan	Kevin Morgan	7-10-20
Daryl Hoots	Daryl Hoots	7-10-20
Gary Clouse	Gary Clouse	7-15-20
Edward Healy	Edward Healy	7-10-20
Dalton Thomas	Dalton Thomas	7-10-20
Randy Madden	Randy Madden	7-15-20
John Madden	John Madden	7-15-20
Chris Gammon	Chris Gammon	7-15-20
Kevin Bailey	Kevin Bailey	7/15/20
DAVID BEATY	DAVID BEATY	7/15/20

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Example Sign-in Sheets for Municipal Maintenance Employees on the MS4 Permit (Continued)

Metro Nashville Stormwater (MS4)
Operations and Maintenance Employee Training Sign-in Sheet

Metro Department	
Supervisor Performing Training (Signature)	
Rain Check Training Video (31 minutes)	☒
Operations and Maintenance SOP Review	☒

Employee Name	Employee Signature	Date Trained
Christopher Morris		07-14-20
Steve Frost		7-14-20
Carl Baker		7/14/20
Don Allen		7/14/20
Charles Spurlock		7/14/20
James E Greene		7/14/20
William Fite		7/14/20
STEVEN A. TROTTER		7/14/20
Danny McKay		7/15/20
Toby Spain		7 15 20
MIKE RIBAUDO		7-15-20
Gary Wair		7-15-2020
Nathan Binkley		7-15-2020
Russell Lawson		7-15-2020

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Example Sign-in Sheets for Municipal Maintenance Employees on the MS4 Permit (Continued)

Metro Nashville Stormwater (MS4)
Operations and Maintenance Employee Training Sign-in Sheet

Metro Department	METRO PUBLIC WORKS
Supervisor Performing Training (Signature)	
Rain Check Training Video (31 minutes)	☒
Operations and Maintenance SOP Review	

Employee Name	Employee Signature	Date Trained
Timothy Young		7/9/2020

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Example Sign-in Sheets for Municipal Maintenance Employees on the MS4 Permit (Continued)

Metro Nashville Stormwater (MS4)
Operations and Maintenance Employee Training Sign-in Sheet

Metro Department	METRO PUBLIC WORKS (CENTRAL)
Supervisor Performing Training (Signature)	Ernie Kurgan
Rain Check Training Video (31 minutes)	☑
Operations and Maintenance SOP Review	☑

Employee Name	Employee Signature	Date Trained
Ernie Kurgan warehouse	Ernie Kurgan	6-4-20
Josh Elliott warehouse	Josh Elliott	6-4-20
Chris Dotye Response	Chris Dotye	6-4-20
George Allen Response	George Allen	6-4-20
Brandon Gann Response	Brandon Gann	6-4-20
Steve Nickens Response	Steve Nickens	6-4-20

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Example Sign-in Sheets for Municipal Maintenance Employees on the MS4 Permit (Continued)

Metro Nashville Stormwater (MS4)
Operations and Maintenance Employee Training Sign-in Sheet

Metro Department	SSD
Supervisor Performing Training (Signature)	
Rain Check Training Video (31 minutes)	☐
Operations and Maintenance SOP Review	☐

Employee Name	Employee Signature	Date Trained
Chambers, Charles		6/30/2020
Kwaku Boachie		7/1/2020
Ieryl Symons	Ieryl Symons	7/4/2020
Selesh Taye		7-16-2020

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ATTACHMENT A – Protected Species Report

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

(Reporting Period 07/01/19 – 06/30/2020)

Reviewed and Updated:
November, 2020

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 22 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 22 species may require specific 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
Large Riverine Systems/ Lakes	Vertebrate Animal	*Haliaeetus leucocephalus*	Bald Eagle	G5	No Status	D	Areas close to large bodies of water; roosts in sheltered sites in winter; communal roost sites common.	S3
	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
	Vascular Plant	*Stellaria fontinalis*	Water Stitchwort	G3	No Status	S	Seeps And Limestone Creek Beds	S3
	Vertebrate Animal	*Ixobrychus exilis*	Least Bittern	G5	No Status	D	Marshes with scattered bushes or other woody growth; readily uses artificial wetland habitats.	S2B

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
Mr. Bill Murph, bill.murph@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

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 3.3	yes = 1 # of acres graded	0 0	$300.00 $100.00	$0.00 $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 habitat or sediment impaired stream yes = 1 buffer disturbance >5,000 sqft yes = 1	0 0 0	$200.00 $300.00 $200.00	$0.00 $0.00 $0.00 **$0.00**
Failure to install / maintain epsc	2.7, 6.10	yes = 1 # of separate failure locations # of acres with exposed soils	0 0 0	$100.00 $50.00 $50.00	$0.00 $0.00 $0.00 **$0.00**
Illicit discharge of sediment	15.64.205 6.10.3	yes = 1 # of separate discharge points in watershed of sediment impaired stream yes = 1 directly in sediment impaired stream yes = 1	0 0 0 0	$100.00 $50.00 $200.00 $300.00	$0.00 $0.00 $0.00 $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 6.10.4	yes = 1 #of acres not stabilized	0 0	$50.00 $50.00	$0.00 $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: 615-880-2420
Fax: 615-880-2425
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.

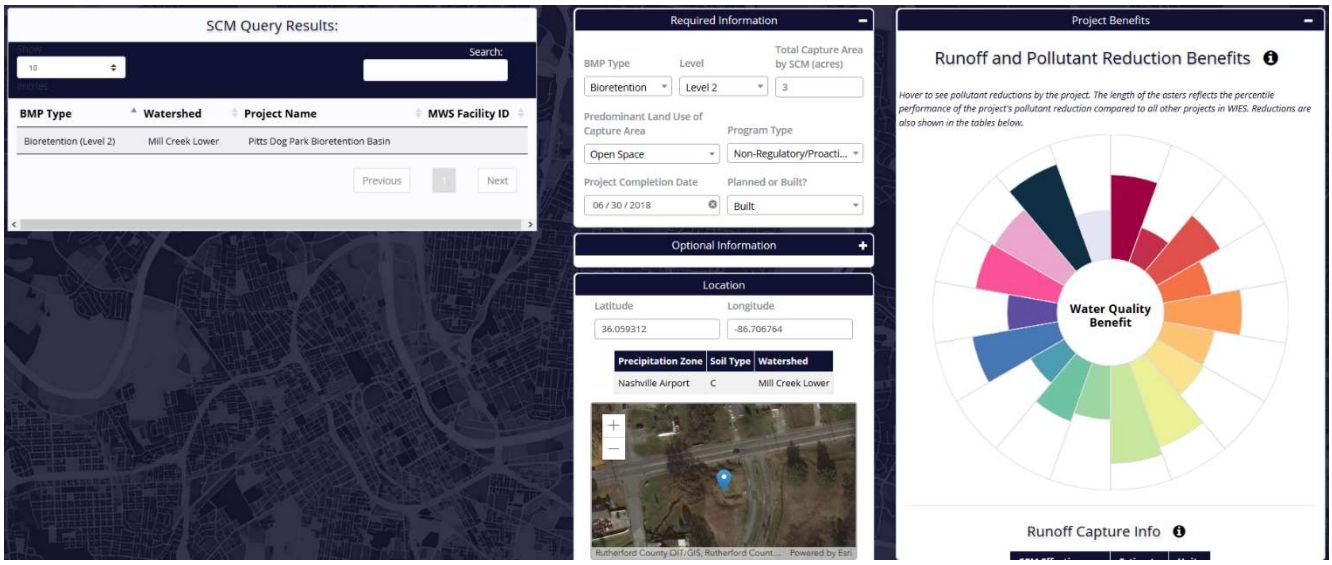
ATTACHMENT C – WIES Database Pollutant Loading Reduction Estimates of SWMP

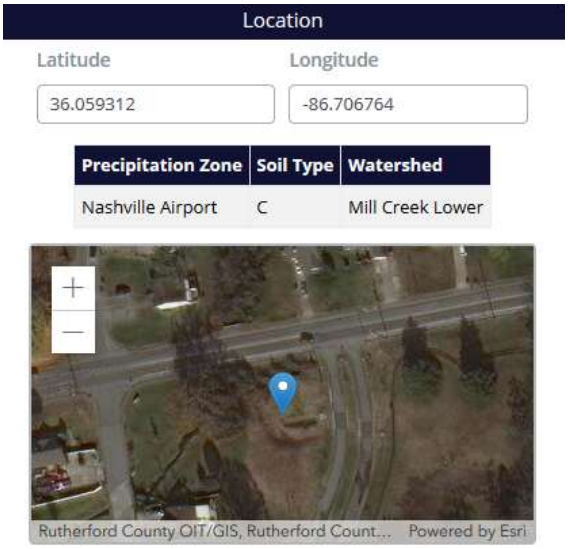
As required in Section 3.3.2 of the MS4 Permit, Metro is required to develop Event Mean Concentrations (EMC's) for all parameters listed in Table 2 of the MS4 Permit. In year 5 of the MS4 permit, Metro was required to report Seasonal Pollutant Loadings (SPL) from the MS4. The methodology for performing 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.

In addition to the annual reporting tables Metro is able to generate 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 (depicted below).





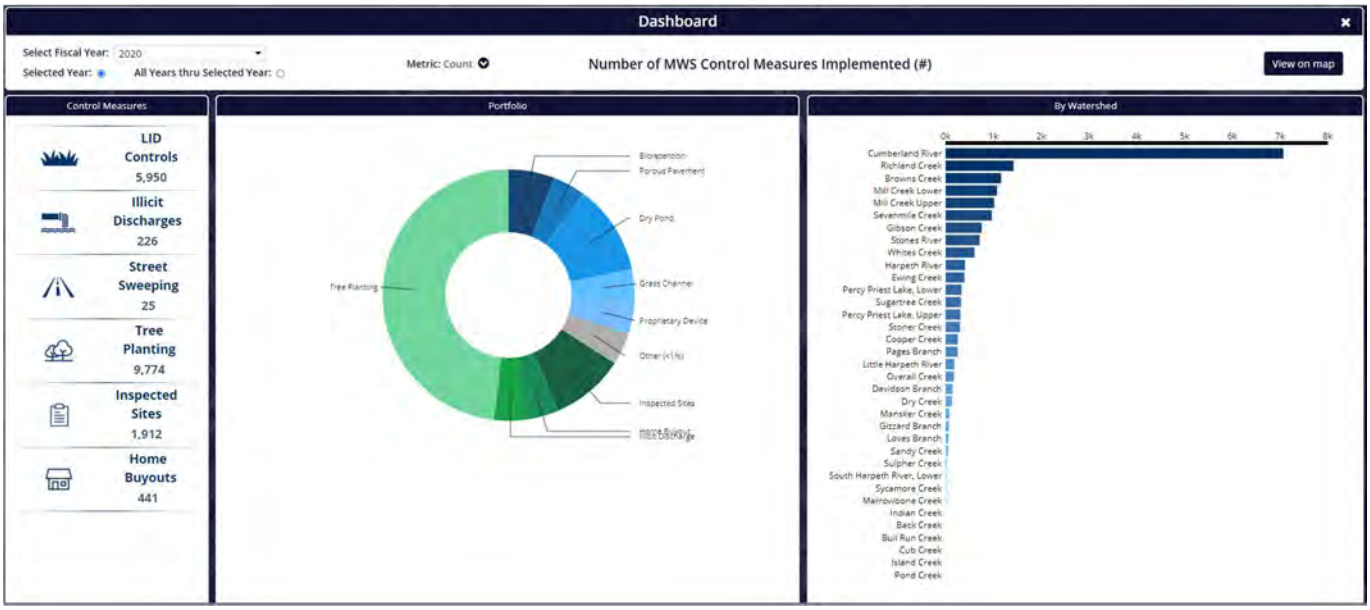
Pollutant Reduction Benefits

Pollutant	BMP Effect	Load Unit	Estimated Inflow Concentration	Concentration Unit
E. coli	12.51	MPN 10e9	2419	MPN/100 mL
BOD5	1.93	lbs	2.4	mg/L
COD	44.14	lbs	48	mg/L
NH3	0.09	lbs	0.08	mg/L
TKN	0.82	lbs	0.66	mg/L
NO2+NO3	0.2	lbs	0.29	mg/L
TN	0.76	lbs	0.87	mg/L
Diss P	0.3	lbs	0.44	mg/L
TP	0.6	lbs	0.74	mg/L
Pb	0	lbs	1.5	ug/L

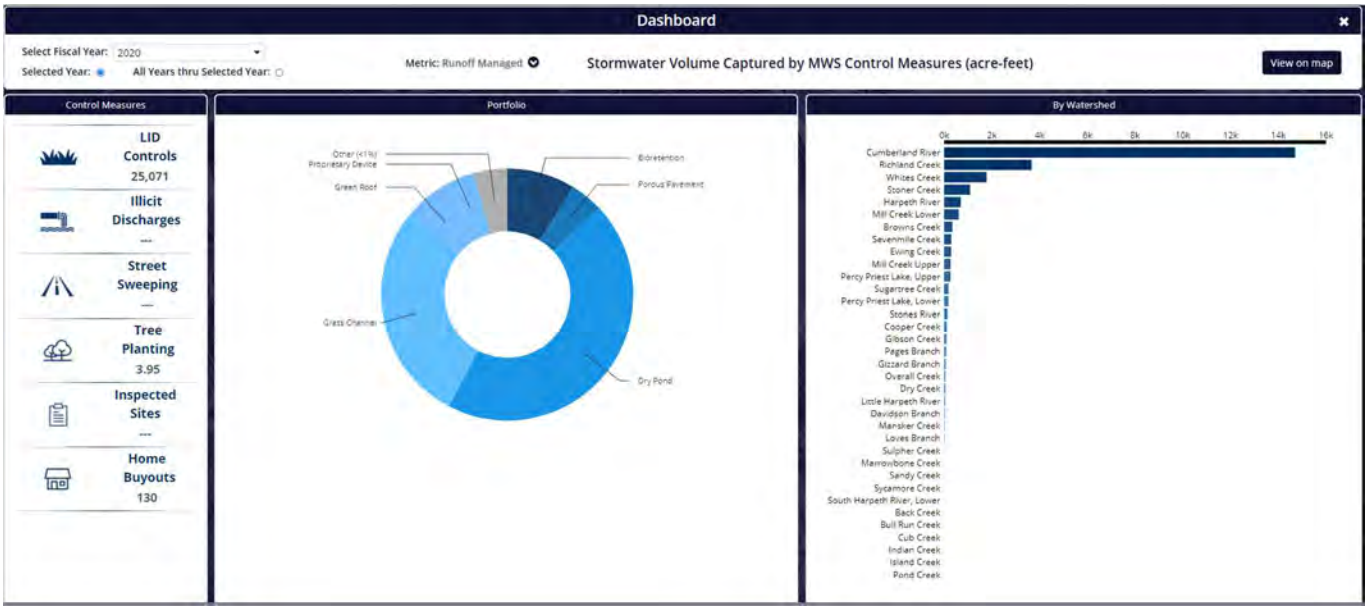
Runoff Capture Info

SCM Effectiveness	Estimate	Units
Total Inflow	0.63	ac-ft
Retained	0.24	ac-ft
Treated	0.22	ac-ft
Bypass	0.17	ac-ft
Soil Infiltration	2.00	in-hr

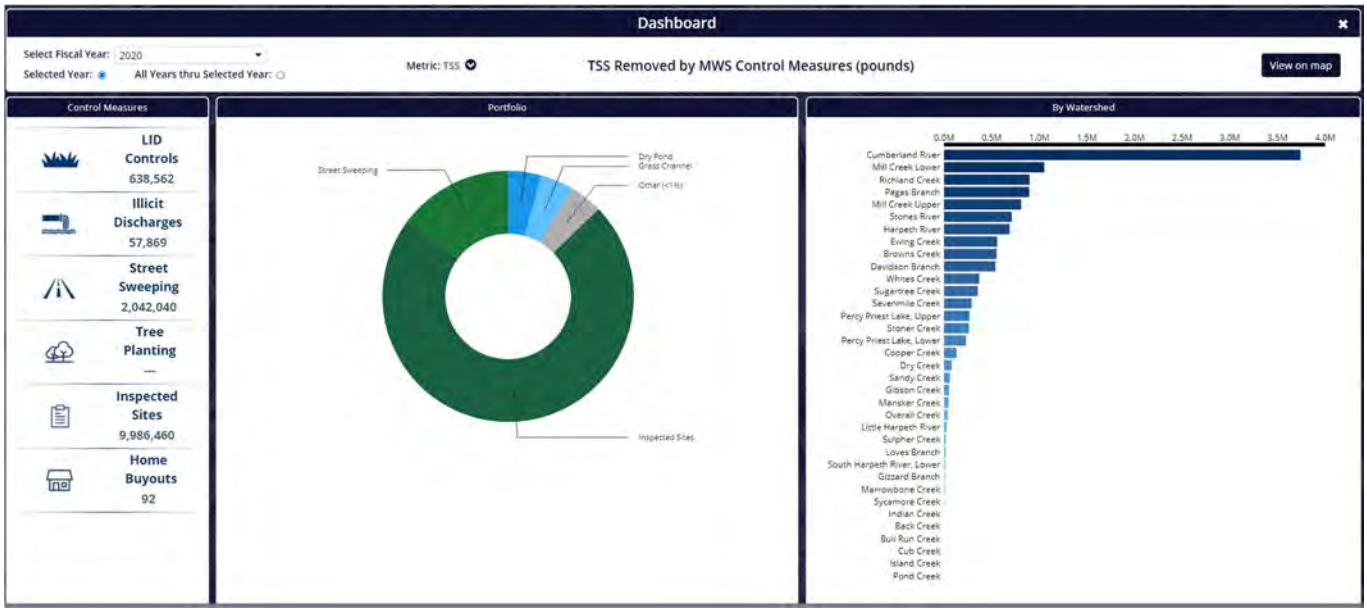
WIES also provides a Dashboard to enable watershed-wide assessment of the MWS stormwater program and its benefits. This screenshot shows a simple count of different control measures implemented across Davidson County thru FY20, organized by control measure type (left and middle) and watershed (right):



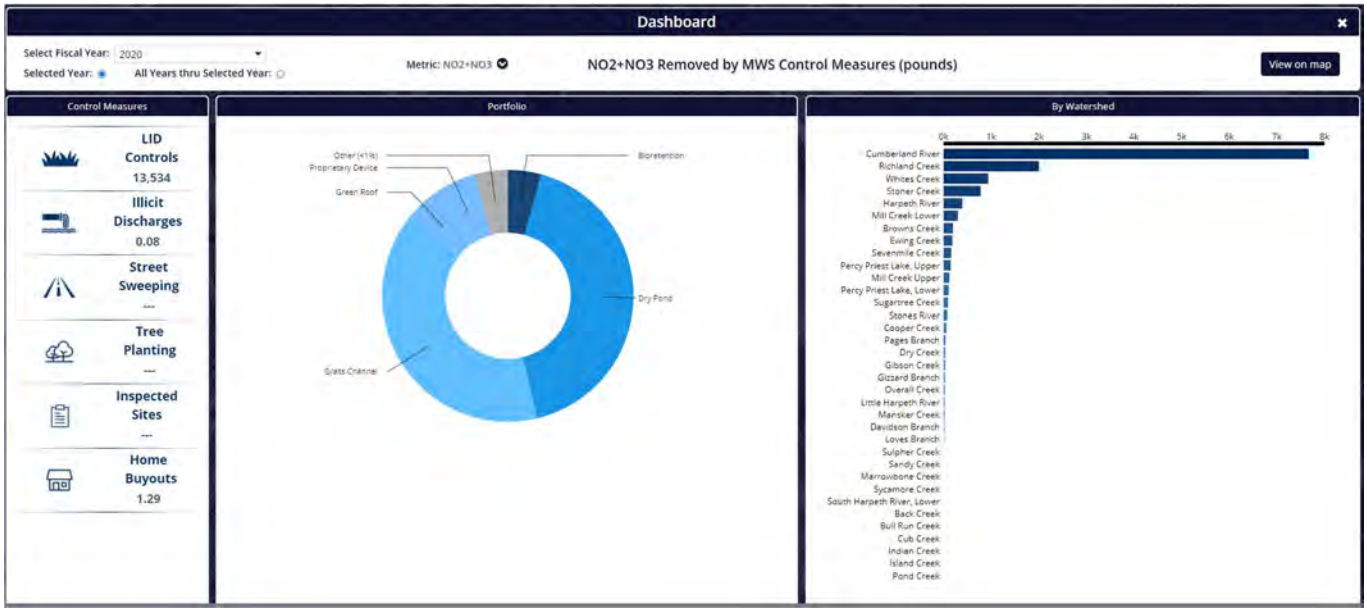
This screenshot shows the estimates of annual average runoff capture across Davidson County by each of the control measures types (left and middle) and in each watershed (right). The units for all numbers shown are acre-feet of runoff captured.



This screenshot shows the estimates of annual average TSS reduction across Davidson County by each of the control measures types (left and middle) and in each watershed (right). The units for all numbers shown are pounds of sediment removed.



This screenshot shows the estimates of annual average nitrogen reduction across Davidson County by each of the control measures types (left and middle) and in each watershed (right). The units for all numbers shown are pounds of nitrogen removed. Note that the effect of control measures greatly varies between sediment (previous page, which is most controlled by construction inspections) and nitrogen (which is most controlled by runoff retention).



Watershed	MWS Control Measure Implementation during Fiscal Year 20								
	SCMs Built (#)	Total SCMs in Watershed at end of FY (#)	Construction Sites Inspected (#)	IDDE Complaints Investigated (pollution and construction runoff) (#)[1]	Street Sweeping (tons)	Homes Bought (#)	Total Homes Bought in Watershed at end of FY (#)	Trees Planted (#)	Root Nashville Trees Planted by end of FY (#)
All Watersheds	457	5,950	1,912	226	4,862	16	441	4,032	9,774
Back Creek	0	0	0	0	0	0	0	0	0
Browns Creek	16	306	170	11	199	0	37	273	635
Bull Run Creek	0	0	0	0	0	0	0	0	0
Cooper Creek	0	71	77	2	58	3	8	70	98
Cub Creek	0	0	0	0	0	0	0	0	0
Cumberland River	208	1,866	819	45	1,113	0	74	1,927	4,269
Davidson Branch	1	45	13	0	15	0	0	62	81
Dry Creek	6	56	15	6	63	0	4	10	49
Ewing Creek	12	184	23	7	170	0	29	27	151
Gibson Creek	0	73	20	6	63	3	54	352	602
Gizzard Branch	1	45	5	0	15	0	0	0	17
Harpeth River	14	231	17	14	316	0	3	67	140
Indian Creek	0	0	2	1	0	0	0	0	0
Island Creek	0	0	0	0	0	0	0	0	0
Little Harpeth River	4	59	6	3	19	0	0	27	112
Loves Branch	2	24	4	0	19	0	1	29	29
Manskerss Creek	2	36	12	4	0	0	0	13	26
Marrowbone Creek	0	9	2	6	0	0	0	0	2
Mill Creek Lower	26	511	68	22	617	4	38	177	438
Mill Creek Upper	29	412	19	11	185	1	2	147	573
Overall Creek	2	69	4	5	9.72	1	2	63	89
Pages Branch	2	70	34	3	73	0	7	13	133
Percy Priest Lake, Lower	10	180	11	3	394	0	6	13	131
Percy Priest Lake, Upper	30	226	16	5	53	0	0	2	61
Pond Creek	0	0	0	0	0	0	0	0	0
Richland Creek	46	395	347	16	340	1	68	99	593
Sandy Creek	3	16	36	1	19	0	0	0	0
Sevenmile Creek	8	311	30	11	365	0	32	378	583
South Harpeth River, Lower	0	15	3	2	15	0	0	0	0
Stoner Creek	12	203	16	8	292	0	9	11	61
Stones River	12	147	23	9	190	0	0	42	533
Sugartree Creek	5	190	85	7	83	0	1	11	41
Sulpher Creek	4	14	1	2	0	0	0	0	5
Sycamore Creek	0	13	6	1	0	0	0	0	0
Whites Creek	2	173	28	15	175	3	66	219	322

1 – IDDE Complaints Investigated includes general water quality complaints and complaints about runoff from properties that don't have permit coverage.

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]	**Total Pollutant Load Removed from Watershed** (ac-ft)
All Watersheds	FY20	25,071	0	0	0	130	0	25,201
Back Creek	FY20	0	0	0	0	0	0	0
Browns Creek	FY20	337	0	0	0	8.97	0.21	346
Bull Run Creek	FY20	0	0	0	0	0	0	0
Cooper Creek	FY20	104	0	0	0	6.29	0.03	111
Cub Creek	FY20	0	0	0	0	0	0	0
Cumberland River	FY20	14,677	0	0	0	24	2.48	14,704
Davidson Branch	FY20	39	0	0	0	0	0.03	39
Dry Creek	FY20	56	0	0	0	1.04	0.02	57
Ewing Creek	FY20	287	0	0	0	6.94	0.05	294
Gibson Creek	FY20	85	0	0	0	15	0.11	100
Gizzard Branch	FY20	70	0	0	0	0	0.01	70
Harpeth River	FY20	694	0	0	0	0.74	0.03	695
Indian Creek	FY20	0	0	0	0	0	0	0
Island Creek	FY20	0	0	0	0	0	0	0
Little Harpeth River	FY20	54	0	0	0	0	0.04	54
Loves Branch	FY20	24	0	0	0	0.24	<0.01	25
Manskers Creek	FY20	36	0	0	0	0	0.01	36
Marrowbone Creek	FY20	12	0	0	0	0	<0.01	12
Mill Creek Lower	FY20	596	0	0	0	14	0.1	609
Mill Creek Upper	FY20	265	0	0	0	1.94	0.17	267
Overall Creek	FY20	57	0	0	0	0.49	0.04	58
Pages Branch	FY20	91	0	0	0	1.69	0.05	93
Percy Priest Lake, Lower	FY20	174	0	0	0	1.33	0.06	176
Percy Priest Lake, Upper	FY20	264	0	0	0	0	0.03	264
Pond Creek	FY20	0	0	0	0	0	0	0
Richland Creek	FY20	3,650	0	0	0	17	0.23	3,667
Sandy Creek	FY20	11	0	0	0	0	0	11
Sevenmile Creek	FY20	291	0	0	0	7.72	0.08	299
South Harpeth River, Lower	FY20	4.56	0	0	0	0	0	4.56
Stoner Creek	FY20	1,085	0	0	0	2.18	0.01	1,087
Stones River	FY20	141	0	0	0	0	0.07	141
Sugartree Creek	FY20	181	0	0	0	0.25	0.01	181
Sulpher Creek	FY20	14	0	0	0	0	<0.01	14
Sycamore Creek	FY20	10	0	0	0	0	0	10
Whites Creek	FY20	1,759	0	0	0	21	0.1	1,780

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]	**Total Pollutant Load Removed from Watershed** (lbs)
All Watersheds	FY20	181,095	0	17	59,316	328	0	240,756
Back Creek	FY20	0	0	0	0	0	0	0
Browns Creek	FY20	3,909	0	1.06	2,432	12	0	6,354
Bull Run Creek	FY20	0	0	0	0	0	0	0
Cooper Creek	FY20	1,262	0	0.09	712	14	0	1,989
Cub Creek	FY20	0	0	0	0	0	0	0
Cumberland River	FY20	102,273	0	0.68	13,583	53	0	115,910
Davidson Branch	FY20	358	0	0	178	0	0	536
Dry Creek	FY20	708	0	0	771	2.06	0	1,481
Ewing Creek	FY20	3,998	0	0.01	2,076	9.11	0	6,083
Gibson Creek	FY20	556	0	0.95	771	18	0	1,346
Gizzard Branch	FY20	471	0	0	178	0	0	649
Harpeth River	FY20	6,890	0	0.31	3,856	5.22	0	10,751
Indian Creek	FY20	0	0	0	0	0	0	0
Island Creek	FY20	0	0	0	0	0	0	0
Little Harpeth River	FY20	340	0	0	237	0	0	577
Loves Branch	FY20	230	0	0	237	0.86	0	468
Manskers Creek	FY20	416	0	0.92	0	0	0	417
Marrowbone Creek	FY20	59	0	0.02	0	0	0	59
Mill Creek Lower	FY20	5,601	0	4.07	7,533	34	0	13,173
Mill Creek Upper	FY20	2,099	0	0.39	2,254	44	0	4,398
Overall Creek	FY20	431	0	0	119	1.05	0	551
Pages Branch	FY20	790	0	0.09	890	2.33	0	1,682
Percy Priest Lake, Lower	FY20	1,278	0	0.1	4,805	0.75	0	6,084
Percy Priest Lake, Upper	FY20	3,285	0	0.02	652	0	0	3,937
Pond Creek	FY20	0	0	0	0	0	0	0
Richland Creek	FY20	21,353	0	0.16	4,152	12	0	25,517
Sandy Creek	FY20	138	0	0.01	237	0	0	375
Sevenmile Creek	FY20	2,022	0	1.24	4,449	20	0	6,492
South Harpeth River, Lower	FY20	48	0	0	178	0	0	226
Stoner Creek	FY20	9,797	0	0.13	3,559	2.39	0	13,358
Stones River	FY20	1,395	0	4.69	2,313	0	0	3,713
Sugartree Creek	FY20	1,201	0	2.02	1,008	0.35	0	2,212
Sulpher Creek	FY20	132	0	0	0	0	0	132
Sycamore Creek	FY20	49	0	0	0	0	0	49
Whites Creek	FY20	10,008	0	0.11	2,135	96	0	12,239

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]	**Total Pollutant Load Removed from Watershed** (lbs)
All Watersheds	FY20	1,410,438	0	45	118,633	589	0	1,529,704
Back Creek	FY20	0	0	0	0	0	0	0
Browns Creek	FY20	30,881	0	2.78	4,864	0	0	35,747
Bull Run Creek	FY20	0	0	0	0	0	0	0
Cooper Creek	FY20	9,254	0	0.24	1,424	55	0	10,733
Cub Creek	FY20	0	0	0	0	0	0	0
Cumberland River	FY20	836,617	0	1.79	27,167	157	0	863,942
Davidson Branch	FY20	2,912	0	0	356	0	0	3,268
Dry Creek	FY20	5,421	0	0	1,542	0	0	6,963
Ewing Creek	FY20	31,140	0	0.02	4,152	0	0	35,292
Gibson Creek	FY20	4,243	0	2.49	1,542	18	0	5,806
Gizzard Branch	FY20	3,743	0	0	356	0	0	4,099
Harpeth River	FY20	49,286	0	0.82	7,711	0	0	56,997
Indian Creek	FY20	0	0	0	0	0	0	0
Island Creek	FY20	0	0	0	0	0	0	0
Little Harpeth River	FY20	2,831	0	0	475	0	0	3,305
Loves Branch	FY20	1,957	0	0	475	0	0	2,432
Manskers Creek	FY20	3,235	0	2.42	0	0	0	3,237
Marrowbone Creek	FY20	445	0	0.05	0	0	0	445
Mill Creek Lower	FY20	46,255	0	11	15,066	39	0	61,371
Mill Creek Upper	FY20	17,590	0	1.04	4,508	179	0	22,277
Overall Creek	FY20	3,316	0	0	237	0	0	3,553
Pages Branch	FY20	6,880	0	0.24	1,779	0	0	8,659
Percy Priest Lake, Lower	FY20	15,781	0	0.27	9,609	0	0	25,390
Percy Priest Lake, Upper	FY20	24,924	0	0.05	1,305	0	0	26,229
Pond Creek	FY20	0	0	0	0	0	0	0
Richland Creek	FY20	138,313	0	0.41	8,304	0	0	146,618
Sandy Creek	FY20	1,092	0	0.02	475	0	0	1,567
Sevenmile Creek	FY20	19,210	0	3.26	8,897	0	0	28,111
South Harpeth River, Lower	FY20	325	0	0	356	0	0	681
Stoner Creek	FY20	67,628	0	0.34	7,118	0	0	74,746
Stones River	FY20	11,100	0	12	4,627	0	0	15,739
Sugartree Creek	FY20	9,374	0	5.31	2,017	0	0	11,396
Sulpher Creek	FY20	1,012	0	0	0	0	0	1,012
Sycamore Creek	FY20	355	0	0	0	0	0	355
Whites Creek	FY20	65,321	0	0.29	4,271	141	0	69,733

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]	**Total Pollutant Load Removed from Watershed** (lbs)
All Watersheds	FY20	4,923	0	0.66	0	3.53	0	4,927
Back Creek	FY20	0	0	0	0	0	0	0
Browns Creek	FY20	99	0	0.04	0	<0.01	0	99
Bull Run Creek	FY20	0	0	0	0	0	0	0
Cooper Creek	FY20	24	0	<0.01	0	0.33	0	24
Cub Creek	FY20	0	0	0	0	0	0	0
Cumberland River	FY20	3,006	0	0.03	0	0.93	0	3,007
Davidson Branch	FY20	10	0	0	0	0	0	10
Dry Creek	FY20	18	0	0	0	<0.01	0	18
Ewing Creek	FY20	103	0	<0.01	0	<0.01	0	103
Gibson Creek	FY20	17	0	0.04	0	0.11	0	17
Gizzard Branch	FY20	16	0	0	0	0	0	16
Harpeth River	FY20	132	0	0.01	0	<0.01	0	132
Indian Creek	FY20	0	0	0	0	0	0	0
Island Creek	FY20	0	0	0	0	0	0	0
Little Harpeth River	FY20	11	0	0	0	0	0	11
Loves Branch	FY20	6.67	0	0	0	<0.01	0	6.67
Manskers Creek	FY20	12	0	0.04	0	0	0	12
Marrowbone Creek	FY20	2.03	0	<0.01	0	0	0	2.03
Mill Creek Lower	FY20	176	0	0.16	0	0.23	0	176
Mill Creek Upper	FY20	65	0	0.02	0	1.06	0	66
Overall Creek	FY20	11	0	0	0	<0.01	0	11
Pages Branch	FY20	27	0	<0.01	0	<0.01	0	27
Percy Priest Lake, Lower	FY20	35	0	<0.01	0	<0.01	0	35
Percy Priest Lake, Upper	FY20	77	0	<0.01	0	0	0	77
Pond Creek	FY20	0	0	0	0	0	0	0
Richland Creek	FY20	459	0	0.01	0	<0.01	0	459
Sandy Creek	FY20	3.87	0	<0.01	0	0	0	3.87
Sevenmile Creek	FY20	58	0	0.05	0	<0.01	0	58
South Harpeth River, Lower	FY20	1.04	0	0	0	0	0	1.04
Stoner Creek	FY20	260	0	<0.01	0	<0.01	0	260
Stones River	FY20	40	0	0.18	0	0	0	40
Sugartree Creek	FY20	34	0	0.08	0	<0.01	0	35
Sulpher Creek	FY20	3.67	0	0	0	0	0	3.67
Sycamore Creek	FY20	1.21	0	0	0	0	0	1.21
Whites Creek	FY20	214	0	<0.01	0	0.85	0	215

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: TKN 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]	**Total Pollutant Load Removed from Watershed** (lbs)
All Watersheds	FY20	24,286	0	5.4	0	20	0	24,311
Back Creek	FY20	0	0	0	0	0	0	0
Browns Creek	FY20	527	0	0.33	0	0.93	0	529
Bull Run Creek	FY20	0	0	0	0	0	0	0
Cooper Creek	FY20	191	0	0.03	0	0.57	0	192
Cub Creek	FY20	0	0	0	0	0	0	0
Cumberland River	FY20	14,481	0	0.22	0	2.55	0	14,484
Davidson Branch	FY20	38	0	0	0	0	0	38
Dry Creek	FY20	75	0	0	0	0.16	0	75
Ewing Creek	FY20	389	0	<0.01	0	0.71	0	390
Gibson Creek	FY20	100	0	0.3	0	1.23	0	102
Gizzard Branch	FY20	80	0	0	0	0	0	80
Harpeth River	FY20	1,054	0	0.1	0	0.41	0	1,055
Indian Creek	FY20	0	0	0	0	0	0	0
Island Creek	FY20	0	0	0	0	0	0	0
Little Harpeth River	FY20	65	0	0	0	0	0	65
Loves Branch	FY20	19	0	0	0	0.07	0	19
Manskers Creek	FY20	53	0	0.29	0	0	0	53
Marrowbone Creek	FY20	11	0	0.01	0	0	0	11
Mill Creek Lower	FY20	766	0	1.29	0	2.29	0	770
Mill Creek Upper	FY20	344	0	0.12	0	1.64	0	346
Overall Creek	FY20	53	0	0	0	0.08	0	53
Pages Branch	FY20	105	0	0.03	0	0.18	0	105
Percy Priest Lake, Lower	FY20	245	0	0.03	0	0.06	0	245
Percy Priest Lake, Upper	FY20	297	0	0.01	0	0	0	297
Pond Creek	FY20	0	0	0	0	0	0	0
Richland Creek	FY20	2,225	0	0.05	0	0.95	0	2,226
Sandy Creek	FY20	18	0	<0.01	0	0	0	18
Sevenmile Creek	FY20	350	0	0.39	0	1.54	0	352
South Harpeth River, Lower	FY20	7.22	0	0	0	0	0	7.22
Stoner Creek	FY20	1,446	0	0.04	0	0.19	0	1,447
Stones River	FY20	173	0	1.49	0	0	0	174
Sugartree Creek	FY20	169	0	0.64	0	0.03	0	170
Sulpher Creek	FY20	16	0	0	0	0	0	16
Sycamore Creek	FY20	8.08	0	0	0	0	0	8.08
Whites Creek	FY20	980	0	0.03	0	6.03	0	986

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]	**Total Pollutant Load Removed from Watershed** (lbs)
All Watersheds	FY20	13,534	0	0.08	0	1.29	0	13,536
Back Creek	FY20	0	0	0	0	0	0	0
Browns Creek	FY20	197	0	<0.01	0	0	0	197
Bull Run Creek	FY20	0	0	0	0	0	0	0
Cooper Creek	FY20	64	0	<0.01	0	0.12	0	64
Cub Creek	FY20	0	0	0	0	0	0	0
Cumberland River	FY20	7,670	0	<0.01	0	0.34	0	7,670
Davidson Branch	FY20	22	0	0	0	0	0	22
Dry Creek	FY20	37	0	0	0	0	0	37
Ewing Creek	FY20	186	0	<0.01	0	0	0	186
Gibson Creek	FY20	37	0	<0.01	0	0.04	0	37
Gizzard Branch	FY20	34	0	0	0	0	0	34
Harpeth River	FY20	393	0	<0.01	0	0	0	393
Indian Creek	FY20	0	0	0	0	0	0	0
Island Creek	FY20	0	0	0	0	0	0	0
Little Harpeth River	FY20	24	0	0	0	0	0	24
Loves Branch	FY20	14	0	0	0	0	0	14
Manskers Creek	FY20	24	0	<0.01	0	0	0	24
Marrowbone Creek	FY20	4.48	0	<0.01	0	0	0	4.48
Mill Creek Lower	FY20	299	0	0.02	0	0.08	0	299
Mill Creek Upper	FY20	122	0	<0.01	0	0.39	0	122
Overall Creek	FY20	30	0	0	0	0	0	30
Pages Branch	FY20	41	0	<0.01	0	0	0	41
Percy Priest Lake, Lower	FY20	108	0	<0.01	0	0	0	108
Percy Priest Lake, Upper	FY20	150	0	<0.01	0	0	0	150
Pond Creek	FY20	0	0	0	0	0	0	0
Richland Creek	FY20	2,005	0	<0.01	0	0	0	2,005
Sandy Creek	FY20	6.7	0	<0.01	0	0	0	6.7
Sevenmile Creek	FY20	162	0	0.01	0	0	0	162
South Harpeth River, Lower	FY20	3.26	0	0	0	0	0	3.26
Stoner Creek	FY20	777	0	<0.01	0	0	0	777
Stones River	FY20	79	0	0.02	0	0	0	79
Sugartree Creek	FY20	95	0	0.01	0	0	0	95
Sulpher Creek	FY20	6.87	0	0	0	0	0	6.87
Sycamore Creek	FY20	4	0	0	0	0	0	4
Whites Creek	FY20	939	0	<0.01	0	0.31	0	939

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]	**Total Pollutant Load Removed from Watershed** (lbs)
All Watersheds	FY20	32,014	0	3.91	17,017	25	0	49,060
Back Creek	FY20	0	0	0	0	0	0	0
Browns Creek	FY20	650	0	0.24	698	1.1	0	1,349
Bull Run Creek	FY20	0	0	0	0	0	0	0
Cooper Creek	FY20	240	0	0.02	204	0.86	0	445
Cub Creek	FY20	0	0	0	0	0	0	0
Cumberland River	FY20	19,073	0	0.16	3,897	3.55	0	22,974
Davidson Branch	FY20	53	0	0	51	0	0	104
Dry Creek	FY20	98	0	0	221	0.19	0	319
Ewing Creek	FY20	503	0	<0.01	596	0.84	0	1,099
Gibson Creek	FY20	107	0	0.22	221	1.51	0	330
Gizzard Branch	FY20	92	0	0	51	0	0	143
Harpeth River	FY20	1,304	0	0.07	1,106	0.48	0	2,411
Indian Creek	FY20	0	0	0	0	0	0	0
Island Creek	FY20	0	0	0	0	0	0	0
Little Harpeth River	FY20	69	0	0	68	0	0	138
Loves Branch	FY20	28	0	0	68	0.08	0	96
Manskers Creek	FY20	66	0	0.21	0	0	0	66
Marrowbone Creek	FY20	12	0	<0.01	0	0	0	12
Mill Creek Lower	FY20	851	0	0.93	2,161	2.84	0	3,016
Mill Creek Upper	FY20	364	0	0.09	647	2.56	0	1,013
Overall Creek	FY20	68	0	0	34	0.1	0	103
Pages Branch	FY20	114	0	0.02	255	0.21	0	369
Percy Priest Lake, Lower	FY20	308	0	0.02	1,378	0.07	0	1,687
Percy Priest Lake, Upper	FY20	361	0	<0.01	187	0	0	548
Pond Creek	FY20	0	0	0	0	0	0	0
Richland Creek	FY20	3,285	0	0.04	1,191	1.11	0	4,477
Sandy Creek	FY20	21	0	<0.01	68	0	0	89
Sevenmile Creek	FY20	423	0	0.28	1,276	1.81	0	1,702
South Harpeth River, Lower	FY20	9.63	0	0	51	0	0	61
Stoner Creek	FY20	2,010	0	0.03	1,021	0.22	0	3,031
Stones River	FY20	212	0	1.07	664	0	0	877
Sugartree Creek	FY20	214	0	0.46	289	0.03	0	504
Sulpher Creek	FY20	18	0	0	0	0	0	18
Sycamore Creek	FY20	7.91	0	0	0	0	0	7.91
Whites Creek	FY20	1,451	0	0.03	613	7.6	0	2,072

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]	**Total Pollutant Load Removed from Watershed** (lbs)
All Watersheds	FY20	8,259	0	0	0	19	0	8,278
Back Creek	FY20	0	0	0	0	0	0	0
Browns Creek	FY20	230	0	0	0	1.18	0	232
Bull Run Creek	FY20	0	0	0	0	0	0	0
Cooper Creek	FY20	133	0	0	0	0.13	0	133
Cub Creek	FY20	0	0	0	0	0	0	0
Cumberland River	FY20	4,794	0	0	0	1.56	0	4,795
Davidson Branch	FY20	11	0	0	0	0	0	11
Dry Creek	FY20	15	0	0	0	0.2	0	16
Ewing Creek	FY20	68	0	0	0	0.89	0	69
Gibson Creek	FY20	24	0	0	0	1.36	0	26
Gizzard Branch	FY20	16	0	0	0	0	0	16
Harpeth River	FY20	685	0	0	0	0.51	0	685
Indian Creek	FY20	0	0	0	0	0	0	0
Island Creek	FY20	0	0	0	0	0	0	0
Little Harpeth River	FY20	13	0	0	0	0	0	13
Loves Branch	FY20	5.1	0	0	0	0.09	0	5.18
Manskers Creek	FY20	9.79	0	0	0	0	0	9.79
Marrowbone Creek	FY20	1.51	0	0	0	0	0	1.51
Mill Creek Lower	FY20	131	0	0	0	2.49	0	134
Mill Creek Upper	FY20	99	0	0	0	0.17	0	99
Overall Creek	FY20	24	0	0	0	0.1	0	24
Pages Branch	FY20	16	0	0	0	0.23	0	16
Percy Priest Lake, Lower	FY20	150	0	0	0	0.07	0	150
Percy Priest Lake, Upper	FY20	59	0	0	0	0	0	59
Pond Creek	FY20	0	0	0	0	0	0	0
Richland Creek	FY20	825	0	0	0	1.19	0	826
Sandy Creek	FY20	3.12	0	0	0	0	0	3.12
Sevenmile Creek	FY20	135	0	0	0	1.95	0	137
South Harpeth River, Lower	FY20	3.21	0	0	0	0	0	3.21
Stoner Creek	FY20	345	0	0	0	0.24	0	346
Stones River	FY20	36	0	0	0	0	0	36
Sugartree Creek	FY20	53	0	0	0	0.03	0	53
Sulpher Creek	FY20	2.15	0	0	0	0	0	2.15
Sycamore Creek	FY20	2.25	0	0	0	0	0	2.25
Whites Creek	FY20	369	0	0	0	6.1	0	376

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]	**Total Pollutant Load Removed from Watershed** (lbs)
All Watersheds	FY20	13,355	0	0.7	6,807	19	0	20,181
Back Creek	FY20	0	0	0	0	0	0	0
Browns Creek	FY20	367	0	0.04	279	1.2	0	647
Bull Run Creek	FY20	0	0	0	0	0	0	0
Cooper Creek	FY20	189	0	<0.01	82	0.13	0	270
Cub Creek	FY20	0	0	0	0	0	0	0
Cumberland River	FY20	7,851	0	0.03	1,559	1.59	0	9,411
Davidson Branch	FY20	20	0	0	20	0	0	40
Dry Creek	FY20	33	0	0	88	0.21	0	122
Ewing Creek	FY20	173	0	<0.01	238	0.91	0	412
Gibson Creek	FY20	40	0	0.04	88	1.38	0	130
Gizzard Branch	FY20	26	0	0	20	0	0	47
Harpeth River	FY20	971	0	0.01	442	0.52	0	1,414
Indian Creek	FY20	0	0	0	0	0	0	0
Island Creek	FY20	0	0	0	0	0	0	0
Little Harpeth River	FY20	23	0	0	27	0	0	50
Loves Branch	FY20	11	0	0	27	0.09	0	38
Manskers Creek	FY20	19	0	0.04	0	0	0	19
Marrowbone Creek	FY20	2.93	0	<0.01	0	0	0	2.93
Mill Creek Lower	FY20	281	0	0.17	864	2.54	0	1,148
Mill Creek Upper	FY20	170	0	0.02	259	0.18	0	429
Overall Creek	FY20	38	0	0	14	0.11	0	52
Pages Branch	FY20	37	0	<0.01	102	0.23	0	139
Percy Priest Lake, Lower	FY20	245	0	<0.01	551	0.07	0	796
Percy Priest Lake, Upper	FY20	157	0	<0.01	75	0	0	232
Pond Creek	FY20	0	0	0	0	0	0	0
Richland Creek	FY20	1,231	0	0.01	476	1.21	0	1,709
Sandy Creek	FY20	7.02	0	<0.01	27	0	0	34
Sevenmile Creek	FY20	220	0	0.05	511	1.99	0	733
South Harpeth River, Lower	FY20	4.62	0	0	20	0	0	25
Stoner Creek	FY20	510	0	0.01	408	0.24	0	919
Stones River	FY20	71	0	0.19	265	0	0	337
Sugartree Creek	FY20	85	0	0.08	116	0.03	0	201
Sulpher Creek	FY20	5.57	0	0	0	0	0	5.57
Sycamore Creek	FY20	4.13	0	0	0	0	0	4.13
Whites Creek	FY20	563	0	<0.01	245	6.19	0	814

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]	**Total Pollutant Load Removed from Watershed** (lbs)
All Watersheds	FY20	81	0	<0.01	493	29	0	603
Back Creek	FY20	0	0	0	0	0	0	0
Browns Creek	FY20	1.36	0	<0.01	20	0	0	22
Bull Run Creek	FY20	0	0	0	0	0	0	0
Cooper Creek	FY20	0.33	0	<0.01	5.91	2.76	0	9.01
Cub Creek	FY20	0	0	0	0	0	0	0
Cumberland River	FY20	47	0	<0.01	113	7.83	0	168
Davidson Branch	FY20	0.15	0	0	1.48	0	0	1.63
Dry Creek	FY20	0.27	0	0	6.4	0	0	6.68
Ewing Creek	FY20	1.54	0	<0.01	17	0	0	19
Gibson Creek	FY20	0.26	0	<0.01	6.4	0.92	0	7.58
Gizzard Branch	FY20	0.23	0	0	1.48	0	0	1.7
Harpeth River	FY20	2.06	0	<0.01	32	0	0	34
Indian Creek	FY20	0	0	0	0	0	0	0
Island Creek	FY20	0	0	0	0	0	0	0
Little Harpeth River	FY20	0.17	0	0	1.97	0	0	2.14
Loves Branch	FY20	0.1	0	0	1.97	0	0	2.07
Manskers Creek	FY20	0.17	0	<0.01	0	0	0	0.17
Marrowbone Creek	FY20	0.04	0	<0.01	0	0	0	0.04
Mill Creek Lower	FY20	2.51	0	<0.01	63	1.94	0	67
Mill Creek Upper	FY20	0.95	0	<0.01	19	8.94	0	29
Overall Creek	FY20	0.18	0	0	0.99	0	0	1.17
Pages Branch	FY20	0.38	0	<0.01	7.39	0	0	7.77
Percy Priest Lake, Lower	FY20	0.61	0	<0.01	40	0	0	41
Percy Priest Lake, Upper	FY20	1.36	0	<0.01	5.42	0	0	6.78
Pond Creek	FY20	0	0	0	0	0	0	0
Richland Creek	FY20	10	0	<0.01	34	0	0	45
Sandy Creek	FY20	0.05	0	<0.01	1.97	0	0	2.02
Sevenmile Creek	FY20	0.96	0	<0.01	37	0	0	38
South Harpeth River, Lower	FY20	0.02	0	0	1.48	0	0	1.49
Stoner Creek	FY20	3.8	0	<0.01	30	0	0	33
Stones River	FY20	0.58	0	<0.01	19	0	0	20
Sugartree Creek	FY20	0.55	0	<0.01	8.37	0	0	8.93
Sulpher Creek	FY20	0.06	0	0	0	0	0	0.06
Sycamore Creek	FY20	0.03	0	0	0	0	0	0.03
Whites Creek	FY20	4.87	0	<0.01	18	7.06	0	30

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]	**Total Pollutant Load Removed from Watershed** (lbs)
All Watersheds	FY20	151	0	<0.01	315	0	0	465
Back Creek	FY20	0	0	0	0	0	0	0
Browns Creek	FY20	1.67	0	<0.01	13	0	0	15
Bull Run Creek	FY20	0	0	0	0	0	0	0
Cooper Creek	FY20	0.27	0	<0.01	3.78	0	0	4.05
Cub Creek	FY20	0	0	0	0	0	0	0
Cumberland River	FY20	83	0	<0.01	72	0	0	155
Davidson Branch	FY20	0.24	0	0	0.94	0	0	1.19
Dry Creek	FY20	0.43	0	0	4.09	0	0	4.52
Ewing Creek	FY20	2.05	0	<0.01	11	0	0	13
Gibson Creek	FY20	0.53	0	<0.01	4.09	0	0	4.62
Gizzard Branch	FY20	0.48	0	0	0.94	0	0	1.43
Harpeth River	FY20	2.46	0	<0.01	20	0	0	23
Indian Creek	FY20	0	0	0	0	0	0	0
Island Creek	FY20	0	0	0	0	0	0	0
Little Harpeth River	FY20	0.35	0	0	1.26	0	0	1.61
Loves Branch	FY20	0.13	0	0	1.26	0	0	1.39
Manskers Creek	FY20	0.3	0	<0.01	0	0	0	0.3
Marrowbone Creek	FY20	0.08	0	<0.01	0	0	0	0.08
Mill Creek Lower	FY20	3.81	0	<0.01	40	0	0	44
Mill Creek Upper	FY20	1.47	0	<0.01	12	0	0	13
Overall Creek	FY20	0.31	0	0	0.63	0	0	0.94
Pages Branch	FY20	0.53	0	<0.01	4.72	0	0	5.25
Percy Priest Lake, Lower	FY20	1.51	0	<0.01	25	0	0	27
Percy Priest Lake, Upper	FY20	1.55	0	<0.01	3.46	0	0	5.02
Pond Creek	FY20	0	0	0	0	0	0	0
Richland Creek	FY20	24	0	<0.01	22	0	0	46
Sandy Creek	FY20	0.08	0	<0.01	1.26	0	0	1.34
Sevenmile Creek	FY20	2.25	0	<0.01	24	0	0	26
South Harpeth River, Lower	FY20	0.03	0	0	0.94	0	0	0.98
Stoner Creek	FY20	11	0	<0.01	19	0	0	29
Stones River	FY20	0.96	0	<0.01	12	0	0	13
Sugartree Creek	FY20	1.14	0	<0.01	5.35	0	0	6.48
Sulpher Creek	FY20	0.09	0	0	0	0	0	0.09
Sycamore Creek	FY20	0.05	0	0	0	0	0	0.05
Whites Creek	FY20	11	0	<0.01	11	0	0	22

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]	**Total Pollutant Load Removed from Watershed** (lbs)
All Watersheds	FY20	1,888	0	<0.01	1,354	3,128	0	6,370
Back Creek	FY20	0	0	0	0	0	0	0
Browns Creek	FY20	42	0	<0.01	56	82	0	180
Bull Run Creek	FY20	0	0	0	0	0	0	0
Cooper Creek	FY20	10	0	<0.01	16	182	0	208
Cub Creek	FY20	0	0	0	0	0	0	0
Cumberland River	FY20	1,067	0	<0.01	310	596	0	1,973
Davidson Branch	FY20	3.81	0	0	4.06	0	0	7.87
Dry Creek	FY20	8.61	0	0	18	14	0	40
Ewing Creek	FY20	51	0	<0.01	47	63	0	161
Gibson Creek	FY20	6.51	0	<0.01	18	151	0	175
Gizzard Branch	FY20	5.24	0	0	4.06	0	0	9.3
Harpeth River	FY20	58	0	<0.01	88	36	0	182
Indian Creek	FY20	0	0	0	0	0	0	0
Island Creek	FY20	0	0	0	0	0	0	0
Little Harpeth River	FY20	3.86	0	0	5.42	0	0	9.28
Loves Branch	FY20	2.55	0	0	5.42	5.82	0	14
Manskers Creek	FY20	5.25	0	<0.01	0	0	0	5.25
Marrowbone Creek	FY20	0.97	0	<0.01	0	0	0	0.97
Mill Creek Lower	FY20	78	0	<0.01	172	292	0	541
Mill Creek Upper	FY20	29	0	<0.01	51	571	0	651
Overall Creek	FY20	4.27	0	0	2.71	7.25	0	14
Pages Branch	FY20	12	0	<0.01	20	16	0	48
Percy Priest Lake, Lower	FY20	12	0	<0.01	110	5.88	0	127
Percy Priest Lake, Upper	FY20	45	0	<0.01	15	0	0	60
Pond Creek	FY20	0	0	0	0	0	0	0
Richland Creek	FY20	204	0	<0.01	95	84	0	383
Sandy Creek	FY20	1.76	0	<0.01	5.42	0	0	7.17
Sevenmile Creek	FY20	21	0	<0.01	102	134	0	256
South Harpeth River, Lower	FY20	0.38	0	0	4.06	0	0	4.45
Stoner Creek	FY20	85	0	<0.01	81	16	0	182
Stones River	FY20	17	0	<0.01	53	0	0	70
Sugartree Creek	FY20	12	0	<0.01	23	2.38	0	37
Sulpher Creek	FY20	1.93	0	0	0	0	0	1.93
Sycamore Creek	FY20	0.63	0	0	0	0	0	0.63
Whites Creek	FY20	100	0	<0.01	49	871	0	1,020

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]	**Total Pollutant Load Removed from Watershed** (lbs)
All Watersheds	FY20	63	0	<0.01	350	0	0	413
Back Creek	FY20	0	0	0	0	0	0	0
Browns Creek	FY20	1.17	0	<0.01	14	0	0	16
Bull Run Creek	FY20	0	0	0	0	0	0	0
Cooper Creek	FY20	0.38	0	<0.01	4.2	0	0	4.59
Cub Creek	FY20	0	0	0	0	0	0	0
Cumberland River	FY20	40	0	<0.01	80	0	0	120
Davidson Branch	FY20	0.12	0	0	1.05	0	0	1.17
Dry Creek	FY20	0.18	0	0	4.55	0	0	4.73
Ewing Creek	FY20	1.07	0	<0.01	12	0	0	13
Gibson Creek	FY20	0.15	0	<0.01	4.55	0	0	4.7
Gizzard Branch	FY20	0.14	0	0	1.05	0	0	1.19
Harpeth River	FY20	2.05	0	<0.01	23	0	0	25
Indian Creek	FY20	0	0	0	0	0	0	0
Island Creek	FY20	0	0	0	0	0	0	0
Little Harpeth River	FY20	0.1	0	0	1.4	0	0	1.5
Loves Branch	FY20	0.09	0	0	1.4	0	0	1.49
Manskers Creek	FY20	0.1	0	<0.01	0	0	0	0.1
Marrowbone Creek	FY20	0.02	0	<0.01	0	0	0	0.02
Mill Creek Lower	FY20	1.56	0	<0.01	44	0	0	46
Mill Creek Upper	FY20	0.63	0	<0.01	13	0	0	14
Overall Creek	FY20	0.15	0	0	0.7	0	0	0.85
Pages Branch	FY20	0.23	0	<0.01	5.25	0	0	5.49
Percy Priest Lake, Lower	FY20	0.83	0	<0.01	28	0	0	29
Percy Priest Lake, Upper	FY20	0.93	0	<0.01	3.85	0	0	4.78
Pond Creek	FY20	0	0	0	0	0	0	0
Richland Creek	FY20	6.08	0	<0.01	25	0	0	31
Sandy Creek	FY20	0.03	0	<0.01	1.4	0	0	1.43
Sevenmile Creek	FY20	0.85	0	<0.01	26	0	0	27
South Harpeth River, Lower	FY20	0.01	0	0	1.05	0	0	1.06
Stoner Creek	FY20	2.28	0	<0.01	21	0	0	23
Stones River	FY20	0.39	0	<0.01	14	0	0	14
Sugartree Creek	FY20	0.39	0	<0.01	5.95	0	0	6.34
Sulpher Creek	FY20	0.04	0	0	0	0	0	0.04
Sycamore Creek	FY20	0.01	0	0	0	0	0	0.01
Whites Creek	FY20	2.9	0	<0.01	13	0	0	15

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]	**Total Pollutant Load Removed from Watershed** (lbs)
All Watersheds	FY20	182	0	<0.01	363	229	0	773
Back Creek	FY20	0	0	0	0	0	0	0
Browns Creek	FY20	4.58	0	<0.01	15	1.67	0	21
Bull Run Creek	FY20	0	0	0	0	0	0	0
Cooper Creek	FY20	1.1	0	<0.01	4.35	19	0	25
Cub Creek	FY20	0	0	0	0	0	0	0
Cumberland River	FY20	109	0	<0.01	83	56	0	248
Davidson Branch	FY20	0.44	0	0	1.09	0	0	1.53
Dry Creek	FY20	0.93	0	0	4.71	0.29	0	5.93
Ewing Creek	FY20	5.83	0	<0.01	13	1.27	0	20
Gibson Creek	FY20	0.46	0	<0.01	4.71	8.23	0	13
Gizzard Branch	FY20	0.41	0	0	1.09	0	0	1.49
Harpeth River	FY20	5.53	0	<0.01	24	0.73	0	30
Indian Creek	FY20	0	0	0	0	0	0	0
Island Creek	FY20	0	0	0	0	0	0	0
Little Harpeth River	FY20	0.28	0	0	1.45	0	0	1.73
Loves Branch	FY20	0.34	0	0	1.45	0.12	0	1.91
Manskers Creek	FY20	0.5	0	<0.01	0	0	0	0.5
Marrowbone Creek	FY20	0.07	0	<0.01	0	0	0	0.07
Mill Creek Lower	FY20	7.37	0	<0.01	46	17	0	70
Mill Creek Upper	FY20	2.42	0	<0.01	14	62	0	78
Overall Creek	FY20	0.44	0	0	0.73	0.15	0	1.31
Pages Branch	FY20	1.11	0	<0.01	5.44	0.32	0	6.88
Percy Priest Lake, Lower	FY20	1.59	0	<0.01	29	0.1	0	31
Percy Priest Lake, Upper	FY20	5.13	0	<0.01	3.99	0	0	9.12
Pond Creek	FY20	0	0	0	0	0	0	0
Richland Creek	FY20	15	0	<0.01	25	1.69	0	42
Sandy Creek	FY20	0.18	0	<0.01	1.45	0	0	1.63
Sevenmile Creek	FY20	2.01	0	<0.01	27	2.75	0	32
South Harpeth River, Lower	FY20	0.03	0	0	1.09	0	0	1.12
Stoner Creek	FY20	6.21	0	<0.01	22	0.33	0	28
Stones River	FY20	1.72	0	<0.01	14	0	0	16
Sugartree Creek	FY20	1.04	0	<0.01	6.16	0.05	0	7.26
Sulpher Creek	FY20	0.2	0	0	0	0	0	0.2
Sycamore Creek	FY20	0.04	0	0	0	0	0	0.04
Whites Creek	FY20	7.66	0	<0.01	13	57	0	78

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]	**Total Pollutant Load Removed from Watershed** (lbs)
All Watersheds	FY20	60,090	0	6.77	8,024	0	0	68,121
Back Creek	FY20	0	0	0	0	0	0	0
Browns Creek	FY20	918	0	0.42	329	0	0	1,248
Bull Run Creek	FY20	0	0	0	0	0	0	0
Cooper Creek	FY20	191	0	0.04	96	0	0	287
Cub Creek	FY20	0	0	0	0	0	0	0
Cumberland River	FY20	36,159	0	0.27	1,838	0	0	37,996
Davidson Branch	FY20	122	0	0	24	0	0	146
Dry Creek	FY20	200	0	0	104	0	0	305
Ewing Creek	FY20	1,146	0	<0.01	281	0	0	1,427
Gibson Creek	FY20	139	0	0.38	104	0	0	243
Gizzard Branch	FY20	146	0	0	24	0	0	170
Harpeth River	FY20	1,122	0	0.12	522	0	0	1,644
Indian Creek	FY20	0	0	0	0	0	0	0
Island Creek	FY20	0	0	0	0	0	0	0
Little Harpeth River	FY20	106	0	0	32	0	0	138
Loves Branch	FY20	90	0	0	32	0	0	123
Manskers Creek	FY20	118	0	0.36	0	0	0	118
Marrowbone Creek	FY20	19	0	0.01	0	0	0	19
Mill Creek Lower	FY20	1,574	0	1.61	1,019	0	0	2,595
Mill Creek Upper	FY20	540	0	0.16	305	0	0	845
Overall Creek	FY20	131	0	0	16	0	0	147
Pages Branch	FY20	228	0	0.04	120	0	0	348
Percy Priest Lake, Lower	FY20	883	0	0.04	650	0	0	1,533
Percy Priest Lake, Upper	FY20	910	0	0.01	88	0	0	998
Pond Creek	FY20	0	0	0	0	0	0	0
Richland Creek	FY20	7,104	0	0.06	562	0	0	7,666
Sandy Creek	FY20	36	0	<0.01	32	0	0	68
Sevenmile Creek	FY20	929	0	0.49	602	0	0	1,531
South Harpeth River, Lower	FY20	11	0	0	24	0	0	35
Stoner Creek	FY20	3,061	0	0.05	481	0	0	3,543
Stones River	FY20	417	0	1.86	313	0	0	731
Sugartree Creek	FY20	398	0	0.8	136	0	0	535
Sulpher Creek	FY20	39	0	0	0	0	0	39
Sycamore Creek	FY20	13	0	0	0	0	0	13
Whites Creek	FY20	3,341	0	0.04	289	0	0	3,630

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]	**Total Pollutant Load Removed from Watershed** (lbs)
All Watersheds	FY20	638,562	9,986,460	57,869	2,042,040	92	0	12,725,022
Back Creek	FY20	0	0	0	0	0	0	0
Browns Creek	FY20	13,850	452,683	1,484	83,724	0	0	551,741
Bull Run Creek	FY20	0	0	0	0	0	0	0
Cooper Creek	FY20	3,754	103,931	0.1	24,504	8.64	0	132,198
Cub Creek	FY20	0	0	0	0	0	0	0
Cumberland River	FY20	402,786	2,860,826	9,642	467,627	24	0	3,740,906
Davidson Branch	FY20	1,407	531,332	0	6,126	0	0	538,866
Dry Creek	FY20	2,298	47,720	4,450	26,547	0	0	81,014
Ewing Creek	FY20	14,010	470,628	2,225	71,471	0	0	558,335
Gibson Creek	FY20	1,813	23,504	1.04	26,547	2.87	0	51,867
Gizzard Branch	FY20	1,623	2,356	0	6,126	0	0	10,105
Harpeth River	FY20	19,790	530,839	3,709	132,733	0	0	687,071
Indian Creek	FY20	0	1,548	742	0	0	0	2,289
Island Creek	FY20	0	0	0	0	0	0	0
Little Harpeth River	FY20	1,197	17,676	0	8,168	0	0	27,041
Loves Branch	FY20	995	7,354	0	8,168	0	0	16,517
Manskers Creek	FY20	1,389	43,829	2,226	0	0	0	47,443
Marrowbone Creek	FY20	223	6,842	2,225	0	0	0	9,289
Mill Creek Lower	FY20	22,340	764,991	5,196	259,339	6.06	0	1,051,872
Mill Creek Upper	FY20	8,515	719,796	2,967	77,598	28	0	808,904
Overall Creek	FY20	1,559	28,776	3,708	4,084	0	0	38,128
Pages Branch	FY20	3,711	857,775	1,483	30,631	0	0	893,600
Percy Priest Lake, Lower	FY20	8,299	54,959	742	165,405	0	0	229,405
Percy Priest Lake, Upper	FY20	12,203	229,831	2,225	22,462	0	0	266,721
Pond Creek	FY20	0	0	0	0	0	0	0
Richland Creek	FY20	51,404	703,132	0.17	142,943	0	0	897,479
Sandy Creek	FY20	476	52,548	0.01	8,168	0	0	61,192
Sevenmile Creek	FY20	8,873	128,276	743	153,153	0	0	291,045
South Harpeth River, Lower	FY20	108	6,586	742	6,126	0	0	13,562
Stoner Creek	FY20	20,949	114,017	1,483	122,522	0	0	258,972
Stones River	FY20	4,926	623,533	2,230	79,640	0	0	710,329
Sugartree Creek	FY20	4,023	314,067	1,486	34,715	0	0	354,290
Sulpher Creek	FY20	490	16,484	1,483	0	0	0	18,457
Sycamore Creek	FY20	160	5,488	742	0	0	0	6,390
Whites Creek	FY20	25,389	265,134	5,933	73,513	22	0	369,992

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]	**Total Pollutant Load Removed from Watershed** (lbs)
All Watersheds	FY20	2,431,104	0	0	0	0	0	2,431,104
Back Creek	FY20	0	0	0	0	0	0	0
Browns Creek	FY20	48,381	0	0	0	0	0	48,381
Bull Run Creek	FY20	0	0	0	0	0	0	0
Cooper Creek	FY20	19,376	0	0	0	0	0	19,376
Cub Creek	FY20	0	0	0	0	0	0	0
Cumberland River	FY20	1,533,888	0	0	0	0	0	1,533,888
Davidson Branch	FY20	4,041	0	0	0	0	0	4,041
Dry Creek	FY20	6,289	0	0	0	0	0	6,289
Ewing Creek	FY20	30,203	0	0	0	0	0	30,203
Gibson Creek	FY20	6,700	0	0	0	0	0	6,700
Gizzard Branch	FY20	6,685	0	0	0	0	0	6,685
Harpeth River	FY20	98,535	0	0	0	0	0	98,535
Indian Creek	FY20	0	0	0	0	0	0	0
Island Creek	FY20	0	0	0	0	0	0	0
Little Harpeth River	FY20	5,191	0	0	0	0	0	5,191
Loves Branch	FY20	2,215	0	0	0	0	0	2,215
Manskers Creek	FY20	4,548	0	0	0	0	0	4,548
Marrowbone Creek	FY20	647	0	0	0	0	0	647
Mill Creek Lower	FY20	51,460	0	0	0	0	0	51,460
Mill Creek Upper	FY20	23,697	0	0	0	0	0	23,697
Overall Creek	FY20	4,740	0	0	0	0	0	4,740
Pages Branch	FY20	6,673	0	0	0	0	0	6,673
Percy Priest Lake, Lower	FY20	48,459	0	0	0	0	0	48,459
Percy Priest Lake, Upper	FY20	15,699	0	0	0	0	0	15,699
Pond Creek	FY20	0	0	0	0	0	0	0
Richland Creek	FY20	190,169	0	0	0	0	0	190,169
Sandy Creek	FY20	1,367	0	0	0	0	0	1,367
Sevenmile Creek	FY20	46,088	0	0	0	0	0	46,088
South Harpeth River, Lower	FY20	788	0	0	0	0	0	788
Stoner Creek	FY20	168,151	0	0	0	0	0	168,151
Stones River	FY20	14,192	0	0	0	0	0	14,192
Sugartree Creek	FY20	16,203	0	0	0	0	0	16,203
Sulpher Creek	FY20	921	0	0	0	0	0	921
Sycamore Creek	FY20	282	0	0	0	0	0	282
Whites Creek	FY20	75,516	0	0	0	0	0	75,516

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]	**Total Pollutant Load Removed from Watershed** (MPN e9)
All Watersheds	FY20	351,964	0	3,517	124,339	<0.01	0	479,819
Back Creek	FY20	0	0	0	0	0	0	0
Browns Creek	FY20	13,861	0	218	5,098	<0.01	0	19,176
Bull Run Creek	FY20	0	0	0	0	0	0	0
Cooper Creek	FY20	8,549	0	19	1,492	<0.01	0	10,060
Cub Creek	FY20	0	0	0	0	0	0	0
Cumberland River	FY20	200,884	0	140	28,474	<0.01	0	229,498
Davidson Branch	FY20	440	0	0	373	0	0	813
Dry Creek	FY20	548	0	0	1,616	<0.01	0	2,164
Ewing Creek	FY20	2,636	0	1.89	4,352	<0.01	0	6,989
Gibson Creek	FY20	1,366	0	195	1,616	<0.01	0	3,178
Gizzard Branch	FY20	567	0	0	373	0	0	940
Harpeth River	FY20	43,773	0	64	8,082	<0.01	0	51,920
Indian Creek	FY20	0	0	0	0	0	0	0
Island Creek	FY20	0	0	0	0	0	0	0
Little Harpeth River	FY20	735	0	0	497	0	0	1,233
Loves Branch	FY20	161	0	0	497	<0.01	0	659
Manskers Creek	FY20	285	0	189	0	0	0	475
Marrowbone Creek	FY20	57	0	3.79	0	0	0	60
Mill Creek Lower	FY20	6,333	0	838	15,791	<0.01	0	22,963
Mill Creek Upper	FY20	6,863	0	81	4,725	<0.01	0	11,669
Overall Creek	FY20	1,505	0	0	249	<0.01	0	1,753
Pages Branch	FY20	482	0	19	1,865	<0.01	0	2,366
Percy Priest Lake, Lower	FY20	6,700	0	21	10,071	<0.01	0	16,792
Percy Priest Lake, Upper	FY20	3,737	0	3.79	1,368	0	0	5,108
Pond Creek	FY20	0	0	0	0	0	0	0
Richland Creek	FY20	23,808	0	32	8,704	<0.01	0	32,544
Sandy Creek	FY20	218	0	1.89	497	0	0	717
Sevenmile Creek	FY20	5,841	0	256	9,325	<0.01	0	15,422
South Harpeth River, Lower	FY20	190	0	0	373	0	0	563
Stoner Creek	FY20	7,826	0	26	7,460	<0.01	0	15,313
Stones River	FY20	1,433	0	967	4,849	0	0	7,249
Sugartree Creek	FY20	2,586	0	416	2,114	<0.01	0	5,116
Sulpher Creek	FY20	74	0	0	0	0	0	74
Sycamore Creek	FY20	186	0	0	0	0	0	186
Whites Creek	FY20	10,320	0	23	4,476	<0.01	0	14,818

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: Runoff							
		Baseline Pollutant Load (ac-ft)	Load Removal by MWS Control Measure Implementation during Fiscal Year (acre-foot)						Net Pollutant Load from Watershed (ac-ft)
			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]	
All Watersheds	FY20	284,706	25,071	0	0	0	130	0	259,505
Back Creek	FY20	131	0	0	0	0	0	0	131
Browns Creek	FY20	13,607	337	0	0	0	8.97	0.21	13,261
Bull Run Creek	FY20	505	0	0	0	0	0	0	505
Cooper Creek	FY20	3,283	104	0	0	0	6.29	0.03	3,172
Cub Creek	FY20	140	0	0	0	0	0	0	140
Cumberland River	FY20	53,388	14,677	0	0	0	24	2.48	38,684
Davidson Branch	FY20	2,182	39	0	0	0	0	0.03	2,142
Dry Creek	FY20	5,197	56	0	0	0	1.04	0.02	5,140
Ewing Creek	FY20	11,412	287	0	0	0	6.94	0.05	11,119
Gibson Creek	FY20	5,570	85	0	0	0	15	0.11	5,471
Gizzard Branch	FY20	2,043	70	0	0	0	0	0.01	1,973
Harpeth River	FY20	12,782	694	0	0	0	0.74	0.03	12,086
Indian Creek	FY20	337	0	0	0	0	0	0	337
Island Creek	FY20	188	0	0	0	0	0	0	188
Little Harpeth River	FY20	2,264	54	0	0	0	0	0.04	2,210
Loves Branch	FY20	2,459	24	0	0	0	0.24	<0.01	2,434
Manskers Creek	FY20	3,931	36	0	0	0	0	0.01	3,895
Marrowbone Creek	FY20	2,623	12	0	0	0	0	<0.01	2,611
Mill Creek Lower	FY20	38,375	596	0	0	0	14	0.1	37,766
Mill Creek Upper	FY20	12,760	265	0	0	0	1.94	0.17	12,494
Overall Creek	FY20	2,842	57	0	0	0	0.49	0.04	2,784
Pages Branch	FY20	4,326	91	0	0	0	1.69	0.05	4,232
Percy Priest Lake, Lower	FY20	12,748	174	0	0	0	1.33	0.06	12,572
Percy Priest Lake, Upper	FY20	11,039	264	0	0	0	0	0.03	10,775
Pond Creek	FY20	230	0	0	0	0	0	0	230
Richland Creek	FY20	16,034	3,650	0	0	0	17	0.23	12,367
Sandy Creek	FY20	1,007	11	0	0	0	0	0	997
Sevenmile Creek	FY20	15,697	291	0	0	0	7.72	0.08	15,398
South Harpeth River, Lower	FY20	1,381	4.56	0	0	0	0	0	1,376
Stoner Creek	FY20	10,165	1,085	0	0	0	2.18	0.01	9,078
Stones River	FY20	11,744	141	0	0	0	0	0.07	11,603
Sugartree Creek	FY20	3,795	181	0	0	0	0.25	0.01	3,614
Sulpher Creek	FY20	818	14	0	0	0	0	<0.01	804
Sycamore Creek	FY20	4,704	10	0	0	0	0	0	4,694
Whites Creek	FY20	15,001	1,759	0	0	0	21	0.1	13,221

Based on average annual rainfall conditions
1 – Accounts for load removal by all control measures implemented in watershed thru end of FY;
2 – Based on control measures implemented during the fiscal year

Watershed	Year	Pollutant: BOD5							
		Baseline Pollutant Load (lbs)	Load Removal by MWS Control Measure Implementation during Fiscal Year (pounds)						Net Pollutant Load from Watershed (lbs)
			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]	
All Watersheds	FY20	3,372,870	181,095	0	17	59,316	328	0	3,132,114
Back Creek	FY20	1,293	0	0	0	0	0	0	1,293
Browns Creek	FY20	142,878	3,909	0	1.06	2,432	12	0	136,524
Bull Run Creek	FY20	4,408	0	0	0	0	0	0	4,408
Cooper Creek	FY20	39,122	1,262	0	0.09	712	14	0	37,133
Cub Creek	FY20	1,491	0	0	0	0	0	0	1,491
Cumberland River	FY20	653,209	102,273	0	0.68	13,583	53	0	537,299
Davidson Branch	FY20	25,326	358	0	0	178	0	0	24,790
Dry Creek	FY20	60,213	708	0	0	771	2.06	0	58,732
Ewing Creek	FY20	130,973	3,998	0	0.01	2,076	9.11	0	124,890
Gibson Creek	FY20	76,467	556	0	0.95	771	18	0	75,121
Gizzard Branch	FY20	32,438	471	0	0	178	0	0	31,789
Harpeth River	FY20	150,985	6,890	0	0.31	3,856	5.22	0	140,234
Indian Creek	FY20	3,605	0	0	0	0	0	0	3,605
Island Creek	FY20	1,343	0	0	0	0	0	0	1,343
Little Harpeth River	FY20	26,860	340	0	0	237	0	0	26,283
Loves Branch	FY20	26,478	230	0	0	237	0.86	0	26,010
Manskers Creek	FY20	39,543	416	0	0.92	0	0	0	39,125
Marrowbone Creek	FY20	27,604	59	0	0.02	0	0	0	27,545
Mill Creek Lower	FY20	448,416	5,601	0	4.07	7,533	34	0	435,243
Mill Creek Upper	FY20	157,666	2,099	0	0.39	2,254	44	0	153,268
Overall Creek	FY20	33,918	431	0	0	119	1.05	0	33,367
Pages Branch	FY20	55,266	790	0	0.09	890	2.33	0	53,584
Percy Priest Lake, Lower	FY20	138,216	1,278	0	0.1	4,805	0.75	0	132,132
Percy Priest Lake, Upper	FY20	112,162	3,285	0	0.02	652	0	0	108,225
Pond Creek	FY20	2,378	0	0	0	0	0	0	2,378
Richland Creek	FY20	195,984	21,353	0	0.16	4,152	12	0	170,467
Sandy Creek	FY20	11,862	138	0	0.01	237	0	0	11,487
Sevenmile Creek	FY20	194,344	2,022	0	1.24	4,449	20	0	187,852
South Harpeth River, Lower	FY20	12,659	48	0	0	178	0	0	12,434
Stoner Creek	FY20	131,196	9,797	0	0.13	3,559	2.39	0	117,838
Stones River	FY20	155,009	1,395	0	4.69	2,313	0	0	151,296
Sugartree Creek	FY20	55,205	1,201	0	2.02	1,008	0.35	0	52,993
Sulpher Creek	FY20	7,580	132	0	0	0	0	0	7,448
Sycamore Creek	FY20	49,394	49	0	0	0	0	0	49,345
Whites Creek	FY20	167,380	10,008	0	0.11	2,135	96	0	155,141

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

Watershed	Year	Pollutant: COD							
		Baseline Pollutant Load (lbs)	Load Removal by MWS Control Measure Implementation during Fiscal Year (pounds)						Net Pollutant Load from Watershed (lbs)
			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]	
All Watersheds	FY20	29,272,361	1,410,438	0	45	118,633	589	0	27,742,656
Back Creek	FY20	12,694	0	0	0	0	0	0	12,694
Browns Creek	FY20	1,290,932	30,881	0	2.78	4,864	0	0	1,255,185
Bull Run Creek	FY20	47,296	0	0	0	0	0	0	47,296
Cooper Creek	FY20	338,947	9,254	0	0.24	1,424	55	0	328,214
Cub Creek	FY20	14,516	0	0	0	0	0	0	14,516
Cumberland River	FY20	5,554,268	836,617	0	1.79	27,167	157	0	4,690,327
Davidson Branch	FY20	236,280	2,912	0	0	356	0	0	233,012
Dry Creek	FY20	512,490	5,421	0	0	1,542	0	0	505,527
Ewing Creek	FY20	1,153,254	31,140	0	0.02	4,152	0	0	1,117,962
Gibson Creek	FY20	631,688	4,243	0	2.49	1,542	18	0	625,882
Gizzard Branch	FY20	263,314	3,743	0	0	356	0	0	259,215
Harpeth River	FY20	1,318,509	49,286	0	0.82	7,711	0	0	1,261,511
Indian Creek	FY20	34,869	0	0	0	0	0	0	34,869
Island Creek	FY20	17,096	0	0	0	0	0	0	17,096
Little Harpeth River	FY20	259,956	2,831	0	0	475	0	0	256,650
Loves Branch	FY20	255,868	1,957	0	0	475	0	0	253,436
Manskers Creek	FY20	383,340	3,235	0	2.42	0	0	0	380,103
Marrowbone Creek	FY20	273,490	445	0	0.05	0	0	0	273,046
Mill Creek Lower	FY20	3,686,403	46,255	0	11	15,066	39	0	3,625,032
Mill Creek Upper	FY20	1,333,356	17,590	0	1.04	4,508	179	0	1,311,078
Overall Creek	FY20	291,832	3,316	0	0	237	0	0	288,279
Pages Branch	FY20	457,107	6,880	0	0.24	1,779	0	0	448,447
Percy Priest Lake, Lower	FY20	1,321,462	15,781	0	0.27	9,609	0	0	1,296,072
Percy Priest Lake, Upper	FY20	1,024,311	24,924	0	0.05	1,305	0	0	998,082
Pond Creek	FY20	22,268	0	0	0	0	0	0	22,268
Richland Creek	FY20	1,700,239	138,313	0	0.41	8,304	0	0	1,553,621
Sandy Creek	FY20	100,397	1,092	0	0.02	475	0	0	98,830
Sevenmile Creek	FY20	1,637,557	19,210	0	3.26	8,897	0	0	1,609,447
South Harpeth River, Lower	FY20	136,493	325	0	0	356	0	0	135,813
Stoner Creek	FY20	1,084,250	67,628	0	0.34	7,118	0	0	1,009,504
Stones River	FY20	1,318,719	11,100	0	12	4,627	0	0	1,302,980
Sugartree Creek	FY20	455,832	9,374	0	5.31	2,017	0	0	444,437
Sulpher Creek	FY20	79,589	1,012	0	0	0	0	0	78,577
Sycamore Creek	FY20	480,374	355	0	0	0	0	0	480,020
Whites Creek	FY20	1,543,364	65,321	0	0.29	4,271	141	0	1,473,630

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

Watershed	Year	Pollutant: NH3							
		Baseline Pollutant Load (lbs)	Load Removal by MWS Control Measure Implementation during Fiscal Year (pounds)						Net Pollutant Load from Watershed (lbs)
			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]	
All Watersheds	FY20	94,772	4,923	0	0.66	0	3.53	0	89,845
Back Creek	FY20	41	0	0	0	0	0	0	41
Browns Creek	FY20	4,576	99	0	0.04	0	<0.01	0	4,478
Bull Run Creek	FY20	164	0	0	0	0	0	0	164
Cooper Creek	FY20	1,116	24	0	<0.01	0	0.33	0	1,091
Cub Creek	FY20	45	0	0	0	0	0	0	45
Cumberland River	FY20	18,222	3,006	0	0.03	0	0.93	0	15,215
Davidson Branch	FY20	825	10	0	0	0	0	0	814
Dry Creek	FY20	1,688	18	0	0	0	<0.01	0	1,670
Ewing Creek	FY20	3,857	103	0	<0.01	0	<0.01	0	3,754
Gibson Creek	FY20	2,004	17	0	0.04	0	0.11	0	1,987
Gizzard Branch	FY20	877	16	0	0	0	0	0	861
Harpeth River	FY20	4,137	132	0	0.01	0	<0.01	0	4,005
Indian Creek	FY20	97	0	0	0	0	0	0	97
Island Creek	FY20	70	0	0	0	0	0	0	70
Little Harpeth River	FY20	780	11	0	0	0	0	0	769
Loves Branch	FY20	831	6.67	0	0	0	<0.01	0	825
Manskers Creek	FY20	1,235	12	0	0.04	0	0	0	1,223
Marrowbone Creek	FY20	751	2.03	0	<0.01	0	0	0	749
Mill Creek Lower	FY20	12,479	176	0	0.16	0	0.23	0	12,303
Mill Creek Upper	FY20	4,077	65	0	0.02	0	1.06	0	4,011
Overall Creek	FY20	927	11	0	0	0	<0.01	0	916
Pages Branch	FY20	1,522	27	0	<0.01	0	<0.01	0	1,494
Percy Priest Lake, Lower	FY20	3,690	35	0	<0.01	0	<0.01	0	3,655
Percy Priest Lake, Upper	FY20	3,127	77	0	<0.01	0	0	0	3,050
Pond Creek	FY20	63	0	0	0	0	0	0	63
Richland Creek	FY20	5,709	459	0	0.01	0	<0.01	0	5,249
Sandy Creek	FY20	324	3.87	0	<0.01	0	0	0	320
Sevenmile Creek	FY20	5,159	58	0	0.05	0	<0.01	0	5,101
South Harpeth River, Lower	FY20	399	1.04	0	0	0	0	0	398
Stoner Creek	FY20	3,433	260	0	<0.01	0	<0.01	0	3,174
Stones River	FY20	4,481	40	0	0.18	0	0	0	4,441
Sugartree Creek	FY20	1,461	34	0	0.08	0	<0.01	0	1,427
Sulpher Creek	FY20	264	3.67	0	0	0	0	0	260
Sycamore Creek	FY20	1,405	1.21	0	0	0	0	0	1,403
Whites Creek	FY20	4,938	214	0	<0.01	0	0.85	0	4,723

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

Watershed	Year	Pollutant: TKN							
		Baseline Pollutant Load (lbs)	Load Removal by MWS Control Measure Implementation during Fiscal Year (pounds)						Net Pollutant Load from Watershed (lbs)
			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]	
All Watersheds	FY20	393,315	24,286	0	5.4	0	20	0	369,004
Back Creek	FY20	163	0	0	0	0	0	0	163
Browns Creek	FY20	15,798	527	0	0.33	0	0.93	0	15,269
Bull Run Creek	FY20	513	0	0	0	0	0	0	513
Cooper Creek	FY20	4,404	191	0	0.03	0	0.57	0	4,213
Cub Creek	FY20	191	0	0	0	0	0	0	191
Cumberland River	FY20	74,572	14,481	0	0.22	0	2.55	0	60,088
Davidson Branch	FY20	2,648	38	0	0	0	0	0	2,610
Dry Creek	FY20	7,080	75	0	0	0	0.16	0	7,005
Ewing Creek	FY20	14,854	389	0	<0.01	0	0.71	0	14,464
Gibson Creek	FY20	8,691	100	0	0.3	0	1.23	0	8,589
Gizzard Branch	FY20	3,384	80	0	0	0	0	0	3,305
Harpeth River	FY20	17,782	1,054	0	0.1	0	0.41	0	16,728
Indian Creek	FY20	512	0	0	0	0	0	0	512
Island Creek	FY20	115	0	0	0	0	0	0	115
Little Harpeth River	FY20	3,311	65	0	0	0	0	0	3,246
Loves Branch	FY20	3,090	19	0	0	0	0.07	0	3,071
Manskers Creek	FY20	4,934	53	0	0.29	0	0	0	4,881
Marrowbone Creek	FY20	3,950	11	0	0.01	0	0	0	3,939
Mill Creek Lower	FY20	51,585	766	0	1.29	0	2.29	0	50,816
Mill Creek Upper	FY20	19,201	344	0	0.12	0	1.64	0	18,855
Overall Creek	FY20	4,080	53	0	0	0	0.08	0	4,027
Pages Branch	FY20	6,182	105	0	0.03	0	0.18	0	6,077
Percy Priest Lake, Lower	FY20	18,477	245	0	0.03	0	0.06	0	18,232
Percy Priest Lake, Upper	FY20	15,057	297	0	0.01	0	0	0	14,760
Pond Creek	FY20	331	0	0	0	0	0	0	331
Richland Creek	FY20	21,498	2,225	0	0.05	0	0.95	0	19,271
Sandy Creek	FY20	1,384	18	0	<0.01	0	0	0	1,366
Sevenmile Creek	FY20	22,689	350	0	0.39	0	1.54	0	22,337
South Harpeth River, Lower	FY20	1,753	7.22	0	0	0	0	0	1,746
Stoner Creek	FY20	14,988	1,446	0	0.04	0	0.19	0	13,541
Stones River	FY20	16,537	173	0	1.49	0	0	0	16,363
Sugartree Creek	FY20	6,011	169	0	0.64	0	0.03	0	5,841
Sulpher Creek	FY20	919	16	0	0	0	0	0	903
Sycamore Creek	FY20	6,647	8.08	0	0	0	0	0	6,639
Whites Creek	FY20	19,984	980	0	0.03	0	6.03	0	18,998

Based on average annual rainfall conditions
1 – Accounts for load removal by 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							
		Baseline Pollutant Load (lbs)	Load Removal by MWS Control Measure Implementation during Fiscal Year (pounds)						Net Pollutant Load from Watershed (lbs)
			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]	
All Watersheds	FY20	168,657	13,534	0	0.08	0	1.29	0	155,122
Back Creek	FY20	71	0	0	0	0	0	0	71
Browns Creek	FY20	7,881	197	0	<0.01	0	0	0	7,684
Bull Run Creek	FY20	257	0	0	0	0	0	0	257
Cooper Creek	FY20	1,848	64	0	<0.01	0	0.12	0	1,784
Cub Creek	FY20	81	0	0	0	0	0	0	81
Cumberland River	FY20	32,395	7,670	0	<0.01	0	0.34	0	24,725
Davidson Branch	FY20	1,221	22	0	0	0	0	0	1,199
Dry Creek	FY20	3,097	37	0	0	0	0	0	3,060
Ewing Creek	FY20	6,577	186	0	<0.01	0	0	0	6,391
Gibson Creek	FY20	3,404	37	0	<0.01	0	0.04	0	3,367
Gizzard Branch	FY20	1,374	34	0	0	0	0	0	1,340
Harpeth River	FY20	7,195	393	0	<0.01	0	0	0	6,802
Indian Creek	FY20	202	0	0	0	0	0	0	202
Island Creek	FY20	86	0	0	0	0	0	0	86
Little Harpeth River	FY20	1,389	24	0	0	0	0	0	1,365
Loves Branch	FY20	1,384	14	0	0	0	0	0	1,370
Manskers Creek	FY20	2,231	24	0	<0.01	0	0	0	2,207
Marrowbone Creek	FY20	1,582	4.48	0	<0.01	0	0	0	1,577
Mill Creek Lower	FY20	23,052	299	0	0.02	0	0.08	0	22,753
Mill Creek Upper	FY20	7,540	122	0	<0.01	0	0.39	0	7,418
Overall Creek	FY20	1,672	30	0	0	0	0	0	1,642
Pages Branch	FY20	2,639	41	0	<0.01	0	0	0	2,597
Percy Priest Lake, Lower	FY20	7,449	108	0	<0.01	0	0	0	7,340
Percy Priest Lake, Upper	FY20	6,647	150	0	<0.01	0	0	0	6,496
Pond Creek	FY20	130	0	0	0	0	0	0	130
Richland Creek	FY20	9,429	2,005	0	<0.01	0	0	0	7,424
Sandy Creek	FY20	571	6.7	0	<0.01	0	0	0	565
Sevenmile Creek	FY20	9,130	162	0	0.01	0	0	0	8,968
South Harpeth River, Lower	FY20	773	3.26	0	0	0	0	0	770
Stoner Creek	FY20	5,947	777	0	<0.01	0	0	0	5,170
Stones River	FY20	7,267	79	0	0.02	0	0	0	7,188
Sugartree Creek	FY20	2,346	95	0	0.01	0	0	0	2,252
Sulpher Creek	FY20	441	6.87	0	0	0	0	0	434
Sycamore Creek	FY20	2,717	4	0	0	0	0	0	2,713
Whites Creek	FY20	8,634	939	0	<0.01	0	0.31	0	7,695

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

Watershed	Year	Pollutant: TN							
		Baseline Pollutant Load (lbs)	Load Removal by MWS Control Measure Implementation during Fiscal Year (pounds)						Net Pollutant Load from Watershed (lbs)
			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]	
All Watersheds	FY20	565,658	32,014	0	3.91	17,017	25	0	516,598
Back Creek	FY20	228	0	0	0	0	0	0	228
Browns Creek	FY20	23,518	650	0	0.24	698	1.1	0	22,169
Bull Run Creek	FY20	744	0	0	0	0	0	0	744
Cooper Creek	FY20	6,355	240	0	0.02	204	0.86	0	5,909
Cub Creek	FY20	265	0	0	0	0	0	0	265
Cumberland River	FY20	108,252	19,073	0	0.16	3,897	3.55	0	85,279
Davidson Branch	FY20	3,852	53	0	0	51	0	0	3,748
Dry Creek	FY20	10,127	98	0	0	221	0.19	0	9,807
Ewing Creek	FY20	21,517	503	0	<0.01	596	0.84	0	20,418
Gibson Creek	FY20	12,182	107	0	0.22	221	1.51	0	11,852
Gizzard Branch	FY20	4,770	92	0	0	51	0	0	4,627
Harpeth River	FY20	25,657	1,304	0	0.07	1,106	0.48	0	23,247
Indian Creek	FY20	693	0	0	0	0	0	0	693
Island Creek	FY20	191	0	0	0	0	0	0	191
Little Harpeth River	FY20	4,644	69	0	0	68	0	0	4,507
Loves Branch	FY20	4,424	28	0	0	68	0.08	0	4,328
Manskers Creek	FY20	6,932	66	0	0.21	0	0	0	6,866
Marrowbone Creek	FY20	5,355	12	0	<0.01	0	0	0	5,343
Mill Creek Lower	FY20	74,708	851	0	0.93	2,161	2.84	0	71,692
Mill Creek Upper	FY20	26,923	364	0	0.09	647	2.56	0	25,909
Overall Creek	FY20	5,672	68	0	0	34	0.1	0	5,570
Pages Branch	FY20	8,900	114	0	0.02	255	0.21	0	8,531
Percy Priest Lake, Lower	FY20	26,528	308	0	0.02	1,378	0.07	0	24,842
Percy Priest Lake, Upper	FY20	21,042	361	0	<0.01	187	0	0	20,493
Pond Creek	FY20	449	0	0	0	0	0	0	449
Richland Creek	FY20	31,487	3,285	0	0.04	1,191	1.11	0	27,009
Sandy Creek	FY20	1,988	21	0	<0.01	68	0	0	1,899
Sevenmile Creek	FY20	32,563	423	0	0.28	1,276	1.81	0	30,862
South Harpeth River, Lower	FY20	2,479	9.63	0	0	51	0	0	2,419
Stoner Creek	FY20	21,674	2,010	0	0.03	1,021	0.22	0	18,643
Stones River	FY20	24,020	212	0	1.07	664	0	0	23,144
Sugartree Creek	FY20	8,587	214	0	0.46	289	0.03	0	8,083
Sulpher Creek	FY20	1,313	18	0	0	0	0	0	1,295
Sycamore Creek	FY20	9,102	7.91	0	0	0	0	0	9,094
Whites Creek	FY20	28,516	1,451	0	0.03	613	7.6	0	26,445

Based on average annual rainfall conditions
1 – Accounts for load removal by 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							
		Baseline Pollutant Load (lbs)	Load Removal by MWS Control Measure Implementation during Fiscal Year (pounds)						Net Pollutant Load from Watershed (lbs)
			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]	
All Watersheds	FY20	196,677	8,259	0	0	0	19	0	188,399
Back Creek	FY20	117	0	0	0	0	0	0	117
Browns Creek	FY20	5,776	230	0	0	0	1.18	0	5,544
Bull Run Creek	FY20	337	0	0	0	0	0	0	337
Cooper Creek	FY20	2,449	133	0	0	0	0.13	0	2,316
Cub Creek	FY20	128	0	0	0	0	0	0	128
Cumberland River	FY20	33,030	4,794	0	0	0	1.56	0	28,235
Davidson Branch	FY20	1,237	11	0	0	0	0	0	1,227
Dry Creek	FY20	3,358	15	0	0	0	0.2	0	3,343
Ewing Creek	FY20	7,326	68	0	0	0	0.89	0	7,257
Gibson Creek	FY20	4,380	24	0	0	0	1.36	0	4,354
Gizzard Branch	FY20	1,069	16	0	0	0	0	0	1,053
Harpeth River	FY20	11,061	685	0	0	0	0.51	0	10,376
Indian Creek	FY20	367	0	0	0	0	0	0	367
Island Creek	FY20	52	0	0	0	0	0	0	52
Little Harpeth River	FY20	1,682	13	0	0	0	0	0	1,669
Loves Branch	FY20	1,630	5.1	0	0	0	0.09	0	1,625
Manskers Creek	FY20	2,818	9.79	0	0	0	0	0	2,808
Marrowbone Creek	FY20	2,679	1.51	0	0	0	0	0	2,677
Mill Creek Lower	FY20	22,105	131	0	0	0	2.49	0	21,971
Mill Creek Upper	FY20	11,392	99	0	0	0	0.17	0	11,293
Overall Creek	FY20	2,284	24	0	0	0	0.1	0	2,260
Pages Branch	FY20	2,725	16	0	0	0	0.23	0	2,709
Percy Priest Lake, Lower	FY20	12,105	150	0	0	0	0.07	0	11,955
Percy Priest Lake, Upper	FY20	8,005	59	0	0	0	0	0	7,946
Pond Creek	FY20	247	0	0	0	0	0	0	247
Richland Creek	FY20	9,873	825	0	0	0	1.19	0	9,047
Sandy Creek	FY20	810	3.12	0	0	0	0	0	807
Sevenmile Creek	FY20	12,804	135	0	0	0	1.95	0	12,667
South Harpeth River, Lower	FY20	1,202	3.21	0	0	0	0	0	1,199
Stoner Creek	FY20	8,403	345	0	0	0	0.24	0	8,058
Stones River	FY20	6,077	36	0	0	0	0	0	6,041
Sugartree Creek	FY20	2,895	53	0	0	0	0.03	0	2,842
Sulpher Creek	FY20	557	2.15	0	0	0	0	0	555
Sycamore Creek	FY20	4,481	2.25	0	0	0	0	0	4,479
Whites Creek	FY20	11,216	369	0	0	0	6.1	0	10,841

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

Watershed	Year	Pollutant: TP							
		Baseline Pollutant Load (lbs)	Load Removal by MWS Control Measure Implementation during Fiscal Year (pounds)						Net Pollutant Load from Watershed (lbs)
			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]	
All Watersheds	FY20	317,683	13,355	0	0.7	6,807	19	0	297,501
Back Creek	FY20	173	0	0	0	0	0	0	173
Browns Creek	FY20	10,139	367	0	0.04	279	1.2	0	9,492
Bull Run Creek	FY20	518	0	0	0	0	0	0	518
Cooper Creek	FY20	3,874	189	0	<0.01	82	0.13	0	3,604
Cub Creek	FY20	193	0	0	0	0	0	0	193
Cumberland River	FY20	55,192	7,851	0	0.03	1,559	1.59	0	45,781
Davidson Branch	FY20	2,079	20	0	0	20	0	0	2,039
Dry Creek	FY20	5,387	33	0	0	88	0.21	0	5,265
Ewing Creek	FY20	11,875	173	0	<0.01	238	0.91	0	11,462
Gibson Creek	FY20	7,030	40	0	0.04	88	1.38	0	6,900
Gizzard Branch	FY20	1,992	26	0	0	20	0	0	1,945
Harpeth River	FY20	17,190	971	0	0.01	442	0.52	0	15,776
Indian Creek	FY20	544	0	0	0	0	0	0	544
Island Creek	FY20	95	0	0	0	0	0	0	95
Little Harpeth River	FY20	2,797	23	0	0	27	0	0	2,747
Loves Branch	FY20	2,654	11	0	0	27	0.09	0	2,616
Manskers Creek	FY20	4,374	19	0	0.04	0	0	0	4,354
Marrowbone Creek	FY20	4,041	2.93	0	<0.01	0	0	0	4,038
Mill Creek Lower	FY20	36,088	281	0	0.17	864	2.54	0	34,940
Mill Creek Upper	FY20	17,535	170	0	0.02	259	0.18	0	17,107
Overall Creek	FY20	3,516	38	0	0	14	0.11	0	3,465
Pages Branch	FY20	4,505	37	0	<0.01	102	0.23	0	4,366
Percy Priest Lake, Lower	FY20	18,985	245	0	<0.01	551	0.07	0	18,189
Percy Priest Lake, Upper	FY20	12,403	157	0	<0.01	75	0	0	12,171
Pond Creek	FY20	360	0	0	0	0	0	0	360
Richland Creek	FY20	16,539	1,231	0	0.01	476	1.21	0	14,830
Sandy Creek	FY20	1,252	7.02	0	<0.01	27	0	0	1,218
Sevenmile Creek	FY20	20,173	220	0	0.05	511	1.99	0	19,440
South Harpeth River, Lower	FY20	1,855	4.62	0	0	20	0	0	1,830
Stoner Creek	FY20	13,323	510	0	0.01	408	0.24	0	12,404
Stones River	FY20	10,835	71	0	0.19	265	0	0	10,498
Sugartree Creek	FY20	4,805	85	0	0.08	116	0.03	0	4,604
Sulpher Creek	FY20	870	5.57	0	0	0	0	0	864
Sycamore Creek	FY20	6,751	4.13	0	0	0	0	0	6,746
Whites Creek	FY20	17,741	563	0	<0.01	245	6.19	0	16,927

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

Watershed	Year	Pollutant: Pb							
		Baseline Pollutant Load (lbs)	Load Removal by MWS Control Measure Implementation during Fiscal Year (pounds)						Net Pollutant Load from Watershed (lbs)
			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]	
All Watersheds	FY20	1,784	81	0	<0.01	493	29	0	1,181
Back Creek	FY20	7.38	0	0	0	0	0	0	7.38
Browns Creek	FY20	77	1.36	0	<0.01	20	0	0	56
Bull Run Creek	FY20	8.72	0	0	0	0	0	0	8.72
Cooper Creek	FY20	22	0.33	0	<0.01	5.91	2.76	0	13
Cub Creek	FY20	7.44	0	0	0	0	0	0	7.44
Cumberland River	FY20	331	47	0	<0.01	113	7.83	0	163
Davidson Branch	FY20	17	0.15	0	0	1.48	0	0	16
Dry Creek	FY20	30	0.27	0	0	6.4	0	0	23
Ewing Creek	FY20	65	1.54	0	<0.01	17	0	0	47
Gibson Creek	FY20	33	0.26	0	<0.01	6.4	0.92	0	26
Gizzard Branch	FY20	15	0.23	0	0	1.48	0	0	14
Harpeth River	FY20	86	2.06	0	<0.01	32	0	0	52
Indian Creek	FY20	8.1	0	0	0	0	0	0	8.1
Island Creek	FY20	7.64	0	0	0	0	0	0	7.64
Little Harpeth River	FY20	18	0.17	0	0	1.97	0	0	16
Loves Branch	FY20	15	0.1	0	0	1.97	0	0	13
Manskers Creek	FY20	18	0.17	0	<0.01	0	0	0	18
Marrowbone Creek	FY20	13	0.04	0	<0.01	0	0	0	13
Mill Creek Lower	FY20	214	2.51	0	<0.01	63	1.94	0	147
Mill Creek Upper	FY20	70	0.95	0	<0.01	19	8.94	0	42
Overall Creek	FY20	19	0.18	0	0	0.99	0	0	18
Pages Branch	FY20	32	0.38	0	<0.01	7.39	0	0	24
Percy Priest Lake, Lower	FY20	89	0.61	0	<0.01	40	0	0	49
Percy Priest Lake, Upper	FY20	48	1.36	0	<0.01	5.42	0	0	42
Pond Creek	FY20	7.68	0	0	0	0	0	0	7.68
Richland Creek	FY20	107	10	0	<0.01	34	0	0	62
Sandy Creek	FY20	13	0.05	0	<0.01	1.97	0	0	11
Sevenmile Creek	FY20	100	0.96	0	<0.01	37	0	0	62
South Harpeth River, Lower	FY20	13	0.02	0	0	1.48	0	0	12
Stoner Creek	FY20	73	3.8	0	<0.01	30	0	0	39
Stones River	FY20	75	0.58	0	<0.01	19	0	0	55
Sugartree Creek	FY20	32	0.55	0	<0.01	8.37	0	0	23
Sulpher Creek	FY20	9.92	0.06	0	0	0	0	0	9.86
Sycamore Creek	FY20	21	0.03	0	0	0	0	0	21
Whites Creek	FY20	79	4.87	0	<0.01	18	7.06	0	49

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

Watershed	Year	Pollutant: Ni							
		Baseline Pollutant Load (lbs)	Load Removal by MWS Control Measure Implementation during Fiscal Year (pounds)						Net Pollutant Load from Watershed (lbs)
			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]	
All Watersheds	FY20	1,795	151	0	<0.01	315	0	0	1,330
Back Creek	FY20	8.88	0	0	0	0	0	0	8.88
Browns Creek	FY20	93	1.67	0	<0.01	13	0	0	78
Bull Run Creek	FY20	9.99	0	0	0	0	0	0	9.99
Cooper Creek	FY20	18	0.27	0	<0.01	3.78	0	0	14
Cub Creek	FY20	9.01	0	0	0	0	0	0	9.01
Cumberland River	FY20	344	83	0	<0.01	72	0	0	190
Davidson Branch	FY20	18	0.24	0	0	0.94	0	0	16
Dry Creek	FY20	33	0.43	0	0	4.09	0	0	29
Ewing Creek	FY20	63	2.05	0	<0.01	11	0	0	50
Gibson Creek	FY20	30	0.53	0	<0.01	4.09	0	0	25
Gizzard Branch	FY20	18	0.48	0	0	0.94	0	0	16
Harpeth River	FY20	64	2.46	0	<0.01	20	0	0	42
Indian Creek	FY20	9.76	0	0	0	0	0	0	9.76
Island Creek	FY20	9.15	0	0	0	0	0	0	9.15
Little Harpeth River	FY20	22	0.35	0	0	1.26	0	0	21
Loves Branch	FY20	16	0.13	0	0	1.26	0	0	15
Manskers Creek	FY20	21	0.3	0	<0.01	0	0	0	21
Marrowbone Creek	FY20	16	0.08	0	<0.01	0	0	0	16
Mill Creek Lower	FY20	237	3.81	0	<0.01	40	0	0	193
Mill Creek Upper	FY20	59	1.47	0	<0.01	12	0	0	46
Overall Creek	FY20	20	0.31	0	0	0.63	0	0	19
Pages Branch	FY20	33	0.53	0	<0.01	4.72	0	0	28
Percy Priest Lake, Lower	FY20	84	1.51	0	<0.01	25	0	0	57
Percy Priest Lake, Upper	FY20	69	1.55	0	<0.01	3.46	0	0	64
Pond Creek	FY20	9.17	0	0	0	0	0	0	9.17
Richland Creek	FY20	100	24	0	<0.01	22	0	0	54
Sandy Creek	FY20	13	0.08	0	<0.01	1.26	0	0	12
Sevenmile Creek	FY20	81	2.25	0	<0.01	24	0	0	55
South Harpeth River, Lower	FY20	15	0.03	0	0	0.94	0	0	14
Stoner Creek	FY20	55	11	0	<0.01	19	0	0	26
Stones River	FY20	79	0.96	0	<0.01	12	0	0	66
Sugartree Creek	FY20	28	1.14	0	<0.01	5.35	0	0	22
Sulpher Creek	FY20	12	0.09	0	0	0	0	0	12
Sycamore Creek	FY20	22	0.05	0	0	0	0	0	22
Whites Creek	FY20	75	11	0	<0.01	11	0	0	53

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

Watershed	Year	Pollutant: Zn							
		Baseline Pollutant Load (lbs)	Load Removal by MWS Control Measure Implementation during Fiscal Year (pounds)						Net Pollutant Load from Watershed (lbs)
			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]	
All Watersheds	FY20	37,307	1,888	0	<0.01	1,354	3,128	0	30,937
Back Creek	FY20	253	0	0	0	0	0	0	253
Browns Creek	FY20	1,490	42	0	<0.01	56	82	0	1,311
Bull Run Creek	FY20	278	0	0	0	0	0	0	278
Cooper Creek	FY20	481	10	0	<0.01	16	182	0	273
Cub Creek	FY20	255	0	0	0	0	0	0	255
Cumberland River	FY20	6,345	1,067	0	<0.01	310	596	0	4,372
Davidson Branch	FY20	479	3.81	0	0	4.06	0	0	472
Dry Creek	FY20	683	8.61	0	0	18	14	0	643
Ewing Creek	FY20	1,331	51	0	<0.01	47	63	0	1,169
Gibson Creek	FY20	849	6.51	0	<0.01	18	151	0	674
Gizzard Branch	FY20	471	5.24	0	0	4.06	0	0	462
Harpeth River	FY20	1,557	58	0	<0.01	88	36	0	1,375
Indian Creek	FY20	270	0	0	0	0	0	0	270
Island Creek	FY20	255	0	0	0	0	0	0	255
Little Harpeth River	FY20	493	3.86	0	0	5.42	0	0	483
Loves Branch	FY20	367	2.55	0	0	5.42	5.82	0	354
Manskers Creek	FY20	463	5.25	0	<0.01	0	0	0	458
Marrowbone Creek	FY20	348	0.97	0	<0.01	0	0	0	347
Mill Creek Lower	FY20	4,311	78	0	<0.01	172	292	0	3,770
Mill Creek Upper	FY20	1,503	29	0	<0.01	51	571	0	852
Overall Creek	FY20	538	4.27	0	0	2.71	7.25	0	523
Pages Branch	FY20	769	12	0	<0.01	20	16	0	721
Percy Priest Lake, Lower	FY20	1,303	12	0	<0.01	110	5.88	0	1,176
Percy Priest Lake, Upper	FY20	1,075	45	0	<0.01	15	0	0	1,015
Pond Creek	FY20	261	0	0	0	0	0	0	261
Richland Creek	FY20	2,104	204	0	<0.01	95	84	0	1,721
Sandy Creek	FY20	347	1.76	0	<0.01	5.42	0	0	340
Sevenmile Creek	FY20	1,880	21	0	<0.01	102	134	0	1,624
South Harpeth River, Lower	FY20	341	0.38	0	0	4.06	0	0	337
Stoner Creek	FY20	1,330	85	0	<0.01	81	16	0	1,148
Stones River	FY20	1,675	17	0	<0.01	53	0	0	1,605
Sugartree Creek	FY20	778	12	0	<0.01	23	2.38	0	740
Sulpher Creek	FY20	305	1.93	0	0	0	0	0	303
Sycamore Creek	FY20	520	0.63	0	0	0	0	0	520
Whites Creek	FY20	1,599	100	0	<0.01	49	871	0	580

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

Watershed	Year	Pollutant: Cr							
		Baseline Pollutant Load (lbs)	Load Removal by MWS Control Measure Implementation during Fiscal Year (pounds)						Net Pollutant Load from Watershed (lbs)
			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]	
All Watersheds	FY20	1,760	63	0	<0.01	350	0	0	1,348
Back Creek	FY20	6.66	0	0	0	0	0	0	6.66
Browns Creek	FY20	74	1.17	0	<0.01	14	0	0	58
Bull Run Creek	FY20	8.56	0	0	0	0	0	0	8.56
Cooper Creek	FY20	22	0.38	0	<0.01	4.2	0	0	18
Cub Creek	FY20	6.73	0	0	0	0	0	0	6.73
Cumberland River	FY20	311	40	0	<0.01	80	0	0	191
Davidson Branch	FY20	18	0.12	0	0	1.05	0	0	17
Dry Creek	FY20	29	0.18	0	0	4.55	0	0	25
Ewing Creek	FY20	66	1.07	0	<0.01	12	0	0	53
Gibson Creek	FY20	33	0.15	0	<0.01	4.55	0	0	28
Gizzard Branch	FY20	14	0.14	0	0	1.05	0	0	12
Harpeth River	FY20	89	2.05	0	<0.01	23	0	0	64
Indian Creek	FY20	7.74	0	0	0	0	0	0	7.74
Island Creek	FY20	6.99	0	0	0	0	0	0	6.99
Little Harpeth River	FY20	19	0.1	0	0	1.4	0	0	17
Loves Branch	FY20	17	0.09	0	0	1.4	0	0	15
Manskers Creek	FY20	22	0.1	0	<0.01	0	0	0	22
Marrowbone Creek	FY20	17	0.02	0	<0.01	0	0	0	17
Mill Creek Lower	FY20	196	1.56	0	<0.01	44	0	0	150
Mill Creek Upper	FY20	74	0.63	0	<0.01	13	0	0	60
Overall Creek	FY20	19	0.15	0	0	0.7	0	0	19
Pages Branch	FY20	29	0.23	0	<0.01	5.25	0	0	24
Percy Priest Lake, Lower	FY20	95	0.83	0	<0.01	28	0	0	66
Percy Priest Lake, Upper	FY20	53	0.93	0	<0.01	3.85	0	0	49
Pond Creek	FY20	7.12	0	0	0	0	0	0	7.12
Richland Creek	FY20	102	6.08	0	<0.01	25	0	0	72
Sandy Creek	FY20	12	0.03	0	<0.01	1.4	0	0	10
Sevenmile Creek	FY20	100	0.85	0	<0.01	26	0	0	72
South Harpeth River, Lower	FY20	14	0.01	0	0	1.05	0	0	13
Stoner Creek	FY20	70	2.28	0	<0.01	21	0	0	46
Stones River	FY20	69	0.39	0	<0.01	14	0	0	55
Sugartree Creek	FY20	30	0.39	0	<0.01	5.95	0	0	24
Sulpher Creek	FY20	10	0.04	0	0	0	0	0	10
Sycamore Creek	FY20	27	0.01	0	0	0	0	0	27
Whites Creek	FY20	87	2.9	0	<0.01	13	0	0	71

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

Watershed	Year	Pollutant: Cu							
		Baseline Pollutant Load (lbs)	Load Removal by MWS Control Measure Implementation during Fiscal Year (pounds)						Net Pollutant Load from Watershed (lbs)
			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]	
All Watersheds	FY20	5,308	182	0	<0.01	363	229	0	4,535
Back Creek	FY20	28	0	0	0	0	0	0	28
Browns Creek	FY20	217	4.58	0	<0.01	15	1.67	0	196
Bull Run Creek	FY20	33	0	0	0	0	0	0	33
Cooper Creek	FY20	69	1.1	0	<0.01	4.35	19	0	44
Cub Creek	FY20	29	0	0	0	0	0	0	29
Cumberland River	FY20	917	109	0	<0.01	83	56	0	669
Davidson Branch	FY20	64	0.44	0	0	1.09	0	0	63
Dry Creek	FY20	93	0.93	0	0	4.71	0.29	0	87
Ewing Creek	FY20	197	5.83	0	<0.01	13	1.27	0	177
Gibson Creek	FY20	117	0.46	0	<0.01	4.71	8.23	0	103
Gizzard Branch	FY20	60	0.41	0	0	1.09	0	0	58
Harpeth River	FY20	238	5.53	0	<0.01	24	0.73	0	208
Indian Creek	FY20	31	0	0	0	0	0	0	31
Island Creek	FY20	29	0	0	0	0	0	0	29
Little Harpeth River	FY20	65	0.28	0	0	1.45	0	0	64
Loves Branch	FY20	53	0.34	0	0	1.45	0.12	0	51
Manskers Creek	FY20	67	0.5	0	<0.01	0	0	0	67
Marrowbone Creek	FY20	49	0.07	0	<0.01	0	0	0	49
Mill Creek Lower	FY20	596	7.37	0	<0.01	46	17	0	526
Mill Creek Upper	FY20	218	2.42	0	<0.01	14	62	0	140
Overall Creek	FY20	69	0.44	0	0	0.73	0.15	0	68
Pages Branch	FY20	101	1.11	0	<0.01	5.44	0.32	0	94
Percy Priest Lake, Lower	FY20	213	1.59	0	<0.01	29	0.1	0	182
Percy Priest Lake, Upper	FY20	149	5.13	0	<0.01	3.99	0	0	140
Pond Creek	FY20	30	0	0	0	0	0	0	30
Richland Creek	FY20	309	15	0	<0.01	25	1.69	0	267
Sandy Creek	FY20	43	0.18	0	<0.01	1.45	0	0	41
Sevenmile Creek	FY20	280	2.01	0	<0.01	27	2.75	0	248
South Harpeth River, Lower	FY20	45	0.03	0	0	1.09	0	0	44
Stoner Creek	FY20	196	6.21	0	<0.01	22	0.33	0	168
Stones River	FY20	236	1.72	0	<0.01	14	0	0	220
Sugartree Creek	FY20	105	1.04	0	<0.01	6.16	0.05	0	98
Sulpher Creek	FY20	38	0.2	0	0	0	0	0	37
Sycamore Creek	FY20	78	0.04	0	0	0	0	0	78
Whites Creek	FY20	246	7.66	0	<0.01	13	57	0	169

Based on average annual rainfall conditions
1 – Accounts for load removal by 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							
		Baseline Pollutant Load (lbs)	Load Removal by MWS Control Measure Implementation during Fiscal Year (pounds)						Net Pollutant Load from Watershed (lbs)
			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]	
All Watersheds	FY20	1,120,388	60,090	0	6.77	8,024	0	0	1,052,267
Back Creek	FY20	504	0	0	0	0	0	0	504
Browns Creek	FY20	57,055	918	0	0.42	329	0	0	55,808
Bull Run Creek	FY20	2,152	0	0	0	0	0	0	2,152
Cooper Creek	FY20	12,233	191	0	0.04	96	0	0	11,946
Cub Creek	FY20	580	0	0	0	0	0	0	580
Cumberland River	FY20	214,301	36,159	0	0.27	1,838	0	0	176,305
Davidson Branch	FY20	9,605	122	0	0	24	0	0	9,459
Dry Creek	FY20	19,562	200	0	0	104	0	0	19,258
Ewing Creek	FY20	44,952	1,146	0	<0.01	281	0	0	43,525
Gibson Creek	FY20	21,133	139	0	0.38	104	0	0	20,889
Gizzard Branch	FY20	9,260	146	0	0	24	0	0	9,090
Harpeth River	FY20	47,022	1,122	0	0.12	522	0	0	45,378
Indian Creek	FY20	1,359	0	0	0	0	0	0	1,359
Island Creek	FY20	942	0	0	0	0	0	0	942
Little Harpeth River	FY20	11,138	106	0	0	32	0	0	10,999
Loves Branch	FY20	10,879	90	0	0	32	0	0	10,756
Manskers Creek	FY20	16,329	118	0	0.36	0	0	0	16,211
Marrowbone Creek	FY20	11,297	19	0	0.01	0	0	0	11,278
Mill Creek Lower	FY20	139,340	1,574	0	1.61	1,019	0	0	136,745
Mill Creek Upper	FY20	45,462	540	0	0.16	305	0	0	44,617
Overall Creek	FY20	10,364	131	0	0	16	0	0	10,217
Pages Branch	FY20	16,623	228	0	0.04	120	0	0	16,275
Percy Priest Lake, Lower	FY20	54,621	883	0	0.04	650	0	0	53,088
Percy Priest Lake, Upper	FY20	43,326	910	0	0.01	88	0	0	42,328
Pond Creek	FY20	812	0	0	0	0	0	0	812
Richland Creek	FY20	65,546	7,104	0	0.06	562	0	0	57,880
Sandy Creek	FY20	3,493	36	0	<0.01	32	0	0	3,425
Sevenmile Creek	FY20	57,002	929	0	0.49	602	0	0	55,471
South Harpeth River, Lower	FY20	6,321	11	0	0	24	0	0	6,286
Stoner Creek	FY20	36,459	3,061	0	0.05	481	0	0	32,916
Stones River	FY20	50,912	417	0	1.86	313	0	0	50,181
Sugartree Creek	FY20	15,330	398	0	0.8	136	0	0	14,795
Sulpher Creek	FY20	3,624	39	0	0	0	0	0	3,585
Sycamore Creek	FY20	19,246	13	0	0	0	0	0	19,233
Whites Creek	FY20	61,602	3,341	0	0.04	289	0	0	57,972

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

Watershed	Year	Pollutant: TSS							
		Baseline Pollutant Load (lbs)	Load Removal by MWS Control Measure Implementation during Fiscal Year (pounds)						Net Pollutant Load from Watershed (lbs)
			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]	
All Watersheds	FY20	15,560,138	638,562	9,986,460	57,869	2,042,040	92	0	2,835,116
Back Creek	FY20	6,681	0	0	0	0	0	0	6,681
Browns Creek	FY20	695,381	13,850	452,683	1,484	83,724	0	0	143,639
Bull Run Creek	FY20	26,413	0	0	0	0	0	0	26,413
Cooper Creek	FY20	185,776	3,754	103,931	0.1	24,504	8.64	0	53,578
Cub Creek	FY20	7,410	0	0	0	0	0	0	7,410
Cumberland River	FY20	2,963,692	402,786	2,860,826	9,642	467,627	24	0	0
Davidson Branch	FY20	124,459	1,407	531,332	0	6,126	0	0	0
Dry Creek	FY20	258,086	2,298	47,720	4,450	26,547	0	0	177,072
Ewing Creek	FY20	616,821	14,010	470,628	2,225	71,471	0	0	58,486
Gibson Creek	FY20	306,585	1,813	23,504	1.04	26,547	2.87	0	254,718
Gizzard Branch	FY20	117,099	1,623	2,356	0	6,126	0	0	106,994
Harpeth River	FY20	765,102	19,790	530,839	3,709	132,733	0	0	78,032
Indian Creek	FY20	17,298	0	1,548	742	0	0	0	15,009
Island Creek	FY20	10,636	0	0	0	0	0	0	10,636
Little Harpeth River	FY20	133,718	1,197	17,676	0	8,168	0	0	106,677
Loves Branch	FY20	136,395	995	7,354	0	8,168	0	0	119,878
Manskers Creek	FY20	192,291	1,389	43,829	2,226	0	0	0	144,847
Marrowbone Creek	FY20	135,315	223	6,842	2,225	0	0	0	126,026
Mill Creek Lower	FY20	1,873,685	22,340	764,991	5,196	259,339	6.06	0	821,813
Mill Creek Upper	FY20	686,228	8,515	719,796	2,967	77,598	28	0	0
Overall Creek	FY20	138,858	1,559	28,776	3,708	4,084	0	0	100,730
Pages Branch	FY20	232,931	3,711	857,775	1,483	30,631	0	0	0
Percy Priest Lake, Lower	FY20	813,162	8,299	54,959	742	165,405	0	0	583,757
Percy Priest Lake, Upper	FY20	496,014	12,203	229,831	2,225	22,462	0	0	229,293
Pond Creek	FY20	11,047	0	0	0	0	0	0	11,047
Richland Creek	FY20	936,185	51,404	703,132	0.17	142,943	0	0	38,705
Sandy Creek	FY20	55,068	476	52,548	0.01	8,168	0	0	0
Sevenmile Creek	FY20	904,434	8,873	128,276	743	153,153	0	0	613,389
South Harpeth River, Lower	FY20	78,599	108	6,586	742	6,126	0	0	65,038
Stoner Creek	FY20	615,144	20,949	114,017	1,483	122,522	0	0	356,172
Stones River	FY20	671,962	4,926	623,533	2,230	79,640	0	0	0
Sugartree Creek	FY20	237,953	4,023	314,067	1,486	34,715	0	0	0
Sulpher Creek	FY20	42,711	490	16,484	1,483	0	0	0	24,254
Sycamore Creek	FY20	240,529	160	5,488	742	0	0	0	234,140
Whites Creek	FY20	826,469	25,389	265,134	5,933	73,513	22	0	456,477

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

Watershed	Year	Pollutant: TDS							
		Baseline Pollutant Load (lbs)	Load Removal by MWS Control Measure Implementation during Fiscal Year (pounds)						Net Pollutant Load from Watershed (lbs)
			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]	
All Watersheds	FY20	58,235,262	2,431,104	0	0	0	0	0	55,804,158
Back Creek	FY20	29,440	0	0	0	0	0	0	29,440
Browns Creek	FY20	2,578,468	48,381	0	0	0	0	0	2,530,087
Bull Run Creek	FY20	108,799	0	0	0	0	0	0	108,799
Cooper Creek	FY20	645,916	19,376	0	0	0	0	0	626,540
Cub Creek	FY20	33,568	0	0	0	0	0	0	33,568
Cumberland River	FY20	10,657,266	1,533,888	0	0	0	0	0	9,123,378
Davidson Branch	FY20	437,537	4,041	0	0	0	0	0	433,497
Dry Creek	FY20	1,016,606	6,289	0	0	0	0	0	1,010,318
Ewing Creek	FY20	2,259,557	30,203	0	0	0	0	0	2,229,354
Gibson Creek	FY20	1,122,809	6,700	0	0	0	0	0	1,116,109
Gizzard Branch	FY20	398,930	6,685	0	0	0	0	0	392,246
Harpeth River	FY20	2,679,383	98,535	0	0	0	0	0	2,580,847
Indian Creek	FY20	87,863	0	0	0	0	0	0	87,863
Island Creek	FY20	36,963	0	0	0	0	0	0	36,963
Little Harpeth River	FY20	568,627	5,191	0	0	0	0	0	563,436
Loves Branch	FY20	542,511	2,215	0	0	0	0	0	540,296
Manskers Creek	FY20	870,717	4,548	0	0	0	0	0	866,169
Marrowbone Creek	FY20	698,637	647	0	0	0	0	0	697,990
Mill Creek Lower	FY20	7,026,841	51,460	0	0	0	0	0	6,975,381
Mill Creek Upper	FY20	2,687,782	23,697	0	0	0	0	0	2,664,085
Overall Creek	FY20	582,611	4,740	0	0	0	0	0	577,871
Pages Branch	FY20	826,311	6,673	0	0	0	0	0	819,638
Percy Priest Lake, Lower	FY20	3,234,871	48,459	0	0	0	0	0	3,186,412
Percy Priest Lake, Upper	FY20	2,449,509	15,699	0	0	0	0	0	2,433,810
Pond Creek	FY20	54,598	0	0	0	0	0	0	54,598
Richland Creek	FY20	3,168,811	190,169	0	0	0	0	0	2,978,641
Sandy Creek	FY20	197,201	1,367	0	0	0	0	0	195,834
Sevenmile Creek	FY20	3,181,362	46,088	0	0	0	0	0	3,135,274
South Harpeth River, Lower	FY20	358,824	788	0	0	0	0	0	358,036
Stoner Creek	FY20	2,025,249	168,151	0	0	0	0	0	1,857,098
Stones River	FY20	2,287,846	14,192	0	0	0	0	0	2,273,655
Sugartree Creek	FY20	771,453	16,203	0	0	0	0	0	755,249
Sulpher Creek	FY20	185,090	921	0	0	0	0	0	184,170
Sycamore Creek	FY20	1,154,903	282	0	0	0	0	0	1,154,621
Whites Creek	FY20	3,268,401	75,516	0	0	0	0	0	3,192,885

Based on average annual rainfall conditions
1 – Accounts for load removal by 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							
		Baseline Pollutant Load (MPN e9)	Load Removal by MWS Control Measure Implementation during Fiscal Year (most probable number to 10e9)						Net Pollutant Load from Watershed (MPN e9)
			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]	
All Watersheds	FY20	10,342,864	351,964	0	3,517	124,339	<0.01	0	9,863,045
Back Creek	FY20	6,485	0	0	0	0	0	0	6,485
Browns Creek	FY20	230,113	13,861	0	218	5,098	<0.01	0	210,936
Bull Run Creek	FY20	17,105	0	0	0	0	0	0	17,105
Cooper Creek	FY20	139,566	8,549	0	19	1,492	<0.01	0	129,505
Cub Creek	FY20	6,929	0	0	0	0	0	0	6,929
Cumberland River	FY20	1,666,629	200,884	0	140	28,474	<0.01	0	1,437,131
Davidson Branch	FY20	62,630	440	0	0	373	0	0	61,818
Dry Creek	FY20	173,302	548	0	0	1,616	<0.01	0	171,138
Ewing Creek	FY20	383,356	2,636	0	1.89	4,352	<0.01	0	376,367
Gibson Creek	FY20	249,693	1,366	0	195	1,616	<0.01	0	246,515
Gizzard Branch	FY20	52,096	567	0	0	373	0	0	51,156
Harpeth River	FY20	642,186	43,773	0	64	8,082	<0.01	0	590,266
Indian Creek	FY20	20,068	0	0	0	0	0	0	20,068
Island Creek	FY20	1,283	0	0	0	0	0	0	1,283
Little Harpeth River	FY20	78,285	735	0	0	497	0	0	77,052
Loves Branch	FY20	79,968	161	0	0	497	<0.01	0	79,310
Manskers Creek	FY20	140,672	285	0	189	0	0	0	140,198
Marrowbone Creek	FY20	139,981	57	0	3.79	0	0	0	139,921
Mill Creek Lower	FY20	1,121,597	6,333	0	838	15,791	<0.01	0	1,098,635
Mill Creek Upper	FY20	656,248	6,863	0	81	4,725	<0.01	0	644,578
Overall Creek	FY20	127,598	1,505	0	0	249	<0.01	0	125,845
Pages Branch	FY20	144,488	482	0	19	1,865	<0.01	0	142,122
Percy Priest Lake, Lower	FY20	640,087	6,700	0	21	10,071	<0.01	0	623,295
Percy Priest Lake, Upper	FY20	384,134	3,737	0	3.79	1,368	0	0	379,026
Pond Creek	FY20	14,049	0	0	0	0	0	0	14,049
Richland Creek	FY20	514,639	23,808	0	32	8,704	<0.01	0	482,095
Sandy Creek	FY20	46,979	218	0	1.89	497	0	0	46,262
Sevenmile Creek	FY20	735,206	5,841	0	256	9,325	<0.01	0	719,785
South Harpeth River, Lower	FY20	59,392	190	0	0	373	0	0	58,829
Stoner Creek	FY20	493,564	7,826	0	26	7,460	<0.01	0	478,251
Stones River	FY20	289,828	1,433	0	967	4,849	0	0	282,579
Sugartree Creek	FY20	166,033	2,586	0	416	2,114	<0.01	0	160,916
Sulpher Creek	FY20	27,039	74	0	0	0	0	0	26,965
Sycamore Creek	FY20	240,938	186	0	0	0	0	0	240,752
Whites Creek	FY20	590,699	10,320	0	23	4,476	<0.01	0	575,880

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