Metro Nashville/Davidson County
Annual MS4 Report
Permit TNS068047

November 2014
Reporting Period:
July 1, 2013 - June 30, 2014

METRO WATER SERVICES
STORMWATER

TABLE OF CONTENTS

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 2014 (FY14), which represents the period between July 1, 2013 through June 30, 2014.

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 Nashville and Davidson County Government, the National Pollutant Discharge Elimination System (NPDES) Section was created to oversee all permit compliance activities. The NPDES Section, within Metro Water Services (MWS) Stormwater Division, is responsible for performing specific MS4 permit requirements such as illicit discharge investigations, runoff sampling, construction site inspections, field screening inspections, industrial inspections, etc. In addition, the NPDES Section 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 individuals that contributed to specific permit compliance activities/information during FY14. Any inquiries regarding information represented in this report should be directed to the MWS Stormwater NPDES Section (Attn: Josh Hayes) at 1607 County Hospital Rd, Nashville, Tennessee, 37218, Phone: 615-880-2420, Email: Josh.Hayes@Nashville.gov.

Table 1 - Contact List

Name	Agency	Position/Responsibility
Scott Potter	Metro Water Services	Director
John Kennedy	Metro Water Services	Assistant Director
Tom Palko	Metro Water Services	Assistant Director, Stormwater Division
Sonia Harvat	Metro Water Services	Public Information Officer
Julie Berbiglia	Metro Water Services	Public Education Specialist
Ricky Swift	Metro Water Services	Program Manager, Stormwater Maintenance Section
Casey Cooper	Metro Water Services	Project Manager, Stormwater Remedial Maintenance Section
Roger Lindsey	Metro Water Services	Program Manager, Stormwater Development Review and Permitting
Clive Sorhaindo	Metro Water Services	Engineer, Stormwater Development Review and Permitting
Kimberly Hayes	Metro Water Services	Engineer, Stormwater Codes
Jennifer Hill	Metro Water Services	Administration Service Manager, Stormwater
Michael Hunt	Metro Water Services	Program Manager, Stormwater NPDES Section
Bonnye Holt	Metro Water Services	Office Support Representative, Stormwater NPDES Section
Dale Binder	Metro Water Services	Construction Inspection Manager , Stormwater NPDES
Harold Bryant	Metro Water Services	Construction Site Inspector, 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
Phil Sadd	Metro Water Services	Construction Site Inspector, Stormwater NPDES Section
Dr. Steve Winesett	Metro Water Services	Watershed Manager, Stormwater NPDES Section
Rebecca Dohn	Metro Water Services	Water Quality Inspector, Stormwater NPDES Section
Josh Hayes	Metro Water Services	Water Quality Inspector, Stormwater NPDES Section
Jason Hewitt	Metro Water Services	Water Quality Inspector, Stormwater NPDES Section
Mary Bruce	Metro Water Services	Water Quality Inspector, Stormwater NPDES Section
Anneli TerryNelson	Metro Water Services	Water Quality Inspector, Stormwater NPDES Section
Veronica Mullen	Metro Water Services	Water Quality Inspector, Stormwater NPDES Section
Travis Drury	Metro Water Services	Water Quality Inspector, Stormwater NPDES Section
Mark Macy	Department of Public Works	Assistant Director, Engineering Division
Veronica Frazier	Department of Public Works	Assistant Director, Operations Division
Donna Ryman	Department of Public Works	Solid Waste Division
Clayton Hand	Department of Public Works	Engineer, Solid Waste Division
Phillip Jones	Department of Public Works	Manager of the Street Services Division
Phillip Rogers	Department of Public Works	Technician Specialist Hazardous Materials Spill Response
Wade Hill	Codes Department	Chief Plans Reviewer
Anita McCaig	Metro Planning Department	Planner
Spencer Hissam	Metro Public Health Department	Septic System Oversight
Steve Crosier	Metro Public Health Department	Restaurant Inspection
Greg Ballard	Metro Water Services	Program Manager, Overflow Abatement
Matt Lott	Metro Water Services	Program Manager, System Services Overflow Response
Rebecca Ratz	Metro Parks Department	Parks and Recreation Planning Division
Tim Netsch	Metro Parks Department	Assistant Director
Scott Harris	Mayor's Office of Emergency Management	Spill Response Coordinator
Stacey Wall	Metro Office of Fleet Management	Manager, Fleet Services
Hugh Garrison	Metro Water Services	Laboratory Superintendent
Andy Welch/ Butch Bryant	Metro Water Services	Pre-treatment/FOG program
Anna Kuoppamaki	Metro Water Services	GIS Analyst, Stormwater NPDES Section

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

BMP	Best Management Practice
CSS	Combined Sewer System
DRP	Development Review & Permitting
EPA	Environmental Protection Agency
EPSC	Erosion Protection and Sediment Control
FY14	Fiscal Year 2014
GIS	Geographic Information System software
GP	Grading Permit
HHW	Household Hazardous Waste
LID	Low Impact Development
MEP	Maximum Extent Practicable
MDPW	Metro Department of Public Works
MHD	Metro Health Department
Metro	Metro Nashville, Davidson County
MNPS	Metro Nashville Public Schools
MS4	Municipal Separate Storm Sewer System
MWS	Metro Water Services
NOV	Notice of Violation
NPDES	National Pollutant Discharge Elimination System Section within MWS Stormwater
OEM	Mayor's Office of Emergency Management
PIO	Public Information Officer
ReM	Stormwater Remedial Maintenance Section
RoM	Stormwater Routine Maintenance Section
SSD	System Services Division
SSS	Sanitary Sewer System
SWAC	Stormwater Advisory Committee
SWMP	Stormwater Management Plan
SWO	Stop Work Order
TDEC	Tennessee Department of Environment and Conservation
TMSP	Tennessee Multi Sector Permit for Industrial Stormwater Discharges
USFWS	United States Fish and Wildlife Service
WMD	Waste Management Division

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 included 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 as much as possible to remove a majority of the streams from the 303(d) list that are indicated as mpaired by MS4 runoff. During the first two MS4 permit cycles, Metro implemented major programs to target the various sources of stormwater pollution (i.e. construction sites, industrial sites, commercial sites, residential sites, etc.). 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. With issuance of the 3rd cycle of the MS4 Permit, Metro has taken the opportunity to evaluate and make necessary modifications to further improve the program's effectiveness.

1.2 Major Findings

Each year there are fewer and fewer major discoveries of pollution to the MS4 drainage, which can be largely contributed to the long term implementation of the core pollution prevention programs described further in this document. Some of the more notable findings impacting water quality of the MS4 and Metro streams during FY14 are described in the following paragraphs:

1.2.1 Illicit Cross Connection of a Commercial Wash Bay to the Storm Sewer

MWS NPDES received a citizen complaint about wash water from a commercial car wash discharging to an outside parking lot. Upon investigating, the NPDES inspector found an active discharge of over 100 gallons per day of soapy water draining to the MS4 and eventually to Richland Creek. The water was tested with a field detergent kit and found to contain a concentration of 3.0 mg/l of detergents. NPDES coordinated with the site representative and discovered that the discharge to the outside parking lot began recently and was caused by a clogged sewer line in the wash bay. As a result of NPDES enforcement action, the plumbing issue with the wash bay was corrected and discharges of wash water to the outside parking lot and Richland Creek were eliminated.

1.2.2 Broken Sanitary Sewer Service Lateral Discharging to the MS4

After following up on a citizen complaint of a sanitary sewer discharge, MWS NPDES found an overflowing manhole from a private townhome development. NPDES issued enforcement to the facility requiring them to clean up the exposed sewage material and to determine the cause of the infrastructure failure resulting in the overflow. As a result of NPDES enforcement, the failing sanitary sewer infrastructure was repaired and the sewage material was appropriately remediated.

1.2.3 Construction Illicit

On two separate occasions, MWS NPDES received a citizen complaint of murky colored water in Sugartree Creek. In both instances, the murky colored water was traced back to a private construction site that was pumping unfiltered pit water to the open ground and storm sewer before discharging into Sugartree Creek. Two separate Notices of Violation (NOVs) were issued to the site with administrative penalties totaling $7,600. A Stop Work Order (SWO) was issued after the second offense and the site was required to cease construction until controls were in place to prevent unfiltered pit pump water from discharging into the MS4 and Sugartree Creek.

1.2.4 Eliminating a Human Source of Bacteria into a 303(d)-Listed Stream

In previous permit years, the MWS Stormwater NPDES Watershed Group was able to identify, through Polymerase Chain Reaction (PCR) analysis, a small tributary to Richland Creek (Bosley Springs Branch) that contained unusually high levels of bacteria associated with human hosts

(HuBac). Bosley Springs Branch is listed on the state of Tennessee's 303(d) list as impaired by pathogens. The Watershed Group coordinated with an active construction site to discover and repair a broken sanitary sewer service lateral that was causing human sewage to seep into Bosley Springs Branch. After the site made the necessary repairs to eliminate the sewage discharge, the Watershed Group has continued to sample for several years, including FY14. As a result of the continuous sampling/monitoring, the Watershed Group determined that the bacteria counts and human host signatures have continued to drop. Based on these findings, MWS will continue to sample with hopes to isolate and eliminate additional sources of pathogens to the creek to levels below impairment status.

1.3 Major Stormwater Management Program Accomplishments and Highlights

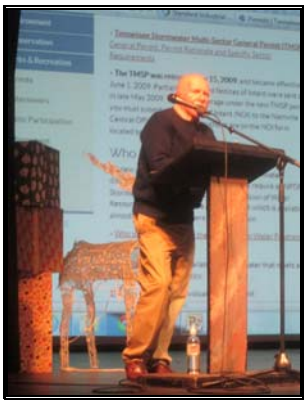
1.3.1 MWS Stormwater Division:

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

SWMP Implementation:
In FY14, NPDES continued implementation of the Metro Nashville MS4 Storm Water Management Plan (SWMP) that was developed during the previous permit reporting period. The SWMP, as required by the new MS4 permit, is a formal document that provides a comprehensive narrative description of Metro Nashville'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 each year to determine if improvements or changes need to be made. During FY14, the SWMP was reviewed and no major changes were warranted.

Public Education:
MWS' Stormwater Department continued to increase involvement on public education activities by implementing various prescribed actions of the Public Involvement/Education (PIE) plan created during the previous reporting period. Below are some examples of additional public education activities that were undertaken during FY14:

- Industrial Stormwater/Sanitary Pre-treatment Operator Workshop
  MWS NPDES Stormwater, the Tennessee Department of Environment and Conservation (TDEC), and the MWS Sanitary Sewer Pre-treatment Section teamed up to host a half day training workshop for private industrial operators. The workshop provided background information on all the permits required to discharge stormwater and process water associated with industrial facilities. Over 40 industrial operators within the Davidson County service area attended the workshop.



- Cigarette Butt Campaign
  MWS Stormwater NPDES partnered with the Public Works Beautification Program on a grant awarded from the Keep America Beautiful organization to implement an anti-cigarette littering campaign during the busy Country Music Association Festival (CMA). Prior to the event, Metro worked with various organizations to strategically place an electronic billboard message on eliminating cigarette butt litter. It is estimated that approximately 965,812 vehicles travelled past the billboard during the 2 weeks it was posted. Additionally, personnel from MWS and Public Works hosted a booth during the CMA in which approximately 5,000 pocket ashtrays were handed out to the general public.

- Urban Runoff 5K
  During FY14, MWS partnered with TDEC, the Tennessee Department of Agriculture, and other local Non-Government Organizations (NGOs) to host the 1st Annual Urban Runoff 5K. The event was a family-oriented run/walk through downtown Nashville that highlighted several stormwater-friendly green infrastructure projects such as Tennessee's first green street (Deaderick Street) and the large green roof over the Metro Courthouse parking garage. 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. Over 240 runners registered for the race as well as various other walk-up attendees of the Water Quality Festival.

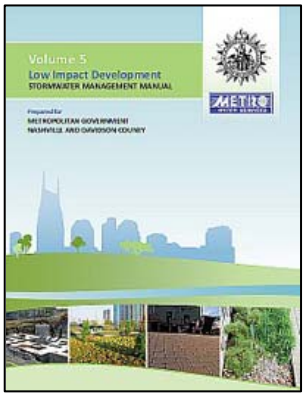
- Landscaping Company Mail-out
  As a component of the PIE plan, NPDES mailed out brochures to Landscaping Companies with locations within Davidson County. NPDES created a list of 92 companies that perform landscaping work involving the potential use of fertilizers and pesticides. The brochure promotes good behavior that could be instituted during normal landscaping activities that will reduce the amount of pollutants from discharging to local water bodies.

- Municipal Employee Specific Training
  As part of the SWMP, NPDES created specific Standard Operating Procedures (SOPs) that are focused on reducing potential impacts to stormwater runoff from maintenance activities performed by various departments. In addition, NPDES purchased a 30-minute video, produced by Excal Visual that also presents ways to prevent impacts to stormwater runoff from typical maintenance activities. NPDES has posted various training materials on the internal intranet for some of the key Metro maintenance staff to view.

Floodplain Buyout Properties:
Over the years, MWS Stormwater's floodplain buyout program has worked to restore floodplain storage and riparian habitat in various watersheds within the county. The MWS Stormwater Division has been participating in the Federal Emergency Management Agency (FEMA) buyout program for more than 16 years. Since MWS began participating in the home buyout program, Metro has purchased more than 300 floodplain properties in which structures and other impervious surfaces such as driveways have been removed from the floodplain. Over the years, Metro has ceased mowing areas adjacent to streams allowing 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. Many of these floodplain properties also provide a recreational value to local neighborhoods as they are now managed and protected by the Metro's Parks Department.

In 2011, MWS began a partnership with the Tennessee Department of Agriculture Division of Forestry (TDF) in their Clean Water from Urban Forests Riparian Buffer grant. The goal of this grant is to restore riparian buffers along streams and waterways in 8 priority watersheds: Upper and Lower Mill Creek, Richland Creek, Browns Creek, Hurricane Creek, Stone's River Middle, Stone's River Upper, and Whites Creek. As a result of this partnership, over 600 volunteers have planted more than 10,000 trees along 1.6 miles of streams on Metro's floodplain buyout properties. Additional plantings are planned for the next year.

Stormwater LID Manual:
In anticipation of stormwater infiltration requirements within the MS4 permits, Metro Nashville previously procured the services of a consulting firm to compile a new volume (Volume V) of the Stormwater Management Manual. Volume V, also known as the Low Impact Development (LID) Manual, was finalized during FY12 and has been utilized by various developments during FY14. The LID Manual provides incentives to offer future developments the opportunity to utilize green infrastructure design approaches as an alternative to the traditional 80% total suspended solids (TSS) removal design techniques. The use of green infrastructure will become mandatory in 2016, but until then, MWS Stormwater will continue to offer various incentives to developments if green infrastructure approaches are proposed. Such incentives include a waiver of plan review fees, stormwater user fee reduction, and other credits. MWS Stormwater solicited feedback from stakeholder groups that included the local development community during development of the new manual.



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 Nashville.

Parks Department

Metro's Parks Department has been a key player in improving stormwater runoff and riparian habitat on Metro properties. Below are some of the major Parks Department activities that have served to improve the quality of stormwater runoff:

Dog Waste Pick-up On Parks Property – During the reporting year, approximately 376,200 dog waste bags (90% of the bags distributed) were estimated as being used at Metro Parks properties. Based on the amount of dog waste bags distributed, it is estimated that approximately 112,860 pounds (56.4 tons) of dog waste were collected for proper disposal.

Tree Planting Projects – During the reporting period, the Parks Department facilitated the planting of 456 trees. Below are the projects in which trees were planted:

Project	Trees Planted
East Park	2
Commerce Street	11
James Robertson Parkway	5
Metro Ct Football Fields	35
South Inglewood	3
Shelby Park	12
Two Rivers Dog Park	25
Rosa Parks	5
5th Avenue North	1
Woodland Street	4
2nd and Church	2
Bells Bend	10
Centennial Sportsplex	5
Fannie Mae Dees	15
Harpeth Knoll	6
Park Terrace	12
Sevier	30
St. Bernard	5
Richland Greenway (White Bridge)	3
Woodmont Park	1
Centennial Park	8
Percy Warner Parking Lot	15
Pitts Dog Park	15
Monroe Street	5
Arthur Street	25
Harpeth River greenway	100

Other Parks Department Projects – The following Parks Department projects/land acquisitions have also helped to protect and improve aquatic habitat throughout Davidson County:

- 103 acre addition to Cedar Hill Park;
- 75 acres on West Hamilton Rd along the Whites Creek Greenway;
- 101 acres on the Cumberland River adjacent to Crooked Branch Park;
- 5 acre site on Cumberland River in Pennington Bend;
- Completed construction of the Sevier Park Community Center, including an 800 square foot green roof and two bioretention gardens;

- Completed construction of two pervious parking lots including bioretention areas: Warner Park at the Warner Golf Course (lot: 141 spaces) and at Bells Bend Park (lot: 40 spaces);
- Completed bioretention area to treat water from the new Sportsplex Fitness Center;
- The Metropolitan Board of Parks and Recreation is working with the Tennessee Stream Mitigation Program to restore the stream channel through Shelby Park Golf Course – the stream is currently piped or runs in a concrete lined channel. The design phase is underway; and
- Through environmental education programs, interpretive exhibits, green facilities, and watershed protection, Metro Parks Nature Centers have a direct and valuable positive impact on water quality and conservation. Of the approximately 30,000 individuals who participate in nature center programs throughout the year, as many as 10,000 receive education and information directly related to water resources. Several thousand more are 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. Finally, the majority of the Parks and Recreation Department's 13,000 acres and 60 miles of greenway corridor is maintained in a natural condition, providing vitally important protection to our watersheds.

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 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 features, while avoiding sensitive environmental features. This benefits the community by protecting water quality, as well as reducing the impact of development on surrounding infrastructure and the community through the use of best practices in stormwater and wastewater management. In addition, the Community Character Manual includes objectives of the EPA and Metro Nashville's Stormwater Management Program, such as encouraging green infrastructure, protecting 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 for Healthy Community Design, which highlights the importance of minimizing the impact of development on the natural environment, especially air and water quality, and of integrating open space in developments for preservation and recreation.

During 2014, the Planning Department continued to lead the city's update to Nashville's General Plan; also referred to as NashvilleNext. Early in the process (2013), the Planning Department worked with area professionals and experts, including Metro Departments, to create a series of eighteen background reports. Each report provided readers with a summary of national best practices and what Nashville is doing to address each topic. During 2014, Planning staff have continued those conversations to include gathering additional input and ideas from the community. Planning staff also convened seven Resource Teams which are made up of local volunteers with expertise in each team's topic. Those teams have provided guidance and perspective to planners in discussing key trends and driving forces – the societal and economic factors which affect each topic. Three Resource Teams touch on natural resources and sustainable development issues – Natural Resources & Hazard Adaptation; Health, Livability & the Built Environment; and Land Use, Transportation & Infrastructure.

The Natural Resources & Hazard Adaptation Resource Team has focused much of their time on air, land and water. Discussions have included the interplay of land development, infrastructure choices,

impacts on natural resources, climate change, and increasing green infrastructure, including low impact development and population growth. The Health, Livability & the Built Environment Resource Team has discussed the importance of green spaces in our daily lives and overall health and wellness, including the role that natural resources play in our overall quality of life. The Land Use, Transportation & Infrastructure Resource Team builds on all the discussions from the other six Resource Teams and frames the discussion through the lens of linking land use, transportation and infrastructure decisions. This team has representatives from Metro Water Services involved in discussions and recommendations. Work from these teams will be incorporated into the NashvilleNext Plan document later this year.

The Planning Department has updated the way it maps Conservation Land Use Policy to be more comprehensive and reflect the latest data. In the past, Conservation policy was drawn as polygons within the policy shapefile (ArcMap GIS) as part of each Community Plan Update process. As such, Conservation polygons could become outdated as various layers of data were updated outside of each Community Plan Update process (there are fourteen Community Plans, and each one is updated every seven to ten years). Now Conservation Policy is mapped as a group layer, comprised of data from FEMA floodways/floodplains; Metro Stormwater Buffers; steep slopes (20% slope and greater); and problem/unstable soils. This Conservation Policy layer is placed on top of the second land use policy layer so that as each of these datasets is updated, the most comprehensive and current information is immediately reflected on the map for both Metro and the public's use.

The Planning Department also continues its collaboration with Metro Parks and Greenways and the Land Trust for Tennessee by identifying properties that would be good additions to Nashville's open space network. This includes properties that are important to preserve for headwater areas, for wildlife habitat, and for water management in flood-prone areas.

On a daily basis, the Planning Department meets with property owners and development professionals to discuss property ideas and projects. Planning staff discuss the importance of working within the natural features of each site, 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.

<u>MWS Engineering Division</u>

The MWS Engineering Division and the Overflow Abatement Program (OAP) overseeing the sanitary sewer systems have worked diligently to minimize the volume of unintentional discharges of sanitary sewer 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). The following list of projects exemplify MWS' recent commitments to reducing discharges of sanitary waste:

- Whites Creek WWPS: Construction of a new pumping station to improve reliability and increase pumping capacity to 47 Million Gallon/Day (MGD) peak rate was initiated during FY12. Project completion is anticipated during FY15 ~ $19,994,234 Projected Costs.
- Lakewood Sewer Replacement: This project, which began construction in January 2014, replaces existing sewers in poor condition with minor amounts of sewer rehabilitation and the construction of a new sewer system to serve the residents of this former satellite city. The project is anticipated to be completed in FY16 ~ $5,286,000 Projected Costs.

- West Park WWPS and Equalization Basin: Design was initiated in FY12 for this project, which will provide 21 MG of additional storage capacity at this site to reduce SSO events. Major design changes have delayed the anticipated design completion for this project until FY15. Construction is anticipated to begin during FY15. ~ Costs to be determined.
- Davidson - Brook Hollow Sewer Improvements: Design was initiated in FY14 on this project, which will provide additional capacity to eliminate overflows caused by hydraulic restrictions in the collection system. ~ $3,545,730 Projected Costs.
- Brick Church Pike Pipe: Design was initiated in FY13 for this project, which will provide approximately 10,000 LF in parallel trunk sewer to increase conveyance to reduce overflows into Ewing Creek. ~ Costs to be determined.
- Westchester Drive Rehabilitation: Design was initiated in FY14 for this project, which will provide rehabilitation of the upper portion of the Brick Church Pike trunk sewer to reduce overflows into Ewing Creek. ~ Costs to be determined.
- Cowan - Riverside Rehabilitation - Area 1 (Jones Ave.): Design of this project, which will reduce Infiltration/Inflow (I/I) by rehabilitation of the collection system, began in FY12 and was completed in FY14. Construction began in January 2014 and is anticipated to be completed in FY15. ~ $4,785,000 Projected Costs.
- Cowan - Riverside Rehabilitation - Area 2 (Dickerson Pike): Design of this project, which will reduce I/I by rehabilitation of the collection system, began in FY13 and was completed in FY14. Construction began in July 2014 and is anticipated to be completed in FY16. ~ $3,850,000 Projected Costs.
- Shelby Park Rehabilitation Phase 1 (Virginia Avenue): Design was initiated in FY13 for this project which will reduce I/I by rehabilitation of the collection system. Construction began on this project in January 2014 and is anticipated to be completed in FY15 ~ $4,937,000 Projected Costs.
- Shelby Park Rehabilitation Phase 2 (Norvel Ave.): Design was initiated in FY13 for this project, which will reduce I/I by rehabilitation of the collection system. Construction began on this project in May 2014 and is anticipated to be completed in FY15. ~ $5,530,000 Projected Costs.
- Shelby Park Rehabilitation, Phase 3 (Greenland Ave.): Design of this project was initiated in FY13, which will reduce I/I by rehabilitation of the collection system, and was completed in FY14. Construction is anticipated to begin in FY15. ~ Costs to be determined.
- Dodson Chapel Pipe: Design was initiated in FY13 for this project, which will provide additional capacity for flows to the Dodson Chapel Pump Station and Equalization Basins with the installation of approximately 3,300 LF of 48-inch gravity sewer. Design of the project was completed in June 2014, and construction is anticipated to begin in FY15. ~ Costs to be determined.
- Neely's Bend Rehabilitation: Design was initiated in FY13 for this project, which will reduce I/I by rehabilitation of the collection system. Construction began in December 2013 and is anticipated to be completed in FY15. ~ $2,461,000 Projected Costs.
- Apex Sewer Improvements: The design of this project, which will reduce hydraulic restrictions in the Separated Sewer System upstream of the Apex CSO facility, began in FY 2013. Construction is anticipated to be completed in FY15. ~ $954,000 Project Costs.
- 2013 Annual Rehabilitation: The design was initiated in FY13 for this project, which will address structural and I/I issues within the collection system in areas not included in the CAP/ER for the Consent Decree program. Construction is anticipated to begin in FY15. ~ $4,155,500 Projected Costs.

- Highway 100 - Tyne - Trimble Rehabilitation: Design was initiated in FY13 for this project, which will reduce I/I by rehabilitation of the collection system. Design was completed in FY14. Construction of the project will begin in FY15.
- Mill Creek Opryland EQ Facility Phase 2: Design was initiated in FY13 for this project, which will add 19 MG of additional flow equalization to this portion of the collection system to further reduce wet weather related overflows. Construction began on this project in January 2014 and is anticipated to be completed in FY15. ~ $10,500,000 Projected Costs.

MWS System Services Division

The Metro Water Services System Services Division (SSD) and contractor firms continued to inspect and clean sewers to assess conditions and prevent potential overflows. In FY14 SSD inspected with Closed Circuit TV (CCTV) approximately 840,998 linear feet and cleaned approximately 505,709 linear feet of sewer line. SSD began using new acoustic technology to make rapid assessments of potential blockages of sewer line segments. The tool called Sewer Line – Rapid Assessment Tool (SL-RAT) will assist SSD in assessing more sewers to prevent blockages and resulting overflows. In FY14, approximately 4,788,510 linear feet of sanitary sewer line were assessed using the SL-RAT technology.

During FY14, 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 service lines or main lines and recommend corrective actions to prevent sewer overflows. In previous years, SSD revised the sewer service line brochure to assist customers in correcting private sewer problems and educate them on how to prevent toilet and drain clogs. MWS has a staff member to oversee school-specific education programs, public education events and development of public education materials. The estimated/reported MWS sewer overflows for FY14 are depicted in Table 7H.5 within Section 3 of this report.

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

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
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 second year of this iteration of permit cycle was from 07/01/13 to 06/30/14. This Annual Report covers Metro Nashville's Fiscal Year (FY) 14 activities.

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). There were no changes to the list of impaired streams in the list in FY14, as the new 2014 303(d) list will not be in effect until the following reporting period for FY15.

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)	Habitat Alteration/Siltation	☐ Yes	X No	☐ Yes	X No
McCrory Creek (TN05130203-001-0150)	Habitat Alteration/Siltation, Nutrients	X Yes	☐ No	☐ Yes	X No
McCrory Creek (TN05130203-001-0100)	Pathogens, Habitat Alteration/Siltation, Nutrients	X Yes	☐ No	X Yes	☐ No
Unnamed Trib. to Stoners Creek (TN05130203-035-0400)	Habitat Alteration/Siltation	X Yes	☐ No	X Yes	☐ No
Stoners Creek (TN05130203-035-1000)	Pathogens, Habitat Alteration/Siltation	X Yes	☐ No	X Yes	☐ No
Stones River	Low DO, Odor, Sulfides, Flow Alteration	☐ Yes	X No	☐ Yes	X No
Scotts Creek (TN05130203-035-0100)	Nutrients, Habitat Alteration/Siltation	X Yes	☐ No	☐ Yes	X No
Dry Fork Creek (TN05130203-035-0300)	Habitat Alteration/Siltation	X Yes	☐ No	☐ Yes	X No
West Branch Hurricane Creek (TN05130203-036-0200)	Nutrients, Habitat Alteration/Siltation, Low DO	X Yes	☐ No	X Yes	☐ No
Hurricane Creek (TN05130203-036-0100)	Pathogens, Habitat Alteration/Siltation, Nutrients, Low DO	X Yes	☐ No	X Yes	☐ No
Mill Creek (TN05130202-007-5000)	Habitat Alteration/Siltation, Nutrients, Low DO	☐ Yes	X No	☐ Yes	X No
Holt Creek (TN05130202-007-1100)	Pathogens, Habitat Alteration/Siltation	☐ Yes	X No	☐ Yes	X No
Owl Creek (TN05130202-007-0900)	Habitat Alteration/Siltation, Nutrients	☐ Yes	X No	☐ Yes	X No
Indian Creek (TN05130202-007-0800)	Pathogens, Nutrients	☐ Yes	X No	☐ Yes	X No
Turkey Creek (TN05130202-007-0700)	Habitat Alteration/Siltation	☐ Yes	X No	☐ Yes	X No
Collins Creek (TN05130202-007-0600)	Habitat Alteration/Siltation	☐ Yes	X No	☐ Yes	X No

Whittemore Branch (TN05130202-007-1200)	Habitat Alteration/Siltation	☐ Yes	X No	☐ Yes	X No
Mill Creek (TN05130202-007-3000)	Habitat Alteration/Siltation, Nutrients, Low DO	☐ Yes	X No	☐ Yes	X No
Sorghum Branch (TN05130202-007-1300)	Habitat Alteration/Siltation	☐ Yes	X No	☐ Yes	X No
Cathy Jo (TN05130202-007-1490)	Nutrients, Habitat Alteration/Siltation	☐ Yes	X No	☐ Yes	X No
Shasta Branch (TN05130202-007-1410)	Pathogens	X Yes	☐ No	X Yes	☐ No
Sevenmile Creek (TN05130202-007-1450)	Pathogens/Nutrients	X Yes	☐ No	X Yes	☐ No
Sevenmile Creek (TN05130202-007-1400)	Pathogens, Habitat Alteration/Siltation, Nutrients, Low DO	X Yes	☐ No	X Yes	☐ No
Finley Branch (TN05130202-007-0300)	Pathogens, Habitat Alteration/Siltation	X Yes	☐ No	X Yes	☐ No
Mill Creek (TN05130202-007-0300)	Habitat Alteration/Siltation, Nutrients, Low DO	☐ Yes	X No	☐ Yes	X No
Sims Branch (TN05130202-007-0150)	Habitat Alteration/Siltation, Low DO	☐ Yes	X No	☐ Yes	X No
Sims Branch (TN05130202-007-0100)	Pathogens, Habitat Alteration/Siltation, Nutrients, Low DO	X Yes	☐ No	X Yes	☐ No
Mill Creek (TN05130202-007-0100)	Habitat Alteration/Siltation, Nutrients, Low DO	☐ Yes	X No	☐ Yes	X No
Manskers Creek (TN05130202-220-2000)	Pathogens, Habitat Alteration/Siltation	X Yes	☐ No	X Yes	☐ No
Walkers Creek (TN05130202-220-0200)	Pathogens	X Yes	☐ No	X Yes	☐ No
Lumsley Fork (TN05130202-220-0100)	Pathogens	X Yes	☐ No	X Yes	☐ No
Manskers Creek (TN05130202-220-1000)	Pathogens, Habitat Alteration/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)	Pathogens/Nutrients	X Yes	☐ No	X Yes	☐ No
Middle Fork Browns Creek (TN05130202-023-0200)	Pathogens, Habitat Alteration/Siltation, Nutrients	X Yes	☐ No	X Yes	☐ No

East Fork Browns Creek (TN05130202-023-0100)	Pathogens, Habitat Alteration/Siltation, Nutrients, Oil & Grease	X Yes	☐ No	X Yes	☐ No
Browns Creek (TN05130202-023-2000)	Pathogens, Habitat Alteration/Siltation, Nutrients, Oil & Grease	X Yes	☐ No	X Yes	☐ No
Browns Creek (TN05130202-023-1000)	Pathogens, Habitat Alteration/Siltation, Nutrients, Oil & Grease	X Yes	☐ No	X Yes	☐ No
Richland Creek (TN05130202-314-3000)	Habitat Alteration/Siltation, Nutrients	☐ Yes	X No	☐ Yes	X No
Vaughns Gap Branch (TN05130202-314-0750)	Pathogens, Habitat Alteration/Siltation	X Yes	☐ No	X Yes	☐ No
Vaughns Gap Branch (TN05130202-314-0700)	Pathogens, Habitat Alteration/Siltation	X Yes	☐ No	X Yes	☐ No
Jocelyn Hollow Branch (TN05130202-314-0800)	Pathogens	X Yes	☐ No	X Yes	☐ No
Richland Creek (TN05130202-314-2000)	Pathogens, Habitat Alteration/Siltation, Nutrients	X Yes	☐ No	X Yes	☐ No
Sugartree Creek (TN05130202-314-0400)	Pathogens, Habitat Alteration/Siltation, Nutrients	X Yes	☐ No	X Yes	☐ No
Bosley Springs Branch (TN05130202-314-0300)	Pathogens, Habitat Alteration/Siltation, Nutrients	X Yes	☐ No	X Yes	☐ No
Richland Creek (TN05130202-314-1000)	Pathogens, Habitat Alteration/Siltation, Nutrients	X Yes	☐ No	X Yes	☐ No
Cooper Creek (TN05130202-209-1000)	Pathogens, Habitat Alteration/Siltation	X Yes	☐ No	X Yes	☐ No
Little Creek (TN05130202-010-0700)	Habitat Alteration/Siltation	☐ Yes	X No	☐ Yes	X No
Eatons Creek (TN05130202-010-0100)	Habitat Alteration/Siltation	☐ Yes	X No	☐ Yes	X No
Ewing Creek (TN05130202-010-0800)	Habitat Alteration/Siltation	☐ Yes	X No	☐ Yes	X No
Drake Branch (TN05130202-010-0200)	Pathogens	X Yes	☐ No	X Yes	☐ No
Whites Creek (TN05130202-010-1000)	Pathogens/Nutrients	X Yes	☐ No	X Yes	☐ No

Gibson Creek (TN05130202-212-1000)	Pathogens, Habitat Alteration/Siltation, Flow Alteration	X Yes	☐ No	X Yes	☐ No
Neelys Branch (TN05130202-212-0100)	Pathogens	X Yes	☐ No	X Yes	☐ No
Dry Creek (TN05130202-027-2000)	Habitat Alteration/Siltation	☐ Yes	X No	☐ Yes	X No
Dry Creek (TN05130202-027-1000)	Pathogens	X Yes	☐ No	X Yes	☐ No
Loves Branch (TN05130202-211-1000)	Habitat Alteration/Siltation	☐ Yes	X No	☐ Yes	X No
Pages Branch (TN05130202-202-1000)	Pathogens	X Yes	☐ No	X Yes	☐ No
Davidson Branch (TN05130202-001T-0700)	Pathogens	X Yes	☐ No	X Yes	☐ No
Unnamed Trib. to Cheatham Reservoir (TN05130202-001T-0600)	Iron, TDS	☐ Yes	X No	☐ Yes	X No
Cheatham Reservoir (TN05130202-001-3000)	Pathogens	☐ Yes	X No	☐ Yes	X No
Otter Creek (TN05130204-021-0100)	Habitat Alteration/Siltation	X Yes	☐ No	X Yes	☐ No
Little Harpeth River (TN05130204-021-0100)	Pathogens, Habitat Alteration/Siltation, Low DO	X Yes	☐ No	☐ Yes	X No
Harpeth River (TN05130204-009-3000)	Nutrients, Low DO	X Yes	☐ No	X Yes	☐ No
Trace Creek (TN05130204-009-0900)	Habitat Alteration/Siltation	X Yes	☐ No	X Yes	☐ No
Flat Creek (TN05130204-009-0400)	Habitat Alteration/Siltation	X Yes	☐ No	X Yes	☐ No
Unnamed Trib. to South Harpeth (TN05130204-010-1400)	Flow Alteration	☐ Yes	X No	☐ Yes	X No
Unnamed Trib. to South Harpeth (TN05130204-010-0200)	Flow Alteration	☐ Yes	X No	☐ Yes	X No
Harpeth River (TN05130204-009-2000)	Nutrients, Low DO	X Yes	☐ No	X Yes	☐ No
Newsom Branch (TN05130204-009-0200)	Habitat Alteration/Siltation	X Yes	☐ No	X Yes	☐ No
Beech Creek (TN05130204-009-1100)	Habitat Alteration/Siltation, Nutrients	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)? A large portion of the county drains to Mill Creek, which is listed as an ETW due to the presence of the federally endangered Nashville Crayfish (*Orconectes shoupi*). A portion of the Harpeth River in Davidson County is listed as a State Scenic Riverway. X Yes ☐ No

E. Are you implementing additional specific provisions to ensure the continued integrity of ETWs or ONRWS located within your jurisdiction? Specific public education activities are planned for certain residential areas that drain to the Harpeth River and commercial/industrial areas that drain to Mill Creek. Nutrient and pathogen reduction education will be focused on that area. The MWS NPDES Stormwater Maintenance Sections and the MWS Sanitary Sewer Division have been trained on limiting in-creek excavation work within the Mill Creek watershed. X Ye s ☐ No ☐ N/A

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 (development 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, the NPDES Section mailed out informational flyers to 92 commercial landscaping companies, which is defined within the PIE plan as a targeted audience group. The informational flyers were designed to educate landscaping companies on the proper use of chemicals (fertilizers, pesticides, etc.) and the proper disposal of yard waste such as grass clippings, leaves, and brush. The NPDES Section also co-hosted a workshop with TDEC and the MWS Sanitary Sewer Pre-treatment Section for industrial operators within Davidson County. The half day workshop was designed to train plant managers, environmental managers, etc. at local industrial facilities on permit requirements and specific BMPs that could be implemented to improve stormwater runoff. Over 40 industrial operators attended the workshop and feedback was very positive.

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? X Yes ☐ No

E. Provide a summary of all public meetings required by the permit. Metro Nashville 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. The Metro Department of Public Works also has various public meetings. Metro Water Services also conducts public meetings relating to "water/sewer" projects prone to draw community interest. In previous permit years, the MWS Stormwater Division coordinated meeting with stakeholders from the development community, which were referred to as the Stormwater Advisory Committee (SWAC). In January of 2014, the SWAC merged with another community of stakeholders referred to as the Development Advisory Group. The Development Advisory Group will routinely meet to discuss development and permitting within Metro Nashville. The meetings will be initiated in the following reporting period (FY15). In addition to the Development Advisory Group, MWS Stormwater convened a separate community stakeholder group to discuss new regulations/oversight of infill development. In FY14, MWS's contractor facilitated 11 meetings with community stakeholders. In addition, MWS Stormwater also facilitates monthly meetings with the Stormwater Management Committee for sites appealing specific stormwater regulations. These meetings are also available to the public attend and comment.

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. ☐ 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 a new volume of the Stormwater Management Manual (Volume 5) dedicated to promoting/incentivizing the use of Low Impact Development (LID) techniques for post development stormwater management. During the reporting period for this annual report, there were 70 engineered plans submitted for a Grading Permit that include LID components on the design of stormwater permanent treatment practices. MWS Stormwater will continue to evaluate and coordinate with other Metro Departments to implement measures to reduce barriers to LID techniques.

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
MWS continued to develop a partnership with the Cumberland River Compact and the Nature Conservancy in FY14 to develop a Davidson County Watershed Stewardship Plan. A large component of the plan will involve stakeholder meetings and a process for Public Involvement/Input to the Stewardship Plan	(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

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. There were 318 grading permits issued during FY14 and 159 were completed in FY14. Not all of the Grading Permits were for sites over an acre (requiring a TDEC General Construction Stormwater Permit). All sites that grade 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.

C. How many of these active sites did you inspect this reporting period? Refer to attached Table 6C.1. MWS NPDES Section performed 6,064 construction related inspections in FY14. The inspections were performed on Grading Permit sites under construction. This includes inspections of smaller construction activities that were under an acre in size, but still required to obtain a Metro grading permit. In addition, MWS Stormwater also provides oversight and guidance to small construction activities with total disturbed area of less than 10,000 square feet (not requiring a standard grading permit). Refer to the attached Table 6C.2 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 MWS Stormwater NPDES adjusted the inspection frequency policy mid-way through the previous permit year to inspect all active construction sites at least once per month.

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 undergone several iterations of mapping updates of stormwater infrastructure into the Geographic Information System (GIS). Please note that the entire stormwater drainage system was collected for Davidson County over a decade ago. Originally there were over 7,000 outfalls mapped within the GIS system. The criteria used during the original inventory resulted in outfalls being mapped at the intersection of every pipe and channel. This methodology incorrectly identified the number of actual MS4 permitted outfalls. During the previous reporting period, 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, MWS NPDES also had the contractor create the following two outfall layers: 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 Private Outfalls – Point at which stormwater from private properties drain to either Waters of the State or MS4. Currently there are 14,424 MS4-Permitted Outfalls, 251 Sub-MS4 Outfalls, and 2,325 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, MWS NPDES had to assume the streams GIS layer 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 FY14, there were 477 separate stormwater infrastructure points screened for potential illicit discharges. All in all, there were a total of 517 ¼ mile grids completed, where an infrastructure point was screened or no MS4 infrastructure existed. Metro's MS4 permit only requires one outfall located within a ¼ industrial/commercial-zoned grid to be screened for potential illicit discharges. At the conclusion of FY14, there were a total of 1,445 grids left to be screened prior to January 31, 2017.

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 water leak or potential leak is suspected, NPDES initiates an IDDE investigation that is documented within the Cityworks database until the illicit discharge is eliminated.

F. What is your frequency for screening outfalls for illicit discharges? Each ¼ commercial/industrial grid will be screened before the end of Year 5 in the MS4 permit (January 31, 2017).

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)? During the FY14, there was one screening point for a suspected water leak and 2 field screening points for suspected illicit discharges. In addition, MWS NPDES initiated 114 separate water quality investigations during FY14, many of them originating from citizen complaints. Refer to Table 7H.1 for a complete listing of the 114 IDDE investigations initiated during FY14. In addition there were 20 spill response investigations and 5 private 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 systems to be abated. During the reporting period, the Health Department issued 27 notifications to property owners for failing septic systems. Refer to Table 7H.4. The Codes Sanitation Department also investigates sanitary sewer discharges from private properties.

I. 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 dealt with swiftly.

J. Do you have the authority to recover cost for addressing illicit discharges? ☐ Yes X No
(Not Currently)

8. Stormwater Management for Municipal Operations

A. Have stormwater pollution prevention plans (or an equivalent plan) been developed for: The NPDES Section developed a comprehensive Stormwater Management Plan, which was submitted in the 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.

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 X Yes ☐ No

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.

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

All municipal waste handling and disposal areas X Yes ☐ No

SWPPPs were created for the Central Waste Water Treatment Plant and the Dry Creek Wastewater Treatment Plant as they retain a Tennessee Multi-Sector

Permit for Industrial Stormwater runoff. Metro Nashville does not operate any waste transfer facilities or transfer stations, as it contracts those services out to private companies.

B. Are stormwater inspections conducted at these facilities? X Yes ☐ No

Each O&M facility where the RMPs were implemented require on-site personnel to perform weekly grounds inspections. MWS NPDES personnel will also perform audit inspections at a frequency yet to be determined.

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.) X Yes ☐ No
SOPs have been developed for most of the major O&M field activities. MWS posted all of the RMPs and individual water quality SOPs as well as a general MS4 educational video to an internal intranet web page for each O&M Department to show their key field staff. During FY14, MWS NPDES worked with various maintenance Departments to have their employees watch the general MS4 video and review the water quality SOPs written specifically for their department activities.

D. Do you have a prioritization system for storm sewer system and permanent BMP inspections? X Yes ☐ No
In the first year of the permit, NPDES submitted a BMP Maintenance Verification Plan to TDEC that outlined a several prong strategy to ensure stormwater Permanent Treatment Practices (PTPs) are being properly maintained. The strategy varies according to which set of Metro's regulations the PTPs were constructed under. The plan includes some inspections by MWS NPDES personnel as well as receipt and review of required maintenance reports received from owner/operators.

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

F. On average, how frequently are catch basins and other inline treatment systems cleaned out/maintained? Frequency of cleanings depends on conditions. The MWS Stormwater Routine 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/ perform maintenance prior to many large rain events. Table 8F.1 depicts the number of routine maintenance "work order" activities performed on MS4 stormwater infrastructure during FY14. Please note that each "work order" may include the cleaning out of multiple catch basins. In addition to performing routine maintenance and cleaning of stormwater infrastructure, MWS Stormwater also operates a preventative maintenance program by aggressively sweeping public curb and gutter streets. MWS Stormwater prioritizes certain streets for sweeping activities based on how dirty the streets are. Refer to Table 8F.2 for street sweeping collection numbers in FY14.

In addition to the routine maintenance activities such as inlet and pipe cleaning, MWS Stormwater also conducts various large engineered projects to correct neighborhood flooding issues. Recently, the MWS Stormwater NPDES Section coordinated with the MWS Stormwater Remedial Maintenance Division 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. The MWS Stormwater Maintenance Division retroactively completed the water quality evaluation worksheets for all of the projects that have been designed within the last few years. As a result, MWS NPDES was able to determine that large MWS Stormwater Maintenance flood control projects either already built or being planned to be built will provide the following benefits to water quality.

- Removal of approximately 3,447 cubic yards of accumulated sediment,
- Stabilization of approximately 544 linear feet of stream bank, and
- Removal of approximately 587 linear feet of concrete lined ditch.

3.2.3 - Illicit discharge detection and elimination X Yes ☐ No

If *Yes*, identify the number of municipal employees trained Throughout FY14, there were approximately 14 MWS NPDES staff members that have the adequate training to respond to and enforce on illicit discharge investigations. Nine employees in particular within the NPDES Section are routinely available to respond to, sample, and follow-up with illicit discharge investigations. Note: NPDES has also worked with various O&M sections to properly identify and report illicit discharges.

3.2.4 - 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 14 NPDES staff members that had adequate training (TDEC Level 1 EPSC Workshop) to respond to and inspect stormwater runoff from construction activities. Six of the employees are dedicated fulltime to inspecting development sites under construction.

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

If *Yes*, identify the number of municipal employees trained During FY14, there were an average of 6 engineers employed within the Stormwater Development and Review Section that have been through the TDEC Level II Design Principles for Erosion Prevention and Sediment Control for Construction Sites. Four of the engineers are fully dedicated to reviewing plans for grading permit sites.

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

If *Yes*, identify the number of municipal employees trained In FY14, the MWS Stormwater NPDES section coordinated with several other Departments such as Parks, MWS System Services, and Public Works street maintenance sections.

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? MWS Stormwater has compiled a new volume of the Stormwater Management Manual. Volume V (also referred to as the LID Manual) provides specifications for development or redevelopment sites to follow in installing "green" stormwater practices and provides an incentive for sites to use the green practices. X Yes ☐ No

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 sites grading more than 10,000 square feet must obtain a grading permit. In order to obtain a grading permit, engineered plans must be submitted to the Stormwater Development Review Section for review and approval. All developments increasing the impervious footprint are required to install permanent stormwater treatment measures for water quality and quantity.

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? 1,813 plans were submitted to the MWS Development Review Section during FY14. 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 FY14.

G. How many development and redevelopment project plans were approved? 1,360 plans were approved during FY14. 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 FY14, there were approximately 318 grading permits issued.

H. How many permanent stormwater management practices/facilities were inspected? There were 30 inspections by NPDES staff, 122 by outside vendors for compliance with Metro's BMP Maintenance Program (reporting requirements) for a total of 152 inspections. Please note that some of the 122 outside vendor inspections include inspections performed on Metro facilities.

I. How many were found to have inadequate maintenance? 9 of those inspected by NPDES required maintenance and were notified by NOV, 1 received an NOV for failure to submit annual report, and 4 received warning letters notifying owners of maintenance responsibility. The 122 inspected by outside vendors reported that maintenance was not required or was completed. Note: As reported in Section 11 below, additional NOVs were issued to BMP owners for failure to submit Annual Inspection/Maintenance Reports or for disturbance of an established water quality buffer.

J. Of those, how many were notified and remedied within 30 days? (If window is different than 30 days, please specify) Of the 9 notified by NOV, 5 are still in process. The other 4 were remedied within a timeframe of 35, 92, 151, and 183 days.

K. How many enforcement actions were taken that address inadequate maintenance? All notifications were Notices of Violation (no penalty). Additionally, several types of informational letters were sent to BMP owners. 34 letters were sent to new BMP owners outlining their maintenance and reporting responsibilities. 32 reminder letters were sent to owners approaching their first report due deadline. 55 letters were sent to owners who missed their first report that was due in 2013.

L. Do you use an electronic tool (e.g., GIS, database, spreadsheet) to track post-construction BMPs, inspections and maintenance? The NPDES Section currently uses a Microsoft Access database to track inspections. The database can be linked into GIS. Metro is currently mapping all post-construction stormwater treatment structures as a feature within the GIS database.	X Yes	☐ No
M. Do all municipal departments and/or staff (as relevant) have access to this tracking system?	☐ Yes	X 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 318, which is an assumed number based on the number of grading permits issued during FY14.

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: (Specific language within the MS4 permit requires Metro Nashville to monitor and control runoff from the following types of industrial facilities.)

- 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 1st permit year, the NPDES program 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 do not qualify as industrial facilities subject to SARA Title III, Section 313 reporting requirements and are not required to be inspected by Metro.

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; and 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.	X Yes	☐ No
Facilities defined as industries by the EPA stormwater application rule of November 16, 1990		

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 Metro is required to inspect within a 3 year period. As mentioned above, Metro also inventoried other industrial facilities such as TMSP and RMCP facilities in which they are not required to inspect within the 3 year period.

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? The MWS NPDES Program has created a Standard Operating Procedure (SOP) for performing inspections of industrial facilities. 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, MWS NPDES is required to inspect approximately 47 industrial facilities within a three year period. In FY14, MWS NPDES completed the permit-required inspections ahead of schedule by inspecting 35 facilities. During the following year, MWS NPDES will begin proactive inspections of selected TMSP and RMCP facilities that are not required to be inspected by the MS4 permit. In addition to the numerous inspections that were conducted during FY14, MWS NPDES coordinated with TDEC and MWS Pretreatment to host an educational workshop for private industrial operators. X Yes ☐ No

F. Provide a listing of inspections performed during this reporting year: During FY14 MWS NPDES inspected 35 industrial facilities. Please note that MWS NPDES also performed follow-up inspections on Industrial facilities in which problems have been noted in the past, which are not represented on this list. Refer to Table 10.F.1 for a list of Industrial Facilities that were inspected during FY14

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.

Action	Construction	Permanent Stormwater Controls	Illicit Discharge	Authority?
Notice of violation	98	50	20	X Yes ☐ No
Administrative Penalties	$39,725	$800	$3,500	X Yes ☐ No
Stop Work Orders	33	#	#	X Yes ☐ No
Civil penalties	#	#	#	☐ Yes X No
Criminal actions	#	#	#	☐ Yes X No
Administrative orders	#	#	#	X Yes ☐ No
Other:		#		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 FY14, the NPDES Section, which oversees various MS4 compliance activities, operated under a budget of $1.51 million. The overall MWS Stormwater Division's budget, which includes the NPDES program, development and review engineers, and stormwater maintenance was $14.63 million. 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 FY14 budget includes $1.51 million dedicated to the Stormwater NPDES Program, while the overall Stormwater Department is operating under a budget of $14.43 million.

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 $14 million

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)? Currently, there are 73 employees within the overall MWS Stormwater Division. There are 20 vacancies that have been budgeted and will hopefully be filled within FY15, bringing the total number of employees to 93.

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?

The NPDES Section's Watershed Group has, within the last few years, been performing detailed sampling for TMDL streams throughout Metro. While long-term trends cannot be extrapolated at this time, the data collection has proven beneficial in identifying segments of streams where pollutants are elevated or within loading requirements. Please refer to the attached Table 13A.1 (TMDL Sampling Data) for the complete quarterly sampling results for the FY14 reporting period. Please note that previous Annual Reports contain additional data for monitoring conducted during those reporting periods.

Over the years, the NPDES Program 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. the NPDES Program performs do not easily translate into quantifiable loading reduction numbers. As an attempt to quantify pollutant loading reduction numbers from various NPDES programs, an effort was made in the previous reporting periods to review individual IDDE case files for a four year period to calculate an estimated loading reduction on a yearly basis. Based on the calculations, it was found that the NPDES Program directly or indirectly contributed to the average estimated reduction of 8,568.14 pounds of general stormwater pollutants such as sediment, metals, etc. and 1,511,414 pounds of sewage-related waste to the MS4 or receiving streams each year. The exercise in calculating NPDES Program pollutant removal has also sparked a renewed effort within the program to improve documentation processes to produce more reliable pollutant reduction estimates by creating new reporting mechanisms within databases.

The NPDES Section 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. Part of the reasons that TDEC changed the permit-required monitoring plan was so the sample results would be more useful in performing data analyses. Since the new monitoring plan has only been implemented for 3 years, the dataset is incomplete and it will be several years before detailed analysis can be performed on the data. The Ambient Sampling, Wet Weather Sampling, and Benthic Sampling Program data is summarized in Table 13A.3, Table 13A.4, and Table 13A.5 respectively. The NPDES Section's Watershed Group collected approximately 278 water quality samples and performed visual stream assessments on approximately 24.3 miles of 303(d)-listed streams within FY14.

Indicator	Began Tracking (year)	Frequency	Number of Locations
E. coli (TMDL Sampling)	2010	5 Dry-weather Samples Each Quarter.	Total 38 sites to be sampled within a 5 year period.

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. As described above, it is hard to perform any statistical analysis on water quality sampling as sampling locations, methodologies, and frequencies have changed over the 3 permit cycles. Metro Nashville is in the third year of a more-consistent monitoring plan as part of the new MS4 permit and TMDL monitoring requirements. This data will hopefully be useful in performing future analysis on a watershed basis in determining SWMP effectiveness.

In reviewing some of the performance measures over the last 10 years (summarized in Table 13A.2), it becomes obvious to conclude that the overall number of water quality (IDDE) investigations and stormwater-specific enforcements have dramatically reduced the amount of pollutants into the MS4 and receiving streams. We believe this can be contributed to the robust IDDE program, public education and outreach and proactive monitoring/screening efforts.

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.) Reference the above answer. The NPDES Section has noticed fewer and fewer illicit discharge findings over the years that 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.

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. MWS NPDES requested and received several changes to the locations of wet weather monitoring locations as several locations (listed in the original permit) lacked necessary flow for monitoring purposes. A copy of the TDEC approval letters were included in previously submitted Annual Reports.

Changes to replace an ineffective or unfeasible BMP. There are no changes to report during FY14.

Information (e.g., additional acreage, outfalls, BMPs) on program area expansion based on annexation or newly urbanized areas. Just prior to 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, the NPDES program field screened the commercial areas for potential illicit discharge connections and collected all of the stormwater infrastructure into the GIS database, and began performing maintenance services for the newly annexed area.

Changes to the program as required by the division. No changes occurred during FY14.

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
Printed Name and Title

Manager, MWS Stormwater - NPDES Office

Signature

11/13/14
Date

3.0 Required MS4 Reporting Tables

List of Tables and Other Materials

Table 6B.1 – Grading Permit Projects Initiated/Completed within FY14

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	**2,607**	**2,358**	**2,001**

Table 6C.1 – Permitted Construction Site Inspections in FY14

Inspection Type	Initial EPSC	Bond Reduction	Bond Release	Temp U&O	Final U&O	Routine General Permit	Initial Complaint	Follow-up Complaint	Total
Year Previous to Cycle II PY1	198	61	28	46	113	2,235	0	0	2,681
FY04	270	80	44	53	122	4,139	0	0	4,708
FY05	271	23	59	56	177	4,923	0	0	5,509
FY06	273	100	85	85	244	4,799	69	66	5,721
FY07	257	112	143	90	157	5,349	190	254	6,552
FY08	176	132	141	107	174	4,581	382	634	6,327
FY09	124	195	224	104	172	4,480	230	631	6,160
FY10	189	147	127	151	160	3,910	163	232	5,079
FY11	188	149	87	115	161	4,242	136	379	5,457
FY12	197	148	108	135	183	4,482	135	455	5,843
FY13	192	100	96	98	153	4,176	113	242	5,170
FY14	391	76	87	148	265	4,728	149	220	6,064
Total	**2,726**	**1,323**	**1,229**	**1,188**	**2,081**	**52,044**	**1,567**	**3,113**	**65,271**

Note: The shaded columns represent the inspections performed on non-permitted construction sites. For FY 03, FY 04, and FY 05, inspections of non-permitted sites were counted in the routine GP column.
Inspection numbers obtained from the NPDES Office results matter spreadsheet.

Table 6C.2 – Small Construction Site Oversight in FY14

Building permit signed off for new construction (with stormwater checklists)	484
Application for single family Grading Permit (Tier II)	14
Follow up site visits for single family construction	754

Note: Generally, the construction of single family homes distrurbing more than 10,000 square feet is required to obtain a Grading Permit. Instead of requiring Single Family units disturbing less than 10,000 square feet to obtain a Grading Permit, MWS Stormwater provides oversight by requiring sites to submit checklists (with plans) for sign-off required from MWS Stormwater prior to obtaining the Building Permit. MWS Stormwater performs numerous inspections on single family homes for the sole purpose of reviewing erosion and sediment controls.

Table 7H.1 – Illicit Discharge Investigations Initiated During FY14

ID Number	Date Initiated	Description	Dispatched To	Problem Address
449214	7/2/2013 7:14	Water Quality Complaint	DOHN, REBECCA	1310 CHARLOTTE AVE
449728	7/3/2013 9:05	Water Quality Complaint	HUNT, MICHAEL	1770 UNION HILL RD
449872	7/3/2013 10:47	Water Quality Complaint	HUNT, MICHAEL	0 PINE ST
450780	7/8/2013 14:10	Water Quality Complaint	DOHN, REBECCA	3100 KEELING AVE
451042	7/9/2013 10:50	Water Quality Complaint	DOHN, REBECCA	3076 DELTA QUEEN
452789	7/12/2013 10:57	Water Quality Complaint	HUNT, MICHAEL	4525 HARDING PIKE
452879	7/12/2013 15:21	Water Quality Complaint	HUNT, MICHAEL	1000 OLD DRY CREEK ROAD
454485	7/18/2013 7:28	Water Quality Complaint	DOHN, REBECCA	131 BELLEVUE ROAD
455135	7/19/2013 9:20	Water Quality Complaint	DOHN, REBECCA	4500 HARDING PIKE
457196	7/25/2013 14:44	Water Quality Complaint	JOHNS, DENICE D	1 BURTON HILLS
457979	7/29/2013 12:35	Water Quality Complaint	DOHN, REBECCA	677 BREWER
457987	7/29/2013 13:05	Water Quality Complaint	DOHN, REBECCA	4320 HARDING PK
459261	8/1/2013 11:04	Water Quality Complaint	WINESETT, STEVE	2217 RIVERWAY DR
459950	8/5/2013 7:50	Water Quality Complaint	HEWITT, JASON E	2960 FOSTER CREIGHTON
462167	8/9/2013 14:47	Water Quality Complaint	DOHN, REBECCA	4000 LEBANON
462877	8/13/2013 9:35	Water Quality Complaint	HUNT, MICHAEL	1302 PLYMOUTH AVE
464089	8/16/2013 7:21	Water Quality Complaint	HEWITT, JASON E	344 WESTFIELD DR
465187	8/20/2013 8:42	Water Quality Complaint	DOHN, REBECCA	3458 DICKERSON PIKE
465245	8/20/2013 10:18	Water Quality Complaint	HEWITT, JASON E	0 OLD GLENROSE AVE
466384	8/22/2013 14:33	Water Quality Complaint	WINESETT, STEVE	5517 CHARLOTTE PIKE
466654	8/23/2013 10:31	Water Quality Complaint	HEWITT, JASON E	5205 CENTENNIAL BLVD
467511	8/27/2013 7:23	Water Quality Complaint	HEWITT, JASON E	2603 OLD MATTHEWS ROAD
468541	8/29/2013 12:24	Water Quality Complaint	HEWITT, JASON E	3132 JONESBORO
470180	9/5/2013 8:01	Water Quality Complaint	DOHN, REBECCA	98 WALLACE
470324	9/5/2013 11:41	Water Quality Complaint	HEWITT, JASON E	155 OAK VALLEY DR
472281	9/11/2013 14:16	Water Quality Complaint	HAYES, JOSH	1135 BELVIDERE
472288	9/11/2013 14:34	Water Quality Complaint	HOLT, BONNYE	1902 11TH AVENUE N
473059	9/13/2013 10:14	Water Quality Complaint	HEWITT, JASON E	304 OLD LEBANON DIRT RD
473084	9/13/2013 10:40	Water Quality Complaint	HEWITT, JASON E	8026 GREENBRIER RD
473326	9/13/2013 15:21	Water Quality Complaint	HEWITT, JASON E	1394 COUNTY HOSPITAL RD
474767	9/18/2013 14:06	Water Quality Complaint	OHARA, KATHERINE	3708 BRUSH HILL RD
475033	9/19/2013 11:19	Water Quality Complaint	HEWITT, JASON E	4314 HARDING PIKE
475309	9/20/2013 7:25	Water Quality Complaint	HAYES, JOSH	2706 12TH AVE S
476209	9/23/2013 14:26	Water Quality Complaint	HEWITT, JASON E	5406 KNOB RD
476269	9/23/2013 15:20	Water Quality Complaint	HEWITT, JASON E	701 LEA AVE
476279	9/23/2013 15:28	Water Quality Complaint	HEWITT, JASON E	522 8TH AVE S
476550	9/24/2013 10:55	Water Quality Complaint	HEWITT, JASON E	6317 CHARLOTTE PK
477092	9/25/2013 12:17	Water Quality Complaint	DOHN, REBECCA	184 RADNOR ST
478615	9/30/2013 10:49	Water Quality Complaint	HEWITT, JASON E	2009 SEVIER ST
478641	9/30/2013 11:13	Water Quality Complaint	HEWITT, JASON E	35 LAKESHORE CT
479215	10/1/2013 12:10	Water Quality Complaint	HEWITT, JASON E	4700 CHARLOTTE PK
479249	10/1/2013 12:27	Water Quality Complaint	HEWITT, JASON E	916 N 2ND ST
480543	10/3/2013 14:25	Water Quality Complaint	HEWITT, JASON E	825 8TH AVE S
480873	10/4/2013 10:57	Water Quality Complaint	HEWITT, JASON E	105 HOLT HILLS ROAD
480876	10/4/2013 11:01	Water Quality Complaint	HEWITT, JASON E	411 FRANKLIN LIMESTONE RD
481040	10/4/2013 14:28	Water Quality Complaint	HEWITT, JASON E	4015 HILLSBORO PIKE
482866	10/10/2013 12:50	Water Quality Complaint	HEWITT, JASON E	6030 NEIGHBORLY AVE
483094	10/11/2013 7:30	Water Quality Complaint	HEWITT, JASON E	1412 GARTLAND

Table 7H.1 – Illicit Discharge Investigations Initiated During FY14 (Continued)

ID Number	Date Initiated	Description	Dispatched To	Problem Address
483716	10/14/2013 14:11	Water Quality Complaint	HEWITT, JASON E	0 BRENTWOOD CHASE DR.
486347	10/22/2013 12:56	Water Quality Complaint	HERMAN, SHAWN	3217 HIDDEN CREEK DR
488378	10/29/2013 8:42	Water Quality Complaint	SAAD, PHIL	108 DULUTH
491166	11/6/2013 13:56	Water Quality Complaint	HEWITT, JASON E	7200 CENTENNIAL BLVD
491314	11/7/2013 7:53	Water Quality Complaint	HEWITT, JASON E	5400 CENTENNIAL BLVD
491322	11/7/2013 8:17	Water Quality Complaint	HEWITT, JASON E	6100 CENTENNIAL BLVD
492692	11/12/2013 11:36	Water Quality Complaint	HEWITT, JASON E	1398 COUNTY HOSPITAL RD
493778	11/15/2013 9:52	Water Quality Complaint	HEWITT, JASON E	3943 NOLENSVILLE RD
495012	11/20/2013 9:52	Water Quality Complaint	HEWITT, JASON E	13344 OLD HICORY BLVD
497650	12/3/2013 12:30	Water Quality Complaint	WINESETT, STEVE	5353 Cane Ridge Road
497997	12/4/2013 11:43	Water Quality Complaint	HEWITT, JASON E	104 glemont Drive
498157	12/4/2013 14:25	Water Quality Complaint	HEWITT, JASON E	405 PARK CIRCLE
503488	12/19/2013 14:52	Water Quality Complaint	TERRYNELSON, ANNELI	519 BELL ROAD
503562	12/20/2013 7:08	Water Quality Complaint	HEWITT, JASON E	4000 CLARKSVILLE PIKE
509710	1/17/2014 10:34	Water Quality Complaint	HEWITT, JASON E	3476 CALAIS CIRCLE
512399	1/28/2014 13:42	Water Quality Complaint	HEWITT, JASON E	2622 EDGE OF LAKE
513456	2/3/2014 10:59	Water Quality Complaint	HEWITT, JASON E	707 STEWARTS FERRY PIKE
513582	2/3/2014 15:27	Water Quality Complaint	HEWITT, JASON E	1300 ELMWOOD AVE
515006	2/11/2014 7:20	Water Quality Complaint	HEWITT, JASON E	4415 HOWELL PLACE
515426	2/12/2014 12:43	Water Quality Complaint	HEWITT, JASON E	782 OLD HICKORY BLVD
516496	2/19/2014 7:40	Water Quality Complaint	HEWITT, JASON E	436 SCOTTS CREEK TRAIL
516879	2/20/2014 7:27	Water Quality Complaint	HEWITT, JASON E	300 9TH AVE S
517050	2/20/2014 12:47	Water Quality Complaint	HEWITT, JASON E	319 PEABODY ST
517437	2/21/2014 14:33	Water Quality Complaint	HEWITT, JASON E	4071 POWELL AVE
518105	2/25/2014 11:47	Water Quality Complaint	HUNT, MICHAEL	abbott martin rd & wallace lane
518976	2/28/2014 13:38	Water Quality Complaint	HEWITT, JASON E	1007 MURFREESBORO PK
521450	3/12/2014 9:41	Water Quality Complaint	HEWITT, JASON E	7128 HIGHWAY 70S
522236	3/14/2014 13:52	Water Quality Complaint	HEWITT, JASON E	130 W TRINITY LN
522254	3/14/2014 14:44	Water Quality Complaint	HEWITT, JASON E	2009 SEVIER ST
523961	3/24/2014 7:26	Water Quality Complaint	HEWITT, JASON E	0 POWELL AVE
524032	3/24/2014 9:30	Water Quality Complaint	TERRYNELSON, ANNELI	5691 PETTUS RD
524312	3/25/2014 8:14	Water Quality Complaint	WINESETT, STEVE	1214 MURFREESBORO PK
524326	3/25/2014 8:40	Water Quality Complaint	TERRYNELSON, ANNELI	1008 E TRINITY LN
524669	3/26/2014 7:31	Water Quality Complaint	TERRYNELSON, ANNELI	3914 WALLACE LANE
524730	3/26/2014 9:14	Water Quality Complaint	WINESETT, STEVE	3914 Wallace Lane
526376	4/2/2014 9:31	Water Quality Complaint	DOHN, REBECCA	600 S 1ST
527392	4/7/2014 10:11	Water Quality Complaint	HAYES, JOSH	628 OLD HICKORY
527457	4/7/2014 12:14	Water Quality Complaint	HEWITT, JASON E	4114 NOLENSVILLE PIKE
528818	4/11/2014 10:05	Water Quality Complaint	HOLT, BONNYE	981 MURFREESBORO PK
530022	4/17/2014 8:40	Water Quality Complaint	HEWITT, JASON E	1807 Rosewood Avenue
530444	4/18/2014 16:00	Water Quality Complaint	HEWITT, JASON E	110 INTERSTATE DRIVE
531683	4/24/2014 13:54	Water Quality Complaint	TERRYNELSON, ANNELI	4890 LICKTON PIKE
532344	4/28/2014 14:11	Water Quality Complaint	GARMON, MARY	4817 mccool rd
532954	4/30/2014 13:30	Water Quality Complaint	HEWITT, JASON E	1422 GALLATIN PK
534051	5/5/2014 11:09	Water Quality Complaint	HEWITT, JASON E	4211 CHARLOTTE AVE
534657	5/7/2014 7:55	Water Quality Complaint	HAYES, JOSH	728 MASSMAN DR
534862	5/7/2014 13:58	Water Quality Complaint	HEWITT, JASON E	101 broadway
534889	5/7/2014 14:28	Water Quality Complaint	HEWITT, JASON E	219 CLEVELAND ST
536109	5/12/2014 14:46	Water Quality Complaint	HEWITT, JASON E	205 HARPETH VIEW PL

Table 7H.1 – Illicit Discharge Investigations Initiated During FY14 (Continued)

ID Number	Date Initiated	Description	Dispatched To	Problem Address
536543	5/13/2014 14:38	Water Quality Complaint	HEWITT, JASON E	307 37TH AVE N
536806	5/14/2014 13:53	Water Quality Complaint	TERRYNELSON, ANNELI	621 MAINSTREAM DR
537193	5/15/2014 15:32	Water Quality Complaint	DOHN, REBECCA	3805 WOODMONT
537360	5/16/2014 11:20	Water Quality Complaint	HEWITT, JASON E	812 BELTON DRIVE
537545	5/16/2014 15:36	Water Quality Complaint	DOHN, REBECCA	2201 21ST AV S
537744	5/19/2014 10:13	Water Quality Complaint	HEWITT, JASON E	2215 ROSA L PARKS
538669	5/21/2014 13:28	Water Quality Complaint	HEWITT, JASON E	305 BROADWAY
540281	5/29/2014 9:14	Water Quality Complaint	HEWITT, JASON E	2413 FAIRBROOK DRIVE
540290	5/29/2014 9:32	Water Quality Complaint	HEWITT, JASON E	3172 Penn Meade Way
540867	5/30/2014 15:19	Water Quality Complaint	OHARA, KATHERINE	4317 LITTLE MARROWBONE RD
541689	6/3/2014 14:08	Water Quality Complaint	HAYES, JOSH	413 ELM ST
541891	6/4/2014 9:03	Water Quality Complaint	WINESETT, STEVE	1101 NASBORO BLVD
543525	6/10/2014 13:45	Water Quality Complaint	HEWITT, JASON E	I 40 W & OLD HICKORY BLVD
544507	6/13/2014 11:54	Water Quality Complaint	TERRYNELSON, ANNELI	3105 LARKSPUR DRIVE
544508	6/13/2014 11:57	Water Quality Complaint	HEWITT, JASON E	3616 GALLATIN PK
544813	6/16/2014 10:28	Water Quality Complaint	HUNT, MICHAEL	1905 PAMELA DRIVE
547766	6/26/2014 12:18	Water Quality Complaint	TERRYNELSON, ANNELI	2221 RIVERWAY DRIVE

Note: Whille many of the investigations resulted in the detection and ellimination of illicit discharges, there were many that resulted in no issues being found. Every investigation, regardless of the findings were tracked within the Cityworks database.

Table 7H.2 – Spill Response Investigations Initiated by NPDES During FY14

ID #	Date Initiated	Description	Dispatched To	Problem Address
454019	7/17/2013 7:07	Spill Response	HAYES, JOSH	716 THOMPSON LN
456226	7/23/2013 13:28	Spill Response	WINESETT, STEVE	I 40 EAST & BRILEY PKWY
463624	8/15/2013 6:49	Spill Response	HAYES, JOSH	410 33rd Avenue
472383	9/12/2013 6:52	Spill Response	HAYES, JOSH	WHITE BRIDGE ROAD & KNOB ROAD
473922	9/17/2013 7:11	Spill Response	BINDER, DALE	1980 PORT JAMES
477198	9/25/2013 14:42	Spill Response	HEWITT, JASON E	2437 GLENROSE AVE
478285	9/27/2013 13:39	Spill Response	HEWITT, JASON E	801 CAMPBELL RD
486531	10/23/2013 6:53	Spill Response	HEWITT, JASON E	118 POWELL PL
489298	10/31/2013 13:57	Spill Response	HEWITT, JASON E	220 DODGE
494034	11/15/2013 15:38	Spill Response	HEWITT, JASON E	610 DUE WEST AVE
502036	12/16/2013 7:39	Spill Response	HEWITT, JASON E	13011 OLD HICKORY BLVD
504623	12/30/2013 8:04	Spill Response	BINDER, DALE	2120 LEBANON PIKE
505343	1/2/2014 7:05	Spill Response	BINDER, DALE	717 DICKERSON PIKE
507598	1/10/2014 14:17	Spill Response	HEWITT, JASON E	1002 INDUSTRIAL DR
509945	1/21/2014 6:18	Spill Response	BINDER, DALE	1401 CHURCH ST
511631	1/27/2014 10:20	Spill Response	HAYES, JOSH	5888 S NEW HOPE RD
516128	2/18/2014 8:42	Spill Response	HEWITT, JASON E	1314 GALLATIN PIKE
517536	2/24/2014 7:34	Spill Response	BINDER, DALE	3301 KNIGHT
521558	3/12/2014 12:09	Spill Response	HAYES, JOSH	831 FESSLERS PARKWAY
522732	3/18/2014 10:21	Spill Response	BINDER, DALE	5581 FRANKLIN PIKE

Table 7H.3 – Private Sewer Discharge Investigations Initiated by NPDES During FY14

ID	Date Initiated	Description	Dispatched To	Problem Address
513817	2/4/2014 14:51	Private Sewer System Overflow	HEWITT, JASON E	3401 ANDERSON RD
516314	2/18/2014 13:52	Private Sewer System Overflow	TERRYNELSON, ANNELI	14711004000
527169	4/4/2014 14:29	Private Sewer System Overflow	HEWITT, JASON E	705 S 12TH ST
527979	4/8/2014 14:30	Private Sewer System Overflow	HEWITT, JASON E	271 OLD HICKORY BLVD
545372	6/17/2014 13:51	Private Sewer System Overflow	HEWITT, JASON E	500 PICCADILLY ROW

Table 7H.4 - Failing Septic System Investigations Performed by the Health Department in FY14

Map & Parcel	Date Received	Street Name	Last Name	Job Description	Environmentalist	Sewage on Ground	Notice Issued	Citation	Date
168-00-0 084.00	4/29/2013	8969 Hwy 100	Tolleson	Failure	Fellwock	5/9/2013	5/13/2013	7/2/2013	9/11/2013
038-00-0 140.00	5/29/2013	6179 Old Hickory Blvd	Hackwell	Failure	Fellwock	5/29/2013	5/30/2013		
021-00-0 002.01	6/21/2013	6534 Clarksville Pk	Simpson	Failure	Fellwock	6/25/2013	6/26/2013		
031-00-0 103.00	7/3/2013	4998 Tranham Rd	Gooch	Failure	Fellwock	7/8/2013	7/9/2013	9/3/2013	10/9/2013
015-00-0 095.00	7/12/2013	2726 Union Hill Rd	Proctor	Failure	Fellwock	7/16/2013	7/17/2013		
030-00-0 048.01	8/1/2013	5023 Seymour Hollow Rd	Millikin	Failure	Fellwock	8/6/2013	8/15/2013		
014-00-0 159.00	8/22/2013	7412 Bidwell Road	Rowls	Failure	Fellwock	8/23/2013	8/27/2013	2/3/2014	3/12/2014
110-00-0 003.01	8/27/2013	5534 S. New Hope Rd	Lyle	Failure	Fellwock	8/29/2013	9/4/2013		
128-00-0 108.00	8/12/2013	7719 Sawyer Brown Road	Zebari	Failure	Fellwock	8/14/2013	9/5/2013		
029-00-0 011.00	9/25/2013	4131 Knipfer Rd	Arrington	Failure	Fellwock	9/26/2013	9/27/2013		
017-00-0 288.00	10/10/2013	1388 Union Hill Road	Hale	Failure	Fellwock	10/21/2013	10/22/2013		
126-00-0 014.00	10/28/2013	8936 Hwy 70	Mitchell	Failure	Fellwock	10/29/2013	10/31/2013		
077-00-0 015.00	10/29/2013	8368 Cub Creek Road	Demoss	Failure	Fellwock	11/12/2013	11/13/2013		
024-00-0 028.00	11/18/2013	2003 Shaw Road	Sheppard	Failure	Fellwock	11/19/2013	11/20/2013		
068-00-0 070.00	10/30/2013	3719 Amy Lynn Drive	Allied Prop	Failure	Fellwock	10/31/2013	12/2/2013	12/2/2013	1/8/2014
031-00-0 034.00	12/20/2013	4690 Lickton Pike	Dunn	Failure	Fellwock	12/20/2013	12/23/2013	1/9/2014	2/19/2014
076-01-0 003.00	2/14/2014	527 Tulip Grove Road	McClintock	Failure	Fellwock	2/19/2014	2/21/2014		
011-00-0 165.00	2/20/2014	3044 Greer Road	Spurlin	Failure	Fellwock	2/21/2014	3/17/2014		
056-00-0 026.00	3/25/2014	4327 Pecan Valley Road	Ward	Failure	Fellwock	4/2/2014	4/3/2014		
038-00-0 037.00	4/8/2014	5892 Old Hickory Boulevard	Dugger	Failure	Fellwock	4/10/2014	4/11/2014		
017-00-0 029.00	3/26/2014	5930 Lickton Pike	Bolton	Failure	Fellwock	4/14/2014	4/15/2014		
034-04-0 030.00	4/1/2014	352 Cumberland Hills Drive	Sturdivant	Failure	Fellwock	4/15/2014	4/16/2014		
029-00-0 034.00	4/18/2014	4442 Gray's Point Road	McKenzie	Failure	Fellwock	4/21/2014	4/22/2014		
148-00-0 207.00	4/16/2014	855 Reeves Road	Reyes	Failure	Fellwock	4/21/2014	4/22/2014	5/13/2014	6/18/2014
059-00-0 098.00	5/9/2014	520 Ewing Drive	Webb	Failure	Fellwock	5/13/2014	5/14/2014		
009-00-0 010.00	12/6/2013	8131 Jackman Lane	Valden's Pudd	Failure	Fellwock	12/16/2013	5/29/2014		
047-00-0 048.00	5/13/2014	4539 Sulpher Creek Road	Dobson	Failure	Fellwock	5/15/2014	6/13/2014		

Table 7H.5 – MWS Estimated/Reported Sewage Overflows in FY14

	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
Wet Weather Overflows - CSO Permitted	32	20	14	3	6	18	6	13	5	12	2	12	143
Wet Weather Overflows - sewer (non pumps)	15	32	3	0	1	24	6	29	9	22	1	6	148
Wet Weather Overflows - Pump Stations	14	28	2	0	0	24	5	27	18	24	1	1	144
Wet Weather Overflows SSO- TOTAL	29	60	5	0	1	48	11	56	27	46	2	7	292
Dry Weather Overflows - sewer (non-pumps)	0	4	6	12	10	7	13	10	18	5	10	4	99
Dry Weather Overflows - Pump Stations	0	1	1	0	1	1	0	0	1	1	1	0	7
Dry Weather Overflows - TOTAL	0	5	7	12	11	8	13	10	19	6	11	4	106
# of Overflows that Required Remediation*	0	0	0	0	0	0	0	0	0	0	0	0	0
# of Overflows that Reached Creeks - Sewer	14	26	3	3	4	15	12	25	13	13	5	4	137
# of Overflows that Reached Creeks - Pump Stations (All)	14	29	2	0	0	25	5	27	19	25	2	0	148
# 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, but the term “Remediation” is reserved for large overflows/line breaks in which more significant clean-up actions are required that may include hiring outside contractors.

Table 8F.1 - MWS Stormwater Routine Maintenance Work Order Numbers for FY14

		Total	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013	FY2014
Ditch Maint.	Routine	739	137	352	84	66	14	3	83	0	0	0	30	34	13
	Complaint	3337	0	203	557	374	403	445	474	396	485	466	426	265	158
	Class C	58	0	0	1	39	18	0	0	0	0	0	0	0	0
subtotal		***4,134***	***137***	***555***	***642***	***479***	***435***	***448***	***557***	***396***	***485***	***466***	***456***	***299***	***171***
Walls & HW	Routine	140	22	75	17	11	1	0	14	0	0	0	7	4	8
	Complaint	908	0	45	211	161	183	187	55	32	34	31	18	17	23
	Class C	1	0	0	0	0	1	0	0	0	0	0	0	0	0
subtotal		***1,049***	***22***	***120***	***228***	***172***	***185***	***187***	***69***	***32***	***34***	***31***	***25***	***21***	***31***
DW Pipes	Routine	1286	151	115	106	48	5	816	45	0	0	0	29	31	12
	Complaint	1438	0	139	249	279	286	165	94	89	137	163	171	163	110
	Class C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
subtotal		***2,724***	***151***	***254***	***355***	***327***	***291***	***981***	***139***	***89***	***137***	***163***	***200***	***194***	***122***
Cross Drains	Routine	613	85	118	74	78	66	0	192	0	0	0	18	33	15
	Complaint	849	0	80	135	114	171	148	61	62	78	97	71	73	70
	Class C	18	0	0	0	10	8	0	0	0	0	0	0	0	0
subtotal		***1,480***	***85***	***198***	***209***	***202***	***245***	***148***	***253***	***62***	***78***	***97***	***89***	***106***	***85***
Flooding	Routine	77	14	45	4	10	4	0	0	0	0	0	21	104	102
	Complaint	289	0	2	14	15	1	0	19	58	180	42	4	2	5
	Class C	4	0	0	0	2	2	0	0	0	0	0	0	0	0
subtotal		***370***	***14***	***47***	***18***	***27***	***7***	***0***	***19***	***58***	***180***	***42***	***25***	***106***	***107***
	Routine	233	39	59	26	26	23	0	60	0	0	9	32	58	52
Debris Removal	Complaint	523	0	44	29	28	41	1	80	186	114	167	69	29	216
	Class C	2	0	0	1	1	0	0	0	0	0	0	0	0	0
subtotal		***758***	***39***	***103***	***56***	***55***	***64***	***1***	***140***	***186***	***114***	***176***	***101***	***87***	***268***
Erosion	Routine	6	0	1	2	1	1	0	1	0	0	0	9	3	12
	Complaint	62	0	0	7	6	1	0	10	20	18	49	28	18	30
	Class C	1	0	0	0	1	0	0	0	0	0	0	0	0	0
subtotal		***69***	***0***	***1***	***9***	***8***	***2***	***0***	***11***	***20***	***18***	***49***	***37***	***21***	***42***
Mud Removal	Routine	76	4	3	8	7	51	3	0	0	0	0	0	0	0
	Complaint	227	0	0	3	8	71	144	0	1	0	0	1	0	0
	Class C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
subtotal		***303***	***4***	***3***	***11***	***15***	***122***	***147***	***0***	***1***	***0***	***0***	***1***	***0***	***0***
Misc	Routine	2744	35	420	590	396	219	1,013	71	0	0	2	120	172	7
	Complaint	1473	0	94	95	75	86	1,035	15	39	34	27	15	3	119
	Class C	4	0	0	0	3	1	0	0	0	0	0	0	0	0
subtotal		***4,221***	***35***	***514***	***685***	***474***	***306***	***2048***	***86***	***39***	***34***	***29***	***135***	***175***	***126***
Inlet Maint.	Routine	138750	177	7,278	33,495	37,296	35,258	20,125	4,841	140	140	108	312	378	357
	Complaint	6903	0	260	416	353	263	3,088	243	1,880	400	561	231	218	216
	Class C	5	0	0	0	5	0	0	0	0	0	0	0	0	0
subtotal		***145,658***	***177***	***7,538***	***33,911***	***37,654***	***35,521***	***23,213***	***5,084***	***2,020***	***540***	***669***	***543***	***596***	***573***
Sinkhole	Routine	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Complaint	5	0	0	0	0	2	3	0	0	0	0	0	4	0
	Class C	0	0	0	0	0	0	0	0	0	0	0	0	0	0
subtotal		***5***	***0***	***0***	***0***	***0***	***2***	***3***	***0***	***0***	***0***	***0***	***0***	***4***	***0***
		Total	**FY2002**	**FY2003**	**FY2004**	**FY2005**	**FY2006**	**FY2007**	**FY2008**	**FY2009**	**FY2010**	**FY2011**	**FY2012**	**FY2013**	**FY2014**
	Routine	146,178	664	8,466	34,406	37,939	35,642	21,960	5,307	140	140	119	578	817	578
	Complaint	19,443	0	867	1,716	1,413	1,508	5,216	1,051	2,763	1,480	1,603	1,034	792	947
	Class C	93	0	0	2	61	30	0	0	0	0	0	0	0	0
TOTAL		***165,714***	**664**	**9,333**	**36,124**	**39,413**	**37,180**	**27,176**	**6,358**	**2,903**	**1,620**	**1,722**	**1,612**	**1,609**	**1,525**

*Note- Inlet Maintenance numbers reflect a July 2008 change in the way work units are reported. Inlet reporting is now done at the work order level and not the work unit level. This does not reflect any change in the level of effort for this category of work.Routine Maintenance field activities were significantly reduced from September 17th through September 29th, 2008 due to the fuel conservation initiative.

Work Order Labor Hours per Type

Fiscal Year	Total	Preventive	Rain Routes	County Hospital	Reactive
FY2010	54,713	4,262	3,080	N/A	47,371
FY2011	52,406	7,615	3,188	1,863	39,740
FY2012	51,316	6,669	3,798	1,377	39,472
FY2013	43,056	7,380	2,448	1,423	31,805
FY2014	37,015	3,716	2,536	600	30,164
Total to date	***238,506***	**29,642**	**15,050**	**5,263**	**188,552**

Estimated Amount of Material (Sediment, Gravel, etc.) Removed From the System

Fiscal Year	Linear Feet of Redefined Ditch	Cubic Yards of Material Removed	Inlet Maintenance Work Orders	Estimated Pounds Removed from Inlet Maintenance *(Based on an average of 3 inlets cleaned per Work Order with each inlet containing approximately 9 pounds of material)*
*FY2010	99,460	N/A	540	14,580
*FY2011	77,795	1,248	669	18,063
*FY2012	84,280	1,649	543	14,661
*FY2013	34,500	2,556	596	16,092
FY2014	48,285	123,946	573	15,471
Total to date	**344,320**	**129,399**	**2,921**	**78,867**

N/A indicates insufficient data
* Material removed is shown as number of loads instead of total cubic yards

Table 8F.2 - MWS Stormwater Contracted Street Sweeping Collection Numbers for FY14

	July	August	September	October	November	December	January	February	March	April	May	June	Total
Debris Collected *(tons)*	322.17	336.29	348.41	433.65	569.65	614.64	398.30	302.29	378.54	376.52	292.88	336.59	4,709.93
Miles of Street Swept	1,740.69	1,787.20	1,835.34	1,534.92	1,136.77	1,900.49	2,487.59	1,849.74	1,720.66	1,796.26	1,777.54	1,921.25	21,488.45

Table 9F.1 - Development and Review Section Plan Review Numbers for FY14

	July	August	September	October	November	December	January	February	March	April	May	June	Total
Number of Plan Submittals	120	135	162	131	115	171	165	130	158	174	181	171	**1813**
Number of Plan Approvals	101	83	118	90	106	116	125	100	120	127	154	120	**1360**
Number of Projects Submitted Using Low Impact Development Techniques	5	1	5	3	6	4	8	1	6	9	14	8	**70**

* The Number of Plan Submittals line includes: Excel spreadsheet tracked "Site Plan Reviews" that are reviewed for Codes permits and KIVA tracked Grading Plans & As-Builts as well as Preliminaries / Finals that are reviewed for the Planning Department. It is all initial submittals, resubmittals and additional information submitted. The excel spreadsheet is called "MonthlyReport_SWEngr(year).xls" and it can be found in the following location, "S:\DevReview\Codes Section\Monthly Reports\SWEngr". The new KIVA report is called "SW_ANNUAL" described as "SW PERMIT ANNUAL REPORTING". The numbers exclude SWUF reviews because they are not plan reviews.

* The Number of Plan Approvals line include Grading Plans review results of APPROVED, CONDITIONALLY APPROVED (Approved Except as Noted) and NO PERMIT Required. The number also includes Preliminaries / Finals that are reviewed for the Planning Department if the result code is APPROVED, COND, IGNORENA. The numbers in this row also now include SWEngr's site plan reviews with a result of Approved because the review result is now tracked separately. The numbers in this row exclude Grading Plans Approved numbers with review results of Returned for Corrections, Withdrawn, Hold or Denied. The numbers in this row also exclude SWUF reviews because they are not plan reviews. The new KIVA report is called "SW_ANNUAL" described as "SW PERMIT ANNUAL REPORTING" and it pulls all Grading Permit and Preliminary/Final reviews for this line with the proper result code within a given time frame. The excel spreadsheet for site plan reviews is called "MonthlyReport_SWEngr(year).xls" (or some variation of that format) and it can be found in the following location, "S:\DevReview\Codes Section\Monthly Reports\SWEngr". It shows which reviews had a result of Approved in a given month.

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

Facility Name	SARA Title III, Section 313/TSD	TMSP	RMCP	Substantial Loader
A. Schulman, Inc.	X	X		
Afl Wire Products Dixie Wire	X			
Akzo Nobel Coatings Inc.	X	X		
Ashland Distribution	X	X		
Bp Oil Company/Nashville Terminal	X	X		
Cmc Rebar Nashville	X			
Cone Solvents Inc Nashville	X			
Country Delite Farms Llc	X			
Cumberland Terminals, Inc.	X	X		
Doodleco Inc. (Dba Superior Trim)	X			
E. I. Dupont De Nemours & Co., Inc. - Old Hickory	X	X		
Ergon Terminaling, Inc. - Nashville	X	X		
Exxon Mobil Corp Nashville Terminal	X	X		
Fiberweb, Inc.	X	X		
Five Star Foods	X			
Greer Stop Nut	X	X		
Harcros Chemicals Inc	X			
Hennessey Industries	X			
Innophos, Inc.	X	X		
Land O'lakes Purina Feed Llc - Nashville Tn	X			
Lawson Ready Mix	X		X	
Marathon Petroleum Company Llc	X	X		
Marathon Petroleum Company Llc	X	X		
Marathon Petroleum Company, Llc - Bordeaux Terminal	X	X		
Motiva Nashville Terminal	X			
Nashville - Plant 1	X			
Nashville Chemical & Equipment Co Inc	X			
Nashville Wire Products	X			
North American Galvanizing Co.	X	X		
Palm International Sales	X			
Perfection Molders	X			
Peterbilt Motors Company	X	X		
Polar Technology Llc	X			
Purity Dairies	X	X		
Quad Graphics Nashville	X			
Quebecor World Retail Group	X			
Reddy Ice-Nashville	X			
Safety-Kleen Systems, Inc.	X	X		
Springs Global Us-Nashville Plant	X	X		
Superior Trim	X			
U S Smokeless Tobacco Manufacturing Co	X			
Vought Aircraft Industries Inc	X			
Warren Paint & Color Co	X	X		

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

Facility Name	SARA Title III, Section 313/TSD	TMSP	RMCP	Substantial Loader
Whirlpool Corp	X			
Worldcolor Retail Group	X			
Zeledyne Llc-Nashville Glass Plant (Carlex)	X			
Psc Metals, Inc.		X		X
3m Old Hickory		X		
Aaa Industries Inc.		X		
Abernathy Truck Salvage, Inc.		X		
Abf Freight System, Inc. - Nashville		X		
Advanced Composites (Tn)		X		
All Star Recycling				
All State Auto Parts, Inc.		X		
Allied Systems Ltd - Nashville		X		
Allied Waste		X		
American Airlines Fuel Storage Facility At BNA				
American Appliance Products - Madison		X		
Antioch Travel Center				
Assoiated Wholesale Grocers		X		
Ati Metal Working Products		X		
Automotive Components Holdings, Llc Nashville Property				
Bellar Auto Parts, Inc.		X		
Besway Systems Inc		X		
BFI Of Nashville		X		
Birmingham-Nashville Express		X		
Bne Properties, Inc.		X		
Central Pike Class Iv Landfill		X		
Cherokee Marine Terminal		X		
Circle Delivery Service, Inc.		X		
Clopay Advanced Printing		X		
Clopay Plastics Products		X		
Coca-Cola Bottling Co. Of Nashville		X		
Csx Intermodal, Inc - Nashville Terminal		X		
Cumberland Heights Rehabilitation Center				
Cummings Signs Arch. And Banking Div.		X		
D & R Motors & Recycling		X		
Dicaperl Minerals Corp. (Chemrock)		X		
Dixie Wire		X		
Dry Creek Wastewater Treatment Plant		X		
Earthgrains Banking Co., Inc (Sara Lee Bakery)		X		
Embraer Aircraft Maintenance Services, Inc.		X		
Essex Plastics Midwest, Llc D.B.A. Flexol Packaging Corp.		X		
Fed Ex Ground - Nashville Knight Rd		X		
Federal Express - Bnaa		X		
First Response, Inc.		X		
Firstexpress Inc.		X		
Flex Sol Packaging Corp.		X		

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

Facility Name	SARA Title III, Section 313/TSD	TMSP	RMCP	Substantial Loader
Four Lane Auto Salvage Inc.		X		
Ftec, Inc. (Palfleet Truck)		X		
Gaf Materials Corp.		X		
Green Tree Processing		X		
Grooms Engines		X		
Hailey's Harbor, Inc.		X		
Hamilton Machine Co Inc		X		
Harpeth Valley Utiility District				
Hilltop Auto Salvage		X		
Hma Contractors Asphalt Plant #1		X		
Howard Baer, Inc.		X		
Imi Ready Mix - Cowan Street			X	
Imi Ready Mix- Robertson Road			X	
Ingram Materials Sand Yard		X		
J.Percy Priest Hydro Power Plant				
John Bouchard & Sons Co		X		
John C. Tune Airport		X		
John W. Mcdougall Co., Inc.		X		
Jones Brothers, Llc		X		
Kohl & Madden Plant #1		X		
Laager Investment		X		
Lee Brick And Block		X		
Lion Oil Company - Nashville		X		
Lojac Danley Plant		X		
Lojac Downtown Plant		X		
Lojac Hermitage Asphalt Plant		X		
Lojac Nashville River Road Plant		X		
Lone Star Industries, Inc. D/B/A Buzzi Unicem USA - Nashville		X		
Love's Travel Stops & Country Stores No. 429				
M & W Transportation Co., Inc.		X		
Magellan Nashville I Terminal		X		
Magellan Terminals Holdings Lp		X		
Metal Management Nashville, Llc		X		
Metro Nashville Airport Authority				
Metro Nashville District Energy System		X		
Metro Ready Mix - Basswood Drive			X	
Metro Ready Mix Concrete			X	
Metro Ready Mix Concrete, 2nd Ave			X	
Metro Ready Mix Concrete, Inc. - Visco Drive			X	
Metro Salvage, Inc.		X		
Mid-South Wire		X		
Milan Express Co., Inc. - Nashville		X		
N & S Inc.		X		

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

Facility Name	SARA Title III, Section 313/TSD	TMSP	RMCP	Substantial Loader
Nashville Central Stp		X		
Nashville J.P.Priest Lake Hamilton Creek Recreation Area				
Nashville Machine Company		X		
Nashville Machine Elevator Inc		X		
Nashville Ready Mix - Cowan Ct.		X	X	
Nashville Ready Mix Of West Nashville			X	
Nashville Ready Mix, Inc. Baptist World		X	X	
Nashville Recycling Co		X		
Nashville VMF		X		
Nashville Whites Creek Stp				
Nashville Wilbert Burial Vault Co.		X		
Nashville Wire Products		X		
Nashville Zoo				
Neely's Bend Inc.		X		
Opryland Resort & Entertainment Complex				
Paulo Products Company		X		
Pepsi Bottling Group		X		
Plasticycle		X		
Portland Express, Inc.		X		
Pull-A-Part, Llc		X		
Qrs River Hills Recycling Facility		X		
Quality Plating		X		
Quikrete - Nashville		X		
River Cement Sales Co Dba Buzzi Unicem USA		X		
Rivergate Auto Parts, Inc.		X		
Rogers Group (Whites Creek Asphalt Plant)		X		
Rogers Group, Inc. (Reostone Quarry)		X		
Rogers Manufacturing Company		X		
Rolling Frito-Lay Sales, Lp - Nashville Dc		X		
Sadler Bros Trucking & Leasing Company, Inc.		X		
Schreiber Foods, Inc.		X		
Sequatchie Concrete Service, Inc.		X		
Servitech Industries, Inc.		X		
Sherman-Dixie Concrete Industries, Inc. - Hermitage	X	X		
Sherman-Dixie Concrete Industries, Inc.		X		
Smitty's Auto Parts		X		
Smurfit-Stone Container -- Nashville		X		
Smyrna Ready Mix			X	
Southeastern Freight Lines, Inc.		X		
Southland Brick And Block		X		
Star Transportation		X		
Steel Summit Tennessee		X		
Supreme Oil Central, Inc.		X		
Techno-Aide, Inc.		X		
Tennessee Air National Guard		X		

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

Facility Name	SARA Title III, Section 313/TSD	TMSP	RMCP	Substantial Loader
Tennessee Commercial Warehouse - Nashville		X		
Tennessee Imports Auto Salvage		X		
The Mulch Company		X		
Transflo Terminal Services, Inc. (Nashville)		X		
Trew Industrial Wheels Inc.		X		
Triumph Aerostructures, Llc				
Truck Center, Inc.		X		
Truck Shine		X		
United Parcel Service - Nashville Massman Dr.		X		
United Parcel Service - Nashville Whites Creek Pike		X		
United Parcel Service - Tci		X		
Usa Coe J P Priest-7 Points Day Use Area				
Usa Coe J P Priest-Anderson Road Picnic Area				
Usa Coe Old Hickory Dam				
Usf Holland, Inc.		X		
Vaughn Manufacturing Co		X		
Vf Imagewear, Inc.		X		
Vietti Foods Company, Inc.		X		
Vintage Millworks Inc		X		
Waste Management C&D Recycle Center		X		
Waste Management Of Tennessee-Nashville		X		
Waste Mangement Truck Maintenance Facility/Garbage Transfer St		X		
West Nashvlle Auto Recycling Inc.		X		
Wikoff Color Corporation		X		

Note: While the NPDES Program intends to inspect most if not all of the sites inventoried within the Industrial Monitoring Database, only those sites identified in the SARA Title III, Section 313, Treatment, Storage, and Disposal, or Substantial Loaders are required to be inspected per the MS4 Permit.

In the FY14 TRI search/database update, the Sherman Dixie Central Pike facility was added as a SARA Title III, Sec. 313 and will be inspected in FY15 reporting period

Table 10F.1 - Industrial Sites Inspected during FY14

Facility Name	Inspection Date	Address
PSC Metals, Inc.	07/30/13	710 S 1ST ST
LAND O'LAKES PURINA FEED LLC - NASHVILLE TN	09/27/13	3601 TROUSDALE DR
MOTIVA NASHVILLE TERMINAL	10/10/13	1717 61ST AVE N
Metro Ready Mix Concrete, Inc. - Visco Drive	01/30/14	1020 VISCO DR
WHIRLPOOL CORP	01/31/14	1714 HEIL QUAKER BV
Greer Stop Nut	02/05/14	481 MCNALLY DR
POLAR TECHNOLOGY LLC	02/05/14	1360 FOSTER AVE
Peterbilt Motors Company	02/05/14	430 MYATT DR
Cumberland Terminals, Inc.	02/12/14	7260 CENTENNIAL BV
REDDY ICE-NASHVILLE	02/13/14	7261 CENTENNIAL BV
Airgass USA LLC	02/14/14	7236 Centennial
Bellar Auto Parts, Inc.	02/18/14	670 JAMES AVE
Ashland Distribution (Nexeo Solutions)	03/13/14	2315 CLIFTON AVE
North American Galvanizing Co.	03/18/14	200 32ND AVE N
CONE SOLVENTS INC NASHVILLE (Frontier Logistical Services)	04/01/14	1830 LINDER INDUSTRIAL DR
Warren Paint & Color Co	04/09/14	700 WEDGEWOOD AVE
Quad Graphics Nashville	04/15/14	2947 Brick Church Pike
CMC REBAR NASHVILLE	04/17/14	851 VISCO DR
Superior Trim	04/23/14	511 BRIDGEWAY AVE
Safety-Kleen Systems, Inc.	04/23/14	215 WHITSETT RD
Marathon Terminal (Formerly BP Oil)	04/29/14	1409 51ST AVE N
Palm Commodities International, Inc Sales	04/30/14	1717 J P HENNESSY DR
Hennessy Industries	05/02/14	1601 J P HENNESSY DR
Innophos, Inc.	05/07/14	4600 CENTENNIAL BV
U S SMOKELESS TOBACCO MANUFACTURING CO	05/08/14	800 HARRISON ST
Perfection Molders	05/08/14	213 CONNELL ST
Marathon Petroleum Company LLC	05/16/14	930 YOUNGS LN
Marathon Petroleum Company LLC	05/16/14	5 MAIN ST
Marathon Petroleum Company, LLC - Bordeaux Terminal	05/16/14	2922 HYDES FERRY RD
COUNTRY DELITE FARMS LLC	05/22/14	1401 CHURCH ST
Fiberweb, Inc. (PGI)	05/29/14	70 OLD HICKORY BLVD
E. I. DuPont De Nemours & Co., Inc. - Old Hickory	05/29/14	1002 INDUSTRIAL DR
Carlex NASHVLLE GLASS PLANT (Carlex)	06/10/14	7200 CENTENNIAL BV
Triumph (VOUGHT) AIRCRAFT INDUSTRIES INC (Triumph)	06/16/14	1432 VULTEE BLVD
Lawson Ready Mix	06/19/14	5915 RIVER RD

Table 13A.1 – TMDL Monitoring Data for FY14

Site Name	Samplers	Date	DO (%)	DO (mg/l)	Conductivity (Us)	Temp. (Celcius)	pH	Flow (cfs)	*E. coli* (MPN)	PCR (Hubac)	Suspended Solids (mg/l)
Harpeth 1	SW	7/15/2013	83.6	7.04	410.4	23.9	7.74	439.00	113	0	-
Harpeth 1	SW	7/16/2013	90.5	7.24	417.5	25.6	7.62	372.00	86.2	3.7	-
Harpeth 1	VM/TD	7/17/2013	79.8	6.53	420.7	25.5	0	318.00	86.2	3.3	-
Harpeth 1	VM/TD	7/18/2013	77	6.28	422.2	26.1	7.6	282.00	101.2	4.5	-
Harpeth 1	VM/TD	7/24/2013	80.6	6.69	401.1	25.1	7.66	233.00	122.8	3.3	-
Harpeth 1	VM/TD	8/5/2013	79.9	6.44	461.8	24.3	7.93	114.00	41.1	3.6	-
Harpeth 1	VM/MGB	10/1/2013	81.7	7.25	520	20.8	7.88	63.00	58.3	0.3	-
Harpeth 1	VM/MGB	10/2/2013	79	6.73	451.5	21.9	7.86	58.00	98.7	0.3	-
Harpeth 1	VM/MGB	10/10/2013	83.6	7.71	408.9	18.6	7.57	102.00	68.3	-	-
Harpeth 1	VM/MGB	10/11/2013	84.7	7.83	475	18.5	7.51	86.00	50.4	-	-
Harpeth 1	VM/TD	10/14/2013	84	7.68	471	19.8	7.68	58.00	44.3	-	-
Harpeth 1	VM/MGB	1/9/2014	100.9	13.62	422.1	2.8	7.93	467.00	37.3	-	-
Harpeth 1	VM/MGB	1/21/2014	90.4	10.84	401.3	7.4	7.7	533.00	57.3	0.4	-
Harpeth 1	SW/TD	1/27/2014	122.8	16.00	421.7	4.0	8.17	309.00	25.6	0.7	-
Harpeth 1	SW/TD	1/30/2014	114.9	16.37	-	0.9	8.05	273.00	4.1	-	-
Harpeth 1	SW/TD	1/31/2014	111	15.78	-	1.0	8.21	266.00	88.2	-	-
Harpeth 1	VM/MB	4/1/2014	97.2	9.95	399.8	13.6	8.02	457.00	44.1	-	-
Harpeth 1	VM/MB	4/2/2014	98.4	9.66	391.6	15.4	-	413.00	26.2	-	-
Harpeth 1	VM/MB	4/21/2014	105.7	10.10	403	17.0	8.18	354.00	73.8	-	-
Harpeth 1	VM/MB	4/22/2014	92.2	8.55	413	17.9	8.06	328.00	70.8	-	-
Harpeth 1	VM/MB	4/23/2014	91.1	8.65	402.5	17.1	8.03	324.00	45.7	-	-
Harpeth 2	SW	7/15/2013	79	6.64	427.8	23.9	7.76	0.00	155.2	-	-
Harpeth 2	SW	7/16/2013	85.6	7.00	432.3	25.5	7.52	361.84	63.3	-	-
Harpeth 2	VM/TD	7/17/2013	72.2	5.81	429.7	25.6	7.56	278.41	135.4	3.2	-
Harpeth 2	VM/TD	7/18/2013	72	5.70	431.2	26.5	7.67	266.58	95.9	4.3	-
Harpeth 2	VM/TD	7/24/2013	72.5	5.87	419.4	25.5	7.75	303.40	96	3.6	-
Harpeth 2	VM/TD	8/5/2013	76.4	6.32	440.6	24.5	7.82	149.07	41	3.8	-
Harpeth 2	VM/MGB	10/1/2013	81	7.20	477	20.5	7.7	133.72	47.9	0.4	-
Harpeth 2	VM/MGB	10/2/2013	78.4	6.80	499	21.7	7.63	27.14	38.9	0.3	-
Harpeth 2	VM/MGB	10/10/2013	81.1	7.56	430.5	18.3	7.24	87.54	139	-	-
Harpeth 2	VM/MGB	10/11/2013	80.8	7.46	418.6	18.3	7.2	76.74	27.2	-	-
Harpeth 2	VM/TD	10/14/2013	83	7.59	472	19.3	7.24	14.02	27.2	-	-
Harpeth 2	VM/MGB	1/9/2014	99.4	13.51	434.4	2.6	8.12	300.82	37.3	1	-
Harpeth 2	VM/MGB	1/21/2014	98.5	10.75	415.4	7.0	7.7	310.53	38.4	0.5	-
Harpeth 2	SW/TD	1/27/2014	122.4	16.11	429.6	3.8	8.28	177.22	14.6	-	2
Harpeth 2	SW/TD	1/30/2014	109.1	17.49	-	1.0	8.04	141.29	0	-	-
Harpeth 2	SW/TD	1/31/2014	108	15.19	-	0.7	8.32	98.26	11	-	2
Harpeth 2	VM/MB	4/1/2014	92.3	9.55	397.5	13.3	7.58	440.72	68.9	-	1
Harpeth 2	VM/MB	4/2/2014	90.1	8.89	369.2	15.3	-	277.09	25.3	-	-
Harpeth 2	VM/MB	4/21/2014	102.8	9.75	400.6	17.2	7.91	392.71	47.1	-	1
Harpeth 2	VM/MB	4/22/2014	92.1	8.49	410.1	18.3	7.98	415.30	61.6	-	1
Harpeth 2	VM/MB	4/23/2014	88.3	8.34	416.5	17.4	7.6	336.10	59.1	-	2
Little Harpeth	SW	7/15/2013	97.2	8.49	523	22.5	7.63	0.00	344.8	-	35
Little Harpeth	SW	7/16/2013	104.9	8.87	524	24.3	7.98	186.88	238.2	4.1	24
Little Harpeth	VM/TD	7/17/2013	99.8	8.54	534	23.2	0	53.16	238.2	5.1	27
Little Harpeth	VM/TD	7/18/2013	89.2	7.53	526	23.7	7.86	50.17	648.8	4.1	21
Little Harpeth	VM/TD	7/24/2013	101.8	8.69	503	23.2	7.88	41.88	403.4	3	27
Little Harpeth	VM/TD	8/5/2013	97.3	8.36	537	22.8	8.18	26.42	209.8	4.1	13
Little Harpeth	VM/MGB	10/1/2013	96.3	8.78	502	19.1	8.06	10.59	201.4	-	5
Little Harpeth	VM/MGB	10/2/2013	90.7	8.06	591	20.8	8.01	5.44	218.7	-	5
Little Harpeth	VM/MGB	10/10/2013	101.1	9.59	551	17.2	7.82	20.81	236.7	-	5
Little Harpeth	VM/MGB	10/11/2013	97.3	9.30	526	16.8	7.88	22.03	151.5	-	5
Little Harpeth	VM/TD	10/14/2013	98.8	9.20	502	18.2	7.88	8.60	143.9	-	9
Little Harpeth	VM/MGB	1/9/2014	109.1	13.87	528	5.2	7.93	46.14	59.8	-	6
Little Harpeth	VM/MGB	1/21/2014	90.8	10.73	501	8.1	7.59	54.91	66.3	1.1	46
Little Harpeth	SW/TD	1/27/2014	133.8	16.90	505	5.3	7.74	29.06	76.3	-	59
Little Harpeth	SW/TD	1/30/2014	125	17.93	-	0.5	8.11	24.28	10.9	-	153
Little Harpeth	SW/TD	1/31/2014	115.3	16.20	-	1.6	8.25	0.00	38.8	-	61

Table 13A.1 – TMDL Monitoring Data for FY14 (Continued)

Site Name	Samplers	Date	DO (%)	DO (mg/l)	Conductivity (Us)	Temp. (Celcius)	pH	Flow (cfs)	*E. coli* (MPN)	PCR (Hubac)	Suspended Solids (mg/l)
Little Harpeth	VM/MB	4/1/2014	109.8	11.25	484	13.5	8.15	141.39	80.9	-	21
Little Harpeth	VM/MB	4/2/2014	109.3	10.97	486	14.5	0	84.48	62.4	-	5
Little Harpeth	VM/MB	4/21/2014	115.7	11.32	486	15.7	8.21	60.78	107.6	-	-
Little Harpeth	VM/MB	4/22/2014	91.7	8.64	460	17.1	7.71	36.65	123.6	-	-
Little Harpeth	VM/MB	4/23/2014	117	11.53	495	15.6	8.23	83.56	85.7	-	-
McCrory 1	VM/TD	8/16/2013	75.6	6.93	696	19.6	7.66	9.21	579.4	-	-
McCrory 1	VM/TD	8/20/2013	66.3	5.78	746	21.1	7.52	6.24	387.3	1.1	-
McCrory 1	VM/MGB	8/26/2013	70	6.22	713	20.7	7.36	1.80	547.5	-	-
McCrory 1	VM/MGB	8/27/2013	67.4	6.04	735	20.5	7.34	2.81	461.1	1.2	-
McCrory 1	TD/SW	10/1/2013	62	5.76	776	18.8	7.19	0.00	307.6	-	-
McCrory 1	TD/SW	10/2/2013	70.5	6.23	803	20.2	7.4	0.00	1299.7	0.4	-
McCrory 1	VM/MGB	10/10/2013	69.7	6.74	681	17.3	7.66	0.39	121.1	-	-
McCrory 1	VM/MGB	10/11/2013	65.5	6.30	713	16.9	7.8	0.00	193.5	-	-
McCrory 1	SW/ATN	10/14/2013	51.2	4.34	773	18.1	7.7	0.00	238.2	-	-
McCrory 1	VM/MGB	1/9/2014	101.3	12.45	662	6.5	7.62	16.03	107.6	-	-
McCrory 1	VM/MGB	1/21/2014	109.3	13.54	569	5.9	7.8	12.56	69.7	-	-
McCrory 1	VM/MGB	1/27/2014	109.3	13.54	569	5.9	7.8	12.56	44.1	1.9	-
McCrory 1	SW/TD	1/30/2014	104.9	14.76	659	1.2	8.07	0.00	20.3	-	-
McCrory 1	VM/MGB	1/31/2014	112.7	15.02	883	3.0	7.98	3.59	29.5	-	-
McCrory 1	TD/SW	4/1/2014	139	13.15	595	19.0	8.35	10.93	23.1	2.6	-
McCrory 1	TD/SW	4/2/2014	97	9.93	619	14.3	7.95	16.38	125.9	0.2	-
McCrory 1	TD/SW	4/21/2014	88.8	8.76	629	15.6	7.97	10.76	160.7	-	-
McCrory 1	TD/SW	4/22/2014	76.3	7.55	640	16.4	7.79	12.78	142.1	-	-
McCrory 1	TD/SW	4/23/2014	92.7	9.43	647	14.4	7.93	12.18	218.7	-	-
McCrory 2	VM/TD	8/16/2013	84.6	7.71	866	19.8	7.57	4.33	167	-	2
McCrory 2	VM/TD	8/19/2013	80.4	7.27	888	20.5	7.63	3.42	178.2	1.3	2
McCrory 2	VM/TD	8/20/2013	75.4	6.67	904	21.6	7.58	7.74	113.7	0.4	1
McCrory 2	VM/MGB	8/26/2013	80.4	7.13	890	21.2	7.58	5.71	186	-	1
McCrory 2	VM/MGB	8/27/2013	76.7	6.57	925	21.0	7.38	2.86	290.9	2.6	1
McCrory 2	TD/SW	10/1/2013	77	7.14	880	18.9	7.47	0.00	1553.1	-	2
McCrory 2	TD/SW	10/2/2013	78.5	7.04	881	20.3	7.49	0.00	1413.6	-	1
McCrory 2	VM/MGB	10/10/2013	84.6	8.04	763	17.6	7.83	0.98	1046.2	-	-
McCrory 2	VM/MGB	10/11/2013	81.9	7.53	807	15.8	7.87	0.00	172.5	1.3	1
McCrory 2	SW/ATN	10/14/2013	82.8	7.89	867	17.6	7.94	0.00	156.5	-	225
McCrory 2	VM/MGB	1/9/2014	106.8	13.37	649	5.7	7.62	3.24	78	1.1	132
McCrory 2	VM/MGB	1/21/2014	114.3	14.49	705	5.0	8.05	4.55	41	2.6	9
McCrory 2	VM/MGB	1/27/2014	114.3	14.49	705	5.0	8.05	4.55	66.3	2.4	9
McCrory 2	SW/TD	1/30/2014	104.9	15.08	809	0.4	8.25	0.00	23.8	-	103
McCrory 2	VM/MGB	1/31/2014	105.6	13.78	685	3.7	7.75	7.89	101.2	-	74
McCrory 2	TD/SW	4/1/2014	142.1	14.05	579	16.0	8.36	7.96	80.1	-	-
McCrory 2	TD/SW	4/2/2014	102.5	10.70	677	13.5	7.95	9.34	35.9	-	-
McCrory 2	TD/SW	4/21/2014	91.7	9.52	683	15.0	8.05	4.37	33.6	-	-
McCrory 2	TD/SW	4/22/2014	80.9	8.00	703	16.3	7.87	3.59	44.1	-	-
McCrory 2	TD/SW	4/23/2014	94.4	9.64	714	13.9	8	5.80	28.8	-	-
McCrory1	VM/TD	8/19/2013	76.4	6.86	729	20.3	7.53	9.46	325.5	0.8	-
Stoners	VM/TD	8/16/2013	98.2	8.80	626	20.8	7.8	52.74	228.2	0.3	-
Stoners	VM/TD	8/19/2013	84.5	7.59	688	20.7	7.49	29.27	435.2	0.6	-
Stoners	VM/TD	8/20/2013	82.5	7.29	740	21.2	7.66	48.73	209.8	0.5	-
Stoners	VM/MGB	8/26/2013	90.9	8.07	889	21.0	7.85	32.98	290.9	-	-
Stoners	VM/MGB	8/27/2013	85.4	7.05	674	20.6	7.47	6.23	613.1	0.7	-
Stoners	TD/SW	10/1/2013	78	7.18	908	19.2	7.64	0.00	290.9	0.2	-
Stoners	TD/SW	10/2/2013	71.9	6.60	907	19.6	7.38	16.61	307.6	0.5	-
Stoners	VM/MGB	10/10/2013	86	8.21	792	18.0	7.59	7.84	209.8	-	-
Stoners	VM/MGB	10/11/2013	80.1	7.53	843	17.4	7.45	0.00	209.8	-	-
Stoners	SW/ATN	10/14/2013	82.4	7.71	983	18.4	7.55	14.02	275.5	-	-
Stoners	VM/MGB	1/9/2014	97.6	12.32	302.2	5.3	8.07	24.98	2419.6	9	-
Stoners	VM/MGB	1/21/2014	98.2	11.82	652	7.1	7.65	24.79	2419	10.7	-
Stoners	VM/MGB	1/27/2014	98.2	11.82	652	7.1	7.65	24.79	2419.6	22.1	-
Stoners	VM/MGB	1/31/2014	107.2	13.66	628	4.7	8.06	21.56	2419.6	-	-

Table 13A.1 – TMDL Monitoring Data for FY14 (Continued)

Site Name	Samplers	Date	DO (%)	DO (mg/l)	Conductivity (Us)	Temp. (Celcius)	pH	Flow (cfs)	*E. coli* (MPN)	PCR (Hubac)	Suspended Solids (mg/l)
Stoners	TD/SW	4/1/2014	114.7	11.36	628	15.7	8.08	25.59	29.5	-	-
Stoners	TD/SW	4/2/2014	85.6	8.62	654	14.9	7.66	48.32	79.4	0.2	-
Stoners	TD/SW	4/21/2014	86.6	8.62	646	15.8	7.91	42.71	127.4	-	-
Stoners	TD/SW	4/22/2014	79.1	7.62	634	16.8	7.82	15.71	70.8	-	-
Stoners	TD/SW	4/23/2014	92.5	9.22	589	15.1	7.9	24.33	178.5	-	-
Stones 1	VM/TD	8/16/2013	70.5	5.84	265.7	23.9	7.15	*	22.8	0.5	-
Stones 1	VM/TD	8/19/2013	56.4	4.65	259.5	24.4	7.47	*	27.2	0.9	-
Stones 1	VM/TD	8/20/2013	71.6	6.02	261.7	-	7.31	*	11	2	-
Stones 1	VM/MGB	8/26/2013	75.1	6.26	270.3	23.9	7.93	*	10.7	-	-
Stones 1	VM/MGB	8/27/2013	77.8	6.53	274.7	23.5	8.26	*	5.2	0.4	-
Stones 1	TD/SW	10/1/2013	72.5	6.30	237.6	22.5	7.52	*	2419.6	0.3	-
Stones 1	TD/SW	10/2/2013	72.3	6.31	239.3	22.9	7.37	*	21.3	9.184	-
Stones 1	VM/MGB	10/10/2013	80.1	6.99	249.4	21.7	7.93	*	283.6	-	-
Stones 1	VM/MGB	10/11/2013	85.8	7.48	246.7	21.3	7.94	*	7.4	-	12
Stones 1	SW/ATN	10/14/2013	68.2	6.37	266.6	21.4	7.98	*	13.2	-	15
Stones 1	VM/MGB	1/21/2014	104.2	13.60	346.1	3.9	7.64	*	7.5	2	8
Stones 1	VM/MGB	1/27/2014	104.2	13.60	346.1	3.9	7.64	*	1	-	-
Stones 1	SW/TD	1/30/2014	95.9	12.82	336.6	2.9	7.84	*	0	-	-
Stones 1	VM/MGB	1/31/2014	108.3	14.36	336.9	3.2	6.91	*	2	-	-
Stones 1	TD/SW	4/1/2014	117.6	12.13	326	13.7	8.26	*	0	-	-
Stones 1	TD/SW	4/2/2014	110.1	11.95	322.9	11.5	8.42	*	1	-	-
Stones 1	TD/SW	4/21/2014	77.8	8.29	322.5	11.9	7.78	*	2	-	-
Stones 1	TD/SW	4/22/2014	75.2	8.04	324.3	11.8	7.65	*	1	-	-
Stones 1	TD/SW	4/23/2014	94.7	9.87	313	13.3	8.03	*	6.3	-	-
Stones 2	VM/TD	8/16/2013	67.8	5.78	339.9	23.0	7.36	147.00	116.9	1.3	-
Stones 2	VM/TD	8/19/2013	67.2	5.78	355.7	23.8	7.34	107.00	104.6	2.7	-
Stones 2	VM/TD	8/20/2013	49.7	4.42	347.6	23.7	7.36	419.00	47.5	2	-
Stones 2	VM/MGB	8/26/2013	71	5.93	343.1	24.0	7.69	133.00	38.6	-	-
Stones 2	VM/MGB	8/27/2013	68	5.79	363.8	23.6	7.75	161.00	35	0.9	-
Stones 2	TD/SW	10/1/2013	56.2	4.90	316.3	21.5	7.42	159.00	47.3	-	-
Stones 2	TD/SW	10/2/2013	55.5	4.82	303.1	22.4	7.26	166.00	41.7	0.2	-
Stones 2	VM/MGB	10/10/2013	63.2	5.74	376.5	20.2	7.95	151.00	77.2	-	-
Stones 2	VM/MGB	10/11/2013	63.2	5.75	360.9	19.7	7.9	166.00	59.4	-	-
Stones 2	SW/ATN	10/14/2013	52.3	4.25	386.6	20.5	7.85	152.00	35	-	1
Stones 2	VM/MGB	1/9/2014	97.1	12.31	306.4	5.2	7.88	1010.00	2	-	2
Stones 2	VM/MGB	1/21/2014	94.5	11.82	490	5.5	7.79	3130.00	4.1	-	3
Stones 2	VM/MGB	1/27/2014	94.5	11.82	490	5.5	7.79	1070.00	2419.6	31.8	2
Stones 2	SW/TD	1/30/2014	98.5	13.33	341.2	2.6	7.89	206.00	5.1	-	6
Stones 2	VM/MGB	1/31/2014	108.1	14.46	345.8	2.9	8.25	51.00	2419.9	-	3
Stones 2	TD/SW	4/1/2014	86.8	8.45	497	16.1	7.83	221.00	24.1	-	3
Stones 2	TD/SW	4/2/2014	83.1	8.60	441.5	13.3	8.05		28.5	-	6
Stones 2	TD/SW	4/21/2014	92.1	9.81	442.7	15.6	7.87	165.00	98.8	-	-
Stones 2	TD/SW	4/22/2014	80.1	8.09	393.1	14.3	7.7	35.00	61.6	-	-
Stones 2	TD/SW	4/23/2014	79.5	8.34	316.7	12.9	7.9	194.00	16	-	-
Trace Creek	SW	7/15/2013	73.8	6.46	649	22.0	7.37	0.00	172.2	-	-
Trace Creek	SW	7/16/2013	87.8	7.39	658	23.9	7.13	2.73	325.5	-	-
Trace Creek	VM/TD	7/17/2013	60.5	5.30	655	21.8	-	3.11	325.5	3.5	-
Trace Creek	VM/TD	7/18/2013	63.8	5.50	653	22.1	7.13	2.30	435.2	3.7	-
Trace Creek	VM/TD	7/24/2013	83.5	7.31	605	21.8	7.45	2.50	365.4	4.1	-
Trace Creek	VM/TD	8/5/2013	75.6	6.73	638	20.9	7.48	4.88	140.8	4.2	-
Trace Creek	VM/MGB	10/1/2013	75.8	6.85	655	19.6	7.36	4.48	137.4	0.1	-
Trace Creek	VM/MGB	10/2/2013	74.7	6.58	664	20.9	7.33	4.97	104.3	-	-
Trace Creek	VM/MGB	10/10/2013	82.9	7.10	576	18.3	7.33	3.15	616.7	-	-
Trace Creek	VM/MGB	10/11/2013	80.8	7.58	532	17.7	7.17	3.29	167.4	-	-
Trace Creek	VM/TD	10/14/2013	76.9	7.12	627	18.5	7.26	14.47	167.4	-	-
Trace Creek	VM/MGB	1/9/2014	101.9	12.48	496.5	6.6	7.86	6.90	59.4	-	-
Trace Creek	VM/MGB	1/21/2014	85.7	10.33	466	7.3	7.66	7.39	135.4	0.5	33
Trace Creek	SW/TD	1/27/2014	126.7	15.89	503	5.6	8.12	6.44	140.1	-	8
Trace Creek	SW/TD	1/30/2014	109.1	14.03	513	4.7	-	2.95	98.7	-	-
Trace Creek	SW/TD	1/31/2014	97.6	12.58	0	4.5	7.86	2.41	214.3	-	-
Trace Creek	VM/MB	4/1/2014	106.5	10.34	412.8	11.9	8.01	19.03	101.4	-	-
Trace Creek	VM/MB	4/2/2014	102.4	10.81	403	12.2	-	15.61	114.5	1.7	-
Trace Creek	VM/MB	4/21/2014	124.6	12.64	429.5	13.9	8.13	10.66	27.8	-	-
Trace Creek	VM/MB	4/22/2014	82.3	7.90	465	15.4	7.57	3.89	83.6	-	-
Trace Creek	VM/MB	4/23/2014	100.1	10.42	357.3	12.8	7.93	6.58	41	-	-

Table 13A.2 - SWMP Quantifiable Statistics

Categories	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14
Recycled Oil (tons)	16	9.1	17.82	20.27	26.88	35.38	36.4	35.32	36.52	28.15	33
Recycled Glass (tons)	1,798	1,052.70	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
Total Brush Collection (tons)	25,613.10	31,702.78	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
Total Waste Collected (tons)	159,595.04	157,622.99	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
# of Water Quality Complaints (non-construction) Investigations Initiated in Database	161	213	287	156	135	133	139	138	122	131	114
# of Construction Stormwater Related Inspections	4,708	5,509	5,721	6,552	6,327	6,160	5,079	5,457	5,843	5,170	6,064
# of Grading Permits Issued	270	271	252	239	165	109	121	135	142	138	318
Plans Submitted to Stormwater Development and Review	868	1,562	1,427	1,505	1,970	1,600	1,367	1,319	1,525	1,791	1,813
# of Construction Plans Approved or Declared No Permit Needed by Stormwater Development and Review	387	449	507	619	871	687	506	559	1,174	1,411	1,360
# of Stormwater Enforcements (NOVs and SWOs)	228	197	283	190	342	188	123	148	94	96	168

Table 13A.3 – Ambient Monitoring Data for the FY14 Reporting Period

Site Name	Date	DO (%)	DO (mg/l)	Cond (Us)	Temp C	pH	Flow (cfs)	*E. coli (MPN)*	PCR (hubac)	BOD5 (mg/l)	COD (mg/l)	NH3 (mg/l)	TKN (mg/l)	Nitrite-Nitrate (mg/l)	Total N (mg/l)	Diss. P (mg/l)	Total P (mg/l)	Pb (ug/l)	Zn (ug/l)	Cr (ug/l)	Cu (ug/l)	Ni (ug/l)	Oil and Grease (mg/l)	Suspended Solids (mg/l)	Diss. Solids (mg/l)
Dry Creek	7/25/2013	62.9	5.87	572	21.4	7.33	2.60	579.4	0	<2	0	<0.1	0.438	0.627	1.065	1.428	1.563	<0.001	0.001	<0.001	0.001	<0.001	<5	0	365
Dry Creek	10/15/2013	54.6	4.92	597	19	7.39	0.42	727	0	<2	0	<0.1	-	0.035	-	0.866	0.845	<0.001	<0.001	<0.001	<0.001	<0.001	<5	0	338
Dry Creek	2/11/2014	105.9	12.92	247.3	6.6	8.24	14.00	30.1	0	4	0	<.01	0.247	0.732	0.979	0.124	0.361	0.002	0.009	<0.001	0.001	0.001	<5	0	288
Dry Creek	4/24/2014	99.7	10.23	270.7	13.5	8.12	4.10	156.5	0	<2	0	<0.4	0.271	0.218	0.489	<0.12	<0.12	<0.001	0.001	<0.001	<0.001	<0.001	<5	0	323
Gibson	7/25/2013	54.6	4.88	598	20.3	6.71	0.20	135.4	0	<2	0	<0.1	<0.25	0.61	<0.86	0.614	0.555	<0.001	0.001	<0.001	0.0015	<0.001	<5	0	363
Gibson	10/15/2013	39.7	3.57	534	19.5	6.67	0.28	67	0	<2	0	<0.1	-	0.175	-	0.521	0.553	0.001	0.002	<0.001	<0.001	<0.001	<5	0	323
Gibson	2/11/2014	89.9	9.94	256.1	10.5	7.76	0.44	93.2	0	4	0	<0.1	<0.25	0.716	<0.966	0.2	0.207	<0.001	0.004	<0.001	0.003	0.004	<5	0	366
Gibson	4/24/2014	67.7	6.94	579	13.4	7.03	0.38	21.4	0	<2	0	<0.4	0.217	0.498	0.715	0.169	0.22	<0.001	0.001	<0.001	<0.001	<0.001	<5	0	356
Neeley's Branch	7/25/2013	90.4	7.96	592	21.2	7.99	1.13	435.2	0	<2	0	<0.1	<0.25	1.11	<1.36	0.488	0.479	<0.001	0.002	<0.001	<0.002	<0.001	<5	8	344
Neeley's Branch	10/15/2013	65.9	6.06	568	19.3	7.62	5.77	547.5	0	<2	0	<0.1	-	0.287	-	0.726	0.758	<0.001	0.004	<0.001	0.001	<0.001	<5	70	352
Neeley's Dup.*	10/15/2013	-	-	-	-	-	-	547.5	0	<2	0	<0.1	-	0.286	-	0.467	0.643	<0.001	<0.001	<0.001	0.001	<0.001	<5	26	368
Neeley's Branch	2/11/2014	117.3	12.83	527	7.4	7.95	2.60	461.1	0	5	0	<0.1	0.202	1.47	1.672	0.16	0.171	<0.001	0.005	<0.001	<0.001	<0.001	<5	41	344
Neeley's Branch	4/24/2014	130.9	13.25	565	13.8	8.21	0.60	193.5	0	<2	0	<0.4	0.271	0.447	0.718	<0.12	<0.12	<0.001	0.002	<0.001	<0.001	<0.001	<5	76	358
Trip Blank*	10/15/2013	-	-	-	-	-	-	<1	0	<2	0	<0.1	-	<0.05	-	<0.12	<0.12	<0.001	0.002	<0.001	<0.001	<0.001	<5	0	<1
Field Blank*	10/15/2013	-	-	-	-	-	-	<1	0	<2	0	<0.1	-	<0.05	-	<0.12	<0.12	<0.001	0.005	<0.001	<0.001	<0.001	<5	0	<1

* QA/AC

Table 13A.4 – Wet Weather Monitoring for the FY14 Reporting Period

Site Name	Date	Flow cfs	*E. coli* (MPN)	PCR hubac	BOD5 (mg/l)	COD (mg/l)	NH3 (mg/l)	TKN (mg/l)	Nitrite-Nitrate (mg/l)	Total Nitrogen (mg/l)	Dissolved P (mg/l)	Total P (mg/l)	Pb (ug/l)	Zn (ug/l)	Cr (ug/l)	Cu (ug/l)	Ni (ug/l)	Oil and Grease (mg/l)	Susp. Solids (mg/l)	Diss. Solids (mg/l)
Comm FF	10/31/2013	0.0790	>2419.6	ND	53	256	0.264	3.25	1.03	4.28	0.185	0.354	2.14	173.0	2.42	33.70	4.71	1.5	34.7	229
Comm FF	11/22/2013	0.1904	648.8	0.8	3	28	0.276	ND	ND	ND	0.054	0.114	ND	36.6	ND	4.12	ND	ND	12.5	93
Comm FF	12/5/2013	0.0043	26820.0	0.1	28	135	0.135	0.70	0.83	1.53	0.217	0.414	4.12	138.0	ND	23.90	ND	ND	46.0	145
Comm FF	1/9/2014	0.0790	30.0	ND	>42	384	1.640	4.92	0.45	5.37	0.054	1.440	20.20	537.0	8.10	55.30	9.50	14.9	225.0	7020
Comm 1Hr	10/31/2013	0.0790	>2419.6	ND	39	181	0.188	3.88	0.56	4.44	0.125	0.333	2.28	146.0	ND	25.00	3.02	3.5	24.0	157
Comm 1HR	11/22/2013	0.1904	307.6	0.6	6	28	0.118	ND	ND	ND	0.054	0.083	ND	35.1	ND	ND	ND	ND	6.5	83
Comm 1HR	12/5/2013	0.0070	24810.0	ND	20	149	0.158	0.66	0.71	1.36	0.241	0.608	7.51	195.0	2.48	28.80	ND	10.1	59.0	161
Comm 1HR	1/9/2014	0.0790	43.3	ND	20	183	0.538	2.20	ND	2.20	0.065	1.120	12.00	278.0	5.23	30.80	ND	9.6	132.0	1460
Ind FF	10/31/2013	0.0140	43.7	0.2	13	78	ND	1.16	0.29	1.45	0.107	0.259	2.07	52.5	ND	7.10	ND	1.8	27.0	84
Ind FF	11/22/2013	0.0417	33.1	1.5	5	ND	ND	ND	ND	ND	0.160	0.174	ND	15.4	ND	ND	ND	ND	ND	82
Ind FF	12/5/2013	0.0097	76.3	ND	24	92	ND	ND	0.42	0.42	0.368	0.566	2.30	53.1	ND	9.07	ND	2.7	21.0	123
Ind FF	1/9/2014	---	9.8	ND	7	32	0.100	ND	ND	ND	0.033	0.167	ND	42.9	ND	4.38	ND	2.5	8.8	305
Ind 1HR	11/22/2013	0.0208	42.8	0.6	3	ND	0.075	ND	ND	ND	0.160	0.164	ND	14.5	ND	ND	ND	ND	ND	77
Ind 1HR	12/5/2013	0.0436	98.4	ND	3	ND	0.118	ND	ND	ND	0.185	0.234	ND	23.0	2.95	ND	ND	ND	ND	50
Ind 1HR	1/9/2014	---	9.8	ND	5	25	ND	0.84	ND	0.84	0.054	0.146	ND	37.8	ND	ND	ND	3.0	9.1	221
Open FF	6/10/2014	0.0476	>2419.6	ND	ND	46	0.168	1.19	ND	1.19	0.461	1.060	1.65	43.2	2.90	ND	ND	ND	10.7	162
Open 1 Hr	6/10/2014	0.0064	>2419.6	ND	ND	28	ND	0.79	ND	0.79	0.436	0.730	ND	16.2	ND	ND	ND	3.2	33.0	222
Res FF	11/22/2013	0.0010	11870.0	ND	8	50	0.097	1.13	ND	1.13	0.848	1.010	1.83	93.9	ND	ND	ND	ND	ND	188
Res FF	5/14/2014	0.0043	15000.0	ND	25	30	0.203	0.74	ND	0.74	0.135	0.071	5.24	188.0	ND	ND	ND	ND	33.2	41
Res 1HR	11/22/2013	0.0002	4950.0	ND	7	50	0.075	1.33	ND	1.33	1.180	1.330	ND	48.2	ND	5.12	ND	ND	ND	222
Res 1HR	5/14/2014	0.0010	43520.0	ND	5	39	0.126	1.16	0.44	1.60	0.538	0.183	ND	29.2	ND	4.30	ND	ND	7.6	111
Trans FF	10/31/2013	0.1300	387.8	ND	10	149	0.082	1.51	0.88	2.39	0.143	0.319	1.50	53.2	2.36	14.80	5.28	2.4	27.3	167
Trans FF	11/22/2013	0.1904	59.4	0.5	ND	ND	ND	ND	ND	ND	0.107	0.174	ND	20.9	ND	ND	ND	ND	9.0	96
Trans FF	12/5/2013	0.3506	520.0	ND	17	261	0.370	2.11	0.96	3.07	0.319	1.150	7.80	253.0	4.83	35.80	10.40	11.0	153.0	1000
Trans FF	1/9/2014	---	9.6	ND	20	231	0.557	1.66	0.30	1.96	0.114	0.957	12.10	289.0	7.92	28.20	10.90	11.2	103.0	7020
Trans 1Hr	10/31/2013	0.2020	980.4	5.2	ND	55	ND	0.85	ND	0.85	0.111	0.252	1.73	39.4	3.14	8.69	ND	ND	20.5	81
Trans 1HR	11/22/2013	0.0040	44.1	1.2	2	21	ND	ND	ND	ND	0.079	0.150	ND	19.0	ND	4.54	ND	ND	5.5	134
Trans 1HR	12/5/2013	0.8231	185.0	ND	4	55	0.155	ND	ND	ND	0.234	0.502	3.41	60.7	2.10	8.42	ND	2.0	61.0	122
Trans 1HR	1/9/2014	---	1.0	ND	11	185	0.302	1.66	ND	1.66	0.097	0.788	7.61	173.0	5.58	22.30	6.89	8.3	74.2	2650

--- missing data
ND Non-Detect

Table 13A.5 – Benthic Monitoring Data for the Reporting Period

Neeleys Creek			
11/11/2013	Neely's	Whites 11/8/13	52
5/6/2014	Neely's	Whites 5/2/14	19
Dry Creek			
10/29/2013	Dry	Whites 11/8/13	71
5/5/2014	Dry	Whites 5/2/14	48
Gibson Creek			
11/11/2013	Gibson	Whites 11/8/13	Site Dry - No Sample
N/A	Gibson	Whites 5/2/14	Site Dry - No Sample

Parks Department MS4 Maintenance Video/SOP Training Employee Sign-in Sheets

VIDEO & SOP

Employee Stormwater Training Sign-in Sheet

(Maintenance Employees to be trained on each Stormwater SOP located within Appendix once per calendar year. Employee sign-in sheets shall be kept within Appendix C of this document for a Period of no less than 3 years)

Metro Facility Name	Year of the Training	Supervisor Performing Training
McCabe Golf	2013	Phil Lockett
Employee Name	**Employee Signature**	**Date Trained**
Daniel Corlew	Daniel Corlew	11/22/13
Will Thrower		11-22-13
Roy Jordan		11/22/13
Anthony Burnett		11/22/13
Scott Lee		11/22/13
Brennan Merritt		11/22/13
Mark Littlejohn		11/22/13

Parks Department MS4 Maintenance Video/SOP Training Employee Sign-in Sheets

VIDEO & SOP

Employee Stormwater Training Sign-in Sheet
(Maintenance Employees to be trained on each Stormwater SOP located within Appendix once per calendar year. Employee sign-in sheets shall be kept within Appendix C of this document for a Period of no less than 3 years)

Metro Facility Name	Year of the Training	Supervisor Performing Training
Two Rivers Golf Maintenance	2013	Brandon Dawson
Employee Name	**Employee Signature**	**Date Trained**
Jamie Prescott		10/25/13
Bucky Qualls		10/25/13
Scott Smith		10/25/13

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Parks Department MS4 Maintenance Video/SOP Training Employee Sign-in Sheets

VIDEO & SOP

Employee Stormwater Training Sign-in Sheet

(Maintenance Employees to be trained on each Stormwater SOP located within Appendix once per calendar year. Employee sign-in sheets shall be kept within Appendix C of this document for a Period of no less than 3 years)

Metro Facility Name	Year of the Training	Supervisor Performing Training
Shelby Golf Maint.	2013	James S. Merritt
Employee Name	**Employee Signature**	**Date Trained**
Wayne E. Butler	Wayne E. Butler	10/22/2013
Charles L. Grantham	Charles L. Grantham	10/22/2013
Richard L. Howard	Richard L. Howard	10/22/2013

Parks Department MS4 Maintenance Video/SOP Training Employee Sign-in Sheets

VIDEO & SOP

Employee Stormwater Training Sign-in Sheet

(Maintenance Employees to be trained on each Stormwater SOP located within Appendix once per calendar year. Employee sign-in sheets shall be kept within Appendix C of this document for a Period of no less than 3 years)

Metro Facility Name	Year of the Training	Supervisor Performing Training
Ted Rhodes Golf	2013	Jerry Cook
Employee Name	**Employee Signature**	**Date Trained**
Micheal Bond	Micheal Bond	10/28/13
Brandon Denton	Brandon Denton	11/5/13
Trevor Thrower	Trevor Thrower	11/6/13
Steve Booton	Stephen Booton	11/7/13

Parks Department MS4 Maintenance Video/SOP Training Employee Sign-in Sheets

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VIDEO & SOP

Employee Stormwater Training Sign-in Sheet

(Maintenance Employees to be trained on each Stormwater SOP located within Appendix once per calendar year. Employee sign-in sheets shall be kept within Appendix C of this document for a Period of no less than 3 years)

Metro Facility Name	Year of the Training	Supervisor Performing Training
Percy Warner Golf Course	2013	William D Richardson
Employee Name	**Employee Signature**	**Date Trained**
William J Richardson	William J Richardson	11/25/13
Daryl D. Lewis	Daryl D. Lewis	11-25-13
Gregory K Williams	Gregory K Williams	11-25-13

Parks Department MS4 Maintenance Video/SOP Training Employee Sign-in Sheets

VIDEO & SOP

Employee Stormwater Training Sign-in Sheet

(Maintenance Employees to be trained on each Stormwater SOP located within Appendix once per calendar year. Employee sign-in sheets shall be kept within Appendix C of this document for a Period of no less than 3 years)

Metro Facility Name	Year of the Training	Supervisor Performing Training
Harpeth Hills Golf	2013	Phil Luckett
Employee Name	**Employee Signature**	**Date Trained**
James Carty		5/24/13
David Kinney		5/24/13
Will Thrower		5-24-13
Timmy Nannetta		5-24-13
Marty Abbott		5-24-13
William J Richardson		5-24-13
William J Dixon		11-22-13

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Parks Department MS4 Maintenance Video/SOP Training Employee Sign-in Sheets

SOP

Employee Stormwater Training Sign-in Sheet
(Maintenance Employees to be trained on each Stormwater SOP located within Appendix once per calendar year. Employee sign-in sheets shall be kept within Appendix C of this document for a Period of no less than 3 years)

Metro Facility Name	Year of the Training	Supervisor Performing Training
Percy Warner	2013	William H. Powell
Employee Name	**Employee Signature**	**Date Trained**
Jeremy Hale	Jeremy Hale	9-10-13
Jeff Wakefield	Jeff Wakefield	9-10-13
[illegible]	Thomas [illegible]	9-10-13
Perri L. Woodhouse	Woodhouse	"
Timothy Green	Timothy S. Green	9-10-13
Reggie Sims	Reggie Sims	9-10-13
Michael Brown	Michael Brown	9-10-13
Chase Gupton	Chase Gupton	9-10-13

Parks Department MS4 Maintenance Video/SOP Training Employee Sign-in Sheets

Video training

Employee Stormwater Training Sign-in Sheet

(Maintenance Employees to be trained on each Stormwater SOP located within Appendix once per calendar year. Employee sign-in sheets shall be kept within Appendix C of this document for a Period of no less than 3 years)

Metro Facility Name	Year of the Training	Supervisor Performing Training
Warner Park Grounds	2013	William Powell
Employee Name Employee	**Signature Date Trained**	**Date Trained**
Thomas Armstrong		11-22-13
James White		11-22-13
Rick RIGALI		11.22.13
Beggie Sims		11-22-13
Jeff Wakefield		11-22-13
Jeremy Hale		11-22-13
Michael Brown		11-22-13
Woodhouse Perle C		11 23 13
Chase Cupka		11-22-13

MWS System Services MS4 Maintenance Video/SOP Training Employee Sign-in Sheets

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

Metro Department	Metro WATER SERVICES
Supervisor Performing Training (Signature)	Jim PAULUS Jim Paulus
Rain Check Training Video (31 minutes)	☒
Operations and Maintenance SOP Review	☐

Employee Name	Employee Signature	Date Trained
Robby Ervin		12/3/13
A.T. McKissack		12/3/13
Matt Lott		12/3/2013
[illegible]		12-3-13
Danny Perry		12-3-13
Victor Gardner		12-3-13
Jamieo Pipkin		12-3-13
Grayton Nelson		12-3-13
James Bradley		12-3-13
Tim Shrum		12-3-13
Harvell Green		12-3-13
Kwaku S Bonachie		12/3/13
Stanley Marlow		12/3/13
Ashley McKinnon		12-3-13
Cecil Trotter		12-3-2013
Thad Flournoy		12-3-13
Ken Cobb		12-3-13
Charles Clark		12-3-13
Anthony Waggoner		12-3-13
Gregory W Wells		12-3-13
Johnny Easley		12/3/13
Doug Richards	Robert D Richards	12-3-13
Jim Paulus	Jim Paulus	12/3/13

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.

MWS System Services MS4 Maintenance Video/SOP Training Employee Sign-in Sheets

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

Metro Department	METRO WATER SERVICES (SYSTEM SERVICES DIVISION)
Supervisor Performing Training (Signature)	Jim Pavlin
Rain Check Training Video (31 minutes)	☒
Operations and Maintenance SOP Review	☐

Employee Name (PRINT)	Employee Signature	Date Trained
Jim Blankall	Jim Blankall	12-3-13
Danny Jones	Danny Jones	12-3-13
Eddie L Waynick Jr.	Eddie L Waynick	12-3-13
Hal Reed	Hal Reed	12/3/13
Jason Hewitt		12/3/13

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MWS System Services MS4 Maintenance Video/SOP Training Employee Sign-in Sheets

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

Metro Department	METRO WATER SERVICES (SYSTEM SERVICES DIVISION)
Supervisor Performing Training (Signature)	Jim Pavlin
Rain Check Training Video (31 minutes)	☒
Operations and Maintenance SOP Review	☐

Employee Name (PRINT)	Employee Signature	Date Trained
Jim Blankall		12-3-13
Danny Jones		12-3-13
Eddie L Waynick Jr.		12-3-13
Hal Reed		12/3/13
Jason Hewitt		12/3/13

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.

Other NPDES Office Training Sign-in Sheets

10/23/13

EPA's National Stormwater Calculator

Name	Signature
Rebecca Dohn	Rebecca Dohn
Anneli Tempelson	A. Tempelson
Veronica Mullen	Veronica Mullen
Mary Bruce	Mary Bruce
Jason Hewlett	
Travis Drury	
Michael Hunt	Michael Hunt

Other NPDES Office Training Sign-in Sheets

6/5/14

Advanced SW Design: Constructed Wetlands

Print Name	Sign Name
Rebecca Dohn	Rebecca Dohn
Anneli Terry Nelson	

Other NPDES Office Training Sign-in Sheets

Bioretention Research & Design

4/2/14
VT

Print Name	Sign Name
Rebecca Dohn	Rebecca Dohn
Anneli Terrywelson	Anneli Terrywelson

Case Studies & Lessons Learned
Green Infrastructure

4/2/14

Print Name:	Sign Name
Rebecca Dohn	Rebecca Dohn
Anneli Terrywelson	Anneli Terrywelson
Michael Hunt	Michael Hunt

Other NPDES Office Training Sign-in Sheets

Bioretention & Dry Swales

CSN 3/27/14

Print Name	Sign Name
Rebecca Dohn	
Boots O'Hara	
Anneli TerryNelson	
Laura Jones	
Jennifer Knauf	

Other NPDES Office Training Sign-in Sheets

3/12/14

Stream Restoration Basics & Techniques

Part I	Part II	Print Name	Sign name
~~X~~	~~X~~	Rebecca Dohn	Rebecca Dohn
✓	AnN	Anneli Terry Nelson	
✓		Mary Bruce	Mary Bruce
✓		Matt Hayes	Matt Hayes
✓		Jason Hewitt	
✓		Veronica Mullen	Veronica Mullen
✓	CC	Casey Cooper	
✓		Josh Hayes	Josh Hayes

Other NPDES Office Training Sign-in Sheets

3/6/14

Innovative Transportation SW Management: GI in Road Projects

Print Name	Sign
Rebecca Dohn	
Anneli TerryNelson	

Other NPDES Office Training Sign-in Sheets

3/5/14

WEF: STEPP - Stormwater Testing & Evaluation for Products & Practices

Print name	Sign name
Rebecca Dohn	Rebecca Dohn
Michael Hurt	Michael Hurt

Other NPDES Office Training Sign-in Sheets

1/14/14

WEF: Water Advocates

Print Name	Sign Name
Rebecca Dohn	
Anneli Terryniekan	
Michael Hunt	

4.0 Supporting Program Data

The following supplemental reports/permit modifications are included within this section.

MWS PIO Public Education Program Activities during FY14

Metro Water Services Programs & Activities

Report Dates: From 7/1/13 to 6/30/14

427 Programs **8408 Students** **343 Adults**

Tuesday, July 22, 2014 Page 1 of 10

MWS PIO Public Education Program Activities during FY14 (Continued)

ActivityType: Classroom Activity **169 Programs/Activities**

TOTAL Teacher Led Activity	169 Programs/Activities	3651 Students	Adults
The Journey of Your Water Video	**169 Programs/Activities**	**3651 Students**	**Adults**
8/27/2013	Hickman Elementary	4	108	4th grade	
8/28/2013	Tusculum Elem.	4	86	4th grade	
8/29/2013	Donelson Christian Academy	3	40	4th grade	
8/30/2013	Crieve Hall Elementary	3	67	4th grade	
9/4/2013	Paragon Mills Elem.	5	127	4th grade	
9/5/2013	Shayne Elem.	3	75	4th grade	
9/6/2013	Shayne Elem.	3	75	4th grade	
9/9/2013	Granbery Elementary	6	120	4th grade	
9/10/2013	Pennington Elem.	3	70	4th grade	
9/11/2013	Dupont Elementary	3	78	4th grade	
9/16/2013	Gateway Elementary	2	40	4th grade	
9/23/2013	Maxwell Elementary School	4	92	4th grade	
9/24/2013	Glenn Elementary Enhanced Option	2	32	4th grade	
9/25/2013	Binkley, Norman Elementary	4	74	4th grade	
10/3/2013	Cumberland Elementary	3	75	4th grade	
10/28/2013	Percy Priest Elem.	5	100	4th grade	
10/29/2013	Rosebank Elem.	4	80	4th grade	
10/30/2013	Rosebank Elem.	2	50	4th grade	
10/31/2013	Warner Elem. Enhanced Option	3	53	4th grade	
11/11/2013	Harpeth Valley Elementary	2	50	4th grade	
11/12/2013	Harpeth Valley Elementary	3	75	4th grade	
11/18/2013	Kirkpatrick Elem. Enhanced Option	3	54	4th grade	
11/19/2013	Dodson Elementary	4	98	4th grade	
11/21/2013	Tulip Grove Elem.	5	108	4th grade	
11/22/2013	Lockeland Elem. Design Center	3	60	4th grade	
12/2/2013	Stanford Elem. Montessori Design Ctr.	3	75	4th grade	
12/3/2013	Napier Elem. Enhanced Option	4	64	4th grade	
12/10/2013	Buena Vista Elementary Enhanced Option	3	60	3rd grae	
12/11/2013	Ross Elem.	2	40	4th grade	
12/12/2013	Haywood Elementary	4	90	4th grade	

Tuesday, July 22, 2014 Page 2 of 10

MWS PIO Public Education Program Activities during FY14 (Continued)

12/13/2013	Haywood Elementary	2	45	4th grade
12/17/2013	Buena Vista Elementary Enhanced Option	3	60	3rd grade
1/9/2014	Old Center Elem.	3	60	4th grade
1/23/2014	Shwab Elem.	3	60	4th grade
1/28/2014	Fall-Hamilton Elementary Enhanced Option	3	52	4th grade
1/31/2014	Carter-Lawrence Elementary Magnet	4	68	4th grade
2/6/2014	Una Elem.	4	100	4th grade
2/7/2014	Una Elem.	3	75	4th grade
2/11/2014	Cole Elementary	3	75	4th grade
2/12/2014	Cole Elementary	3	75	4th grade
2/13/2014	Tom Joy Elem.	5	86	4th grade
2/14/2014	Cotton, Hattie Elementary	4	76	4th grade
2/28/2014	Bellshire Elementary Design Center	4	79	4th grade
3/3/2014	Westmeade Elem.	4	100	4th grade
4/8/2014	Eakin Elementary	5	100	4th grade
4/14/2014	Stratton Elem.	5	125	4th grade
5/13/2014	Caldwell Elementary Enhanced Option	3	49	4th grade
5/19/2014	Mt. View Elem.	6	150	4th grade

MWS PIO Public Education Program Activities during FY14 (Continued)

ActivityType: Classroom Program 190 Programs/Activities

TOTAL Classroom Program	**190 Programs/Activities**	**4192 Students**	**71 Adults**	
Career Fair	**3 Programs/Activities**	**75 Students**		**Adults**
1/24/2014	Hermitage Elementary	3	75	4th garde
Enviroscape	**15 Programs/Activities**	**321 Students**		**Adults**
9/27/2013	Apollo Middle	3	77	6th grade
10/25/2013	Hume Fogg High Magnet AP Environmental Science	4	34	11th & 12th grade
12/4/2013	Hume Fogg High Magnet Biology class	2	40	9th grade
12/5/2013	Hume Fogg High Magnet	2	50	9th grade
5/22/2014	Margaret Allen Middle non-point source pollution, backflow, Journey of Your Water	4	120	7th grade
The Journey of Your Water Program & Video	**1 Programs/Activities**	**12 Students**		**Adults**
6/24/2014	Special Group	1	12	10th grade
The Water Cycle & Me	**163 Programs/Activities**	**3749 Students**		**Adults**
8/27/2013	Hickman Elementary	4	108	4th grade
8/28/2013	Tusculum Elem.	4	86	4th grade
8/29/2013	Donelson Christian Academy	3	40	4th grade
8/30/2013	Crieve Hall Elementary	3	67	4th grade
9/4/2013	Paragon Mills Elem.	4	127	4th grade
9/5/2013	Shayne Elem.	3	75	4th grade
9/6/2013	Shayne Elem.	3	75	4th grade
9/9/2013	Granbery Elementary	4	120	4th grade
9/10/2013	Pennington Elem.	2	70	4th grade
9/11/2013	Dupont Elementary	3	78	4th grade
9/16/2013	Gateway Elementary	2	40	4th grade
9/23/2013	Maxwell Elementary School	4	92	4th grade
9/24/2013	Glenn Elementary Enhanced Option	2	32	4th grade
9/25/2013	Binkley, Norman Elementary	4	74	4th grade
10/3/2013	Cumberland Elementary	3	75	4th grade
10/28/2013	Percy Priest Elem.	5	100	4th grade
10/29/2013	Rosebank Elem.	4	80	4th grade
10/30/2013	Rosebank Elem.	2	50	4th grade

Tuesday, July 22, 2014 **Page 4 of 10**

MWS PIO Public Education Program Activities during FY14 (Continued)

10/31/2013	Warner Elem. Enhanced Option	3	53	4th grade
11/11/2013	Harpeth Valley Elementary	2	50	4th grade
11/12/2013	Harpeth Valley Elementary	3	75	4th grade
11/18/2013	Kirkpatrick Elem. Enhanced Option	3	54	4th grade
11/19/2013	Dodson Elementary	4	98	4th grade
11/21/2013	Tulip Grove Elem.	4	108	4th grade
11/22/2013	Lockeland Elem. Design Center	3	60	4th grade
12/2/2013	Stanford Elem. Montessori Design Ctr.	3	75	4th grade
12/3/2013	Napier Elem. Enhanced Option	4	64	4th grade
12/10/2013	Buena Vista Elementary Enhanced Option	3	60	3rd grade
12/11/2013	Ross Elem.	2	40	4th grade
12/12/2013	Haywood Elementary	2	90	4th grade
12/13/2013	Haywood Elementary	1	45	4th grade
12/17/2013	Buena Vista Elementary Enhanced Option	3	60	3rd grade
1/9/2014	Old Center Elem.	3	60	4th grade
1/23/2014	Shwab Elem.	3	60	4th grade
1/28/2014	Fall-Hamilton Elementary Enhanced Option	3	52	4th grade
1/31/2014	Carter-Lawrence Elementary Magnet	4	68	4th grade
2/6/2014	Una Elem.	4	100	4th grade
2/7/2014	Una Elem.	3	75	4th grade
2/11/2014	Cole Elementary	3	75	4th grade
2/12/2014	Cole Elementary	3	75	4th grade
2/13/2014	Tom Joy Elem.	4	86	4th grade
2/14/2014	Cotton, Hattie Elementary	4	76	4th grade
2/18/2014	Green, Julia Elementary	3	60	3rd grade
2/28/2014	Bellshire Elementary Design Center	4	79	4th grade
3/3/2014	Westmeade Elem.	4	100	4th grade
4/8/2014	Eakin Elementary	5	100	4th grade
4/14/2014	Stratton Elem.	5	125	4th grade
5/13/2014	Caldwell Elementary Enhanced Option	3	49	4th grade
5/19/2014	Mt. View Elem.	5	150	4th grade
6/12/2014	Special Group Church Summer Camp	1	38	1st - 6th

MWS PIO Public Education Program Activities during FY14 (Continued)

Water Fun & Games		2 Programs/Activities	35 Students	Adults
7/18/2013	Library: Southeast Water Olympics	1	20 elementary	
6/30/2014	Library: Hadley Park PVC pipes and reading	1	15 preschool - elementary	
Water Presentation		**6 Programs/Activities**	**Students**	**71 Adults**
9/3/2013	National Business College water processes, clogs, backflow	1		13
10/17/2013	National Business College water processes, clogs, backflow	1		15
11/5/2013	National Business College water processes, clog prevention, backflow	1		10
2/4/2014	National Business College water processes, backflow, clogs	1		10
2/10/2014	National Business College waer processes, backflow, clogs	1		10
6/2/2014	National Business College Water processes, backflow	1		13

MWS PIO Public Education Program Activities during FY14 (Continued)

ActivityType: Community Outreach Ev 20 Programs/Activities

TOTAL Booth	**4 Programs/Activities**	**Students**	**30 Adults**	
Booth/Table	**4 Programs/Activities**	**Students**	**30 Adults**	
7/16/2013	Special Event MDHA Recycle Rally Event	1		30
7/27/2013	Special Group Adventure Science Chomp Event - Backflow, clogs, pollution prevention,	1		
8/6/2013	Special Event Night Out Against Crime - Identifying MWS employees and trucks	1		
5/17/2014	Master Gardeners Urban Gardening Festival - backflow, pollution prevention	1		
TOTAL Community Outreach Event	**1 Programs/Activities**	**Students**	**Adults**	
Water & Booth	**1 Programs/Activities**	**Students**	**Adults**	
10/5/2013	Special Event Celebrate Nashville	1		
TOTAL Event	**1 Programs/Activities**	**Students**	**6 Adults**	
Special Event	**1 Programs/Activities**	**Students**	**6 Adults**	
9/18/2013	Special Group Training on educational techniques/programs for STOF	1		6
TOTAL Provide Water	**14 Programs/Activities**	**Students**	**Adults**	
Water Fountain	**10 Programs/Activities**	**Students**	**Adults**	
7/4/2013	Hot Chicken Festival	1		
9/1/2013	Live on the Green Concerts multi week event	6		
9/7/2013	Dragon Boat & River Festival	1		
9/14/2013	Wine on the River	1		
4/19/2014	Earth Day Festival	1		
Water Wagon	**4 Programs/Activities**	**Students**	**Adults**	
4/30/2014	Special Event State of Metro	1		
5/3/2014	Tour de Nash Mayor's field day, with water fountain	1		
5/17/2014	Tour de Nash	1		
6/7/2014	Catfish Rodeo	1		

Tuesday, July 22, 2014 Page 7 of 10

MWS PIO Public Education Program Activities during FY14 (Continued)

ActivityType: Community Presentation 9 Programs/Activities

TOTAL Presentation		**2 Programs/Activities**		**Students**	**12 Adults**
Rain Barrels		**2 Programs/Activities**		**Students**	**12 Adults**
7/3/2013	Library: Bordeaux	1			4
7/6/2013	Library: Richland Park	1			8
TOTAL Program		**7 Programs/Activities**		**29 Students**	**85 Adults**
Wise Watering		**7 Programs/Activities**		**29 Students**	**85 Adults**
7/20/2013	Special Group Perennial Plant Society, backflow, water pollution prevention	1			75
6/4/2014	Library: Bordeaux water pollution prevention, backflow prevention	1			2
6/9/2014	Jr. Master Gardeners water pollution prevention, backflow prevention	1	23	10 - 13 years old	
6/10/2014	Library - Bellevue Branch value of water, backflow, rain barrels, watering tips	1	1	3rd grade	1
6/17/2014	Library: Green Hills Backflow, water pollution prevention, watering tips	1	1		2
6/21/2014	Library: North Branch backflow, pollution prevention, watering tips	1	1		3
6/28/2014	Library: Madison Backflow, pollution prevention, watering tips	1	3		2

MWS PIO Public Education Program Activities during FY14 (Continued)

ActivityType: Tour **39 Programs/Activities**

TOTAL Tour: Biosolids	**4 Programs/Activities**		**70 Students**		**15 Adults**
Biosolids Facility Tour: Students	**4 Programs/Activities**		**70 Students**		**15 Adults**
9/30/2013	Vanderbilt School of Science & Math (High Schoo	1	25	9th grade	
11/8/2013	Aquinas Teachers	1			15
11/20/2013	Goodpasture Christian School Environmental biology class	1	24	11th & 12th grade	
4/16/2014	Martin Luther King Magnet	1	21	Seniors	
TOTAL Tour: MWS Facilities	**1 Programs/Activities**		**Students**		**3 Adults**
Facilities Tour	**1 Programs/Activities**		**Students**		**3 Adults**
6/9/2014	Special Group Internal Auditors	1			3
TOTAL Tour: WTP	**15 Programs/Activities**		**201 Students**		**63 Adults**
K.R. Harrington Tour: Adults	**2 Programs/Activities**		**Students**		**34 Adults**
7/2/2013	Special Group Lenoir City Operators	1			8
2/24/2014	University: TSU Health Sciences Class	1			26
K.R. Harrington Tour: Students	**12 Programs/Activities**		**201 Students**		**Adults**
8/19/2013	Stratford High	1	17	10th grade	
8/26/2013	Hillsboro High	1	20	10th grade	
9/30/2013	Vanderbilt School of Science & Math (High Schoo	1	25	9th grade	
10/9/2013	Special Group Backfield in Motion	2	30	middle school	
11/6/2013	Martin Luther King Magnet	1	21	11th & 12th grade	
12/9/2013	Donelson Christian Academy AP Environmental Science	1	28	11th & 12th grade	
2/4/2014	Montgomery Bell Academy	2	23	Seniors	
2/4/2014	Montgomery Bell Academy	1	10	Seniors	
6/2/2014	Harpeth Hall STEM Camp	1	15	high school	
6/18/2014	Special Group Preston Taylor Boys & Girls Club	1	12	middle school	
Ohohundro Tour: Adults	**1 Programs/Activities**		**Students**		**29 Adults**
3/11/2014	Special Group David Lipscomb Connect 2014	1			29
TOTAL Tour: WWTP	**19 Programs/Activities**		**265 Students**		**58 Adults**

Tuesday, July 22, 2014 Page 9 of 10

MWS PIO Public Education Program Activities during FY14 (Continued)

White's Creek Tour: Adults	1 Programs/Activities		Students	8 Adults
7/2/2013	Special Group Lenoir City Operators	1		8
Whites Creek Tour: Students	**18 Programs/Activities**	**265 Students**		**50 Adults**
8/15/2013	Stratford High	1	17	10th grade	
8/22/2013	Hillsboro High	1	20	10th grade	
9/30/2013	Vanderbilt School of Science & Math (High Schoo	1	25	9th grade	
10/1/2013	Goodpasture Christian School	1	25	11th & 12th grades	
10/8/2013	Special Group Backfield in Motion	2	30	middle school	
10/24/2013	University: Nashville State Community College	1			15
11/8/2013	Aquinas Teachers	1			15
2/19/2014	Hume Fogg High Magnet	1	16	11th and 12th grades	
2/20/2014	Hume Fogg High Magnet	1	16	11th & 12th grades	
2/27/2014	Stratford High STEM class	1	26	9th grade	
4/1/2014	University: Vanderbilt Writing Seminar: Water Rights and Wrongs	1		College	13
4/25/2014	Harpeth Hall	1	16	Juniors, Seniors	
5/1/2014	Harpeth Hall	1	18	Juniors, Seniors	
5/14/2014	McKissack Middle Prof. Dev. Design Ctr. Project Based Learning group	2	45	8th grade	
6/19/2014	University: Vanderbilt	1		College class	7
6/25/2014	Special Group Fisk Summer camp - Talented 10th program	1	11	10th grae	

Tuesday, July 22, 2014 Page 10 of 10

MWS Stormwater NPDES Public Education Events/Presentations during FY14

Date	Event	Estimated Audience Size	Organizer Initials	Audience	Education Type
7/25/2013	IECA Nashville Roadshow	100	Dohn	Professionals	Presentation
7/27/2013	Science Center CHOMP Event	100	Berbiglia	Youth	Citywide Event
7/30/2013	Debris in ditches mail-out	6	Hayes	Residences on Barclay Square Drive and Charmain Court	Mail-out
7/30/2013	Debris in ditches mail-out	6	Hayes	Homeowners	Mail-out
8/16/2013	Opry Mills Restaurant Handout	7	Hewitt	Restaurant Managers	Brochure/Door Hanger Distribution
8/20/2013	Fesslers Pkwy Stormwater Pollution Door Hanger	8	Hewitt	Business Park Leasers and Property Manager	Brochure/Door Hanger Distribution
8/28/2013	EPA Brochure Door Hanging	1	Hewitt	Midway Motel and Landscapers	Brochure/Door Hanger Distribution
9/6/2013	EPA Door Hanger Drop Off	2	Hewitt	Neighbors of 513 Schooner Cove	Brochure/Door Hanger Distribution
9/6/2013	PIE Landscaping Brochure Email	1	Hewitt	River Plantation Community Association Manager/Landscapers	Brochure/Door Hanger Distribution
9/7/2013	2013 Dragon Boat Races	200	Bruce	General Public	Citywide Event
9/12/2013	Stratford High Science and Engineering Fair	306	Bruce	High School Students	School
9/16/2013	Debris in ditches mail-out	2	Hayes	Residents	Mail-out
9/16/2013	Debris in ditches mail-out	2	Hayes	Homeowners	Mail-out
9/17/2013	Green Roof Design Strategies for Stormwater Management	60	Hunt	Local Professionals	Presentation
9/19/2013	TDEC Level One EPSC Workshop	90	Binder	Prospective Level 1 EPSC professionals	Presentation
9/23/2013	Streamwalk doorhangers	5	Drury	residents of Holt Road	Brochure/Door Hanger Distribution
9/24/2013	NOV and Educational Materials Mailed out	1	Hayes	La Primavera and Taqueria Express	Mail-out
10/10/2013	Global Motorsports Car Washing	1	Hewitt	Global Motorsports	Metro Employee MS4 Compliance
10/26/2013	Nashville Urban Runoff 5K	150	Hayes	Joggers	Citywide Event
11/6/2013	TNGIC Middle TN GIS Forum	150	Drury	Conference attendees	Presentation
11/7/2013	TSU-Good AG practices workshop	100	Winesett	TSU ag students, faculty and local farmers	Presentation
11/12/2013	Industrial Education Workshop Invitations	307	Hayes	Industrial Operators in Davidson County	Mail-out
11/19/2013	TDEC Level One EPSC Workshop	100	Binder	Prospective Level 1 EPSC professionals	Presentation
11/22/2013	Glendale Lane Leves in Ditch Mail-out	36	Hayes	Residents along Glendale Lane	Mail-out
12/2/2013	Landscaping Mailout	92	Hewitt	Landscaping Companies	Mail-out
12/3/2013	MS4 Training Video and SORP Review	23	Hunt	System Services Day-Crew Employees	Metro Employee MS4 Compliance
12/3/2013	MS4 Training Video and SORP Review	5	Hewitt	System Services Night-Crew Employees	Metro Employee MS4 Compliance
12/6/2013	MS4 Training Video and SORP Review	11	Hewitt	System Services Crew Employees	Metro Employee MS4 Compliance
12/10/2013	Industrial Operator Workshop	40	Hayes	Industrial Operators in Davidson County	Public/Group Meeting

MWS Stormwater NPDES Public Education Events/Presentations during FY14 (Continued)

Date	Event	Estimated Audience Size	Organizer Initials	Audience	Education Type
12/17/2013		1	TerryNelson	Assistant Manager at Home Depot	Brochure/Door Hanger Distribution
2/6/2014	Nancy Stoner Visit	50	Bruce	EPA/TDEC/Metro Staff	Presentation
2/6/2014	Nancy Stoner Visit	50	Dohn	EPA/TDEC/Metro Staff	Presentation
2/12/2014	Stormwater Door Hanger Drop Off	1	Hewitt	Fulin's Asian Cuisine	Brochure/Door Hanger Distribution
2/18/2014	WEF Watershed Conference	120	Hunt	Various water professionals from KY & TN to include Federal, State and local regulators	Presentation
2/24/2014	Gracroft Neighborhood Mail-out	181	Hayes	Neighborhoods around Graycroft Avenue	Mail-out
2/25/2014	TDEC Level One EPSC Workshop	140	Binder	Prospective Level 1 EPSC professionals	Presentation
2/27/2014	Lawn and Garden Show	475	Bruce	General Public	Citywide Event
2/27/2014	IECA Environmental Connection Conference	40	Dohn	IECA Conference Attendees	Tour
2/28/2014	IECA Environmental Connection Conference	40	Binder	IECA attendees	Presentation
3/19/2014	BMP maintenance presentation	16	TerryNelson	Ghertner and Company (property managers)	Presentation
4/7/2014	Restaurant Mail Out	1	Hewitt	Las Cazuela's Employees and Management	Mail-out
4/10/2014	NSCC Earth Day	100	Mullen	Students and Faculty	Educational Booth
4/15/2014	Individual Mail-out	1	Drury	Pool owner	Mail-out
4/19/2014	Earth Day Festival-Citywide	1000	Mullen	Nashville Citizens	Educational Booth
4/29/2014	Street Sweeping Contractor Training	10	Hayes	Sweeping Corpororation (MWS Contractors)	Metro Employee MS4 Compliance
4/30/2014	Educational Mail-out	1	Hewitt	Business Operator	Mail-out
5/7/2014	Pecha Kucha - Water Infrastructure	25	Dohn	Professionals	Presentation
5/17/2014	Urban Gardening Festival	1400	Berbiglia	Public	Educational Booth
5/21/2014	Tequilla Cowboy	1	Hayes	Tequilla Cowboy Manager	Brochure/Door Hanger Distribution
6/3/2014	413 Elm Street Homeowner Education	1	Hayes	Resident of 413 Elm Street	Brochure/Door Hanger Distribution
6/5/2014	CMA Fest	10,000	Bruce	Festival attendees	Educational Booth
6/6/2014	Litter Prevention Ad in Tennessean	1500		Nashville citizens	Citywide Event
6/6/2014	Litter Prevention Ad on Billboard	965812		General Public	Citywide Event
6/7/2014	Catfish Rodeo	150	Bruce	Families	Educational Booth
6/17/2014	MS4 Program Presentation to EPA Region 4 Staff	11	Hunt	EPA Region 4 Staff	Presentation
6/20/2014	AWRA Presentaton	60	Hunt	AWRA Members	Presentation
6/20/2014	TNAWRA Meeting	60	Dohn	Stormwater Professionals	Tour

Metro Department of Public Works Waste Collection During FY14

	July	August	September	October	November	December	January	February	March	April	May	June	Total
Recycling													
Curbside Recycling/Inhouse Recycling/Recycling Dumpsters													
Mixed Recyclables	977.47	1,125.65	1,038.86	936.65	1,118.23	1,140.89	1,066.17	1,175.45	997.23	1,035.92	1,177.95	1,136.38	12,926.85
Monthly Totals	**977.47**	**1,125.65**	**1,038.86**	**936.65**	**1,118.23**	**1,140.89**	**1,066.17**	**1,175.45**	**997.23**	**1,035.92**	**1,177.95**	**1,136.38**	**12,926.85**
Household Hazardous Waste Facility													
Oil	2.8	3.69	4.14	2.42	2.91	0	4.57	1.37	1.4	0	5.5	4.2	33.00
Anti Freeze	0	0	0	0	0	0	0	0	0	0	0	0	-
Electronics	14.72	9.43	20.85	27.26	9.28	8.21	21.89	13.6	19.49	16.05	35.54	17.78	214.10
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	0	5.16	1.1	0	8.84	3.88	0.79	0	0.66	0	10.35	5.09	35.87
Monthly Totals	**17.52**	**18.28**	**26.09**	**29.68**	**21.03**	**12.09**	**27.25**	**14.97**	**21.55**	**16.05**	**51.39**	**27.07**	**282.97**
Drop Off Recycling Centers & Convenience Centers													
Carpet/Carpet Pad	29.20	40.88	23.36	26.28	35.04	20.44	32.12	26.28	23.36	26.28	29.20	26.28	338.72
Mixed Recyclables	12.26	11.68	10.60	13.47	11.36	13.45	12.20	12.74	11.09	12.84	12.33	14.75	148.77
Aluminum & Tin	-	-	-	-	-	-	-	-	-	-	-	-	-
Glass	204.25	189.38	154.95	196.59	170.46	187.96	169.84	166.07	163.32	181.06	183.10	169.18	2,136.16
Mixed Paper	217.53	217.81	209.21	206.53	213.48	257.37	205.74	183.98	199.76	216.04	206.58	198.67	2,532.70
OCC	164.21	156.44	169.78	139.81	125.87	162.14	181.71	139.78	156.95	151.37	179.77	149.00	1,876.83
Plastic	42.96	42.03	39.65	39.97	33.49	42.99	38.22	37.31	38.69	41.22	41.85	42.54	480.92
Plastic Bottles & Metal Cans	31.50	29.08	29.13	27.13	26.86	28.32	30.81	25.42	23.96	28.55	190.87	22.43	494.06
Scrap Metal	24.89	19.60	11.59	30.67	16.64	9.54	8.74	7.52	11.92	28.65	16.63	24.27	210.66
Tires	194.49	578.46	426.21	478.26	384.44	200.27	455.98	405.01	0.00	690.56	621.49	1,449.78	5,884.95
Monthly Totals	**921.29**	**1,285.36**	**1,074.48**	**1,158.71**	**1,017.64**	**922.48**	**1,135.36**	**1,004.11**	**629.05**	**1,376.57**	**1,481.82**	**2,096.90**	**14,103.77**
Waste Collection													
Total Metro Public Works Trash C	4,603.41	4,482.47	3,726.00	4,521.65	4,030.99	4,167.95	4,097.77	3,634.21	3,864.30	4,591.71	4,227.75	3,854.67	49,802.88
Total Convenenience Center Tra	1,347.33	1,450.71	1,255.08	1,327.14	1,030.32	986.29	1,006.17	1,113.34	1,435.96	1,563.65	1,620.81	1,460.84	15,597.64
Contracted Residential	8,062.71	8,024.10	6,723.48	7,633.65	7,049.93	7,469.66	7,487.01	6,275.79	6,407.34	8,101.14	8,121.33	7,039.04	88,395.18
Monthly Totals	**14,013.45**	**13,957.28**	**11,704.56**	**13,482.44**	**12,111.24**	**12,623.90**	**12,590.95**	**11,023.34**	**11,707.60**	**14,256.50**	**13,969.89**	**12,354.55**	**153,795.70**
Brush Collection													
Unground -- Grapple Hook	0	0	0	0	0	0	0	6.34	37.43	12.27	26.64	20.38	103.06
Unground -- Dropped Off	201.3	148.81	28.76	44.85	45.11	22.76	36.81	0	0	0	0	0	528.40
Unground -- Contractor	2,157.56	1,924.55	1,908.38	4,060.94	1,502.46	1,748.11	1,936.59	1,436.10	2,201.89	2,532.94	1,977.53	2,846.73	26,233.78
Ground -- Dropped Off	39.38	28.98	22.2	48.74	48.87	11.55	22.74	34.45	0	0	0	0	256.91
Leaves -- Metro	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	32.51	12.33	6.53	0.00	51.37
Leaves -- Dropped Off	4.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.85
Monthly Totals	**2,403.09**	**2,102.34**	**1,959.34**	**4,154.53**	**1,596.44**	**1,782.42**	**1,996.14**	**1,476.89**	**2,271.83**	**2,557.54**	**2,010.70**	**2,867.11**	**27,178.37**

Note: Units are reported in Tons.

Metro Department of Public Works Hazardous Spills Responded to During FY14

Date	Location	Situation	Actions
6/4/2014	Printers Alley	Hydraulic oil in roadway	Covered with 200 pounds spill gone
5/22/2014	Hillsboro Recycling Center	25 gallons hydraulic oil in lot	Put 500 pounds absorbent on lot with spreader truck
5/20/2014	Lebanon @ Spence ln	25 gallons of hydraulic oil on road	Put down 400 pounds spill gone with spreader truck
4/22/2014	116 river hills Drive	5 gallons hydraulic oil on road	Put 50 pounds spill gone on product
4/17/2014	31st Ave n @ Clifton	5-8 gallons of hydraulic oil spilled from brush truck	Put down 75 pounds of spill gone to absorb oil
4/9/2014	2131 elm hill pk (apartment complex)	Approximately 25-30 gallons hydraulic oil spilled in parking lot	Covered with 300 pounds spill gone and cleaned up
3/14/2014	Winthorne Dr @ Glengarry Dr	10 gallons hydraulic oil on road	Put 200 pounds spill on road
3/12/2014	831 Fesslers Pky.	Approximately 50 gallons diesel leaked in parking lot to street	Covered road. 200 pounds. Spill gone absorbent
3/6/2014	327 Foxglove dr	Hydraulic oil spill	Put down 150 pounds absorbent
2/28/2014	203 Rolling Mill Rd	45 gallons Hydraulic oil on road	Put 150 pounds absorbent down
2/26/2014	1909 Lombardy Dr	Hydraulic oil on road	Covered with 300 pounds spill gone
1/3/2014	240 Lisa Lane	Hydraulic oil on road	Waste solutions cleaned up the spill
12/20/2013	8th Av. @ Edgehill	Hydraulic oil spill	Covered with absorbent approximately 600 pounds spill gone
11/29/2013	Holt Rd @ Nolensville Road	Mva / 5 gallons Gas on road.	Put 20 pounds. Spill gone absorbent on road
11/7/2013	Woodshire Dr @ Trebor Dr	Hydraulic oil leak on road	Put down 100 pounds spill gone and swept
11/4/2013	Pierce Road @ Sarver	Punctured tanks in tractor trailer	Contained diesel spill approximately. 30 gallons.
9/11/2013	Briley South @ MM 6	5 gallons oil on road	Covered with 400 pounds spill gone, used spreader truck
9/4/2013	2nd Ave.N @ Broadway	10 gallons hydraulic oil on road	Covered with 50 pounds spill gone and swept up
8/13/2013	1900 Dickerson Road	Garbage truck leaked oil on road	Used 550 pounds spill gone to cover oil on road
7/17/2013	Hillsboro & Richards Jones Road	Gas spill in gas station	None OEM/ West Nashville cleaned up

Metro Department of Public Works Deicing Activities During FY14

	July	August	September	October	November	December	January	February	March	April	May	June	Total
Amount of salt/brine applied to Roadways (tons)	0	0	0	0	0	927.57	1,722.69	457.86	0	0	0	0	3,108.12

Copy of Landscaping Company Public Education Mail-out

METRO WATER SERVICES STORM WATER

Attention Landscaping Companies

Please help us maintain the health and beauty of Nashville's streams by implementing the following best management practices.

Keep Storm Drains, Ditches, and Street Gutters Free of Debris Leaves, brush, and/or grass clippings dumped into ditches and drains not only cause dangerous roadway flooding by clogging downstream culverts and bridges, but also add an unnatural loading of organic pollutants to the receiving streams. Please refer to the following webpage: http://www.nashville.gov/Public-Works/Neighborhood-Services.aspx Click on the Yard Waste and Composting Section for details on proper yard waste disposal.

Use Lawn Chemicals Responsibly Lawn chemicals washing from yards into storm drains, ditches, and streams are dangerous to wildlife. Minimize the use of pesticides and fertilizers, and strictly follow label instructions. Never spray lawn chemicals near water features. Improper discharges of lawn chemicals into storm drains is a direct violation of Metro Code: 15.64.205. For more tips, please check out the following website: http://www.nashville.gov/Stormwater

Allow Plants to Grow Along Streams Plants growing along the creek banks increase nature's ability to filter pollution from runoff, which help to keep our streams clean. Removing vegetation from creek banks reduces nature's ability to filter or absorb stormwater runoff, and can increase stream bank erosion.

Stabilize Exposed Soil: Exposed soil washes off into storm drains and ditches, eventually reaching streams and rivers. Disturbed areas should be stabilized as quickly as possible with seed and straw or other methods.

To report water pollution concerns, please contact us at 615-880-2420 or StormWaterQuality@nashville.gov

Mailing Address Here

METRO WATER SERVICES STORM WATER

NPDES/Water Quality Division
1607 County Hospital Road
Nashville, TN 37218

Metro's Public Notice for the FY13 MS4 Permit Annual Report

(REVISED)

STORMWATER MANAGEMENT COMMITTEE MEETING NOTICE

Meeting Date: 06-NOVEMBER-2014
Meeting Time: 8:00 a.m. – 12:00 p.m.
Location: Metro Water Services – Administration Building
Second Floor Conference Room
1600 Second Avenue North
Nashville, Tennessee 37208
Contact: Paula Kee
Coordinator – Stormwater Management Committee (SWMC)
Phone: (615) 880-2334 Email: Paula.Kee@nashville.gov

AGENDA

I. Call to Order

II. Approval of 04-SEP-2014 Meeting Minutes

III. Approval of 04-SEP-2014 Decision Letters

IV. Items of Business

1. Metro Water Services Staff Presentation: 2014 Annual Report – NPDES MS4 Permit

V. Cases to be Heard

201400019 FIRST AVENUE FLATS (700, 702, & 706 FIRST AVENUE NORTH)
Floodway Buffer Disturbance
Stormwater BMPs in the Buffer
Continuous Mowing and Maintenance of Buffer Area

201400020 MENTAL RETARDATION CENTERS (328 DENNYWOOD DRIVE)
Stream Buffer Disturbance

VI. Items of Business (Continued)

2. Committee review and vote on a revised list of standard variance conditions and reminders.

VII. Adjournment

Next Meeting – 04-DEC-2014

Cc: Mr. Wade Hill – Assistant Director, Codes Administration
Mr. Doug Sloan – Assistant Director, Planning Department
Mr. Scott Potter – Director of Metro Water Services
Mr. Tom Palko – Assistant Director, Stormwater Division
Mr. Michael Hunt – Stormwater, NPDES Section Manager
Mr. Roger Lindsey – Stormwater, Development Review Section Chief
Ms. Shain Dennison – Director, Metro Greenways
Mr. Stephan Kivett – Urban Forester, Codes Administration
Metropolitan Clerk

ATTACHMENT A – PROTECTED SPECIES REPORT

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

Permit Year 3
(Period 07/01/13– 06/30/14)

Reviewed and Updated:
September, 2014

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 19 rare or protected aquatic species that have known to occur or have historically occurred within Davidson County.

Only 5 of the 19 rare aquatic species have a federal protection status, all of which are listed as "Endangered", while 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, and,
- "T" Threatened

Typical Habitat Requirements:
While the 19 species may require specific habitat conditions, the general type of aquatic habitat can be broken into 3 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 – FY14

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	D	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	*Orconectes shoupi*	Nashville Crayfish	G1G2	LE	E	1st-order & larger streams, generally with bedrock bottom, under slabrock; 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

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 three-prong approach is in place:

1. Control Future Development –
    a) Establish local regulations that prevent future development from destroying aquatic habitat.
    b) Monitor runoff during construction to prevent the destruction of aquatic habitat
    c) Enforce on developments that violate local construction regulations that could lead to the further destruction of aquatic resources.
2. Control the quality of stormwater runoff from existing properties
    a) Establish local regulations that prevent the discharging of pollutants to waterways
    b) Monitor existing properties to ensure pollutants are not being discharged to the waterways.
    c) Enforce on properties/individuals that violate local water pollution laws that could potentially impact aquatic habitat.
3. Monitor the overall water quality and health of Nashville's streams
    a) Analytical sampling of certain water quality parameters
    b) 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, the MWS Stormwater NPDES Section has 6 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 fire fighting 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, the MWS Stormwater NPDES Section 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

Monitoring the Overall Water Quality and Health of Nashville's Streams

MWS Stormwater NPDES Office performs intense monitoring of Metro Nashville, Davidson County streams. Dr. Steve Winesett of the NPDES Division has received a permit from the USFWS 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 know discharges form the MS4 that have caused the destruction of a rare species or their critical habitat.