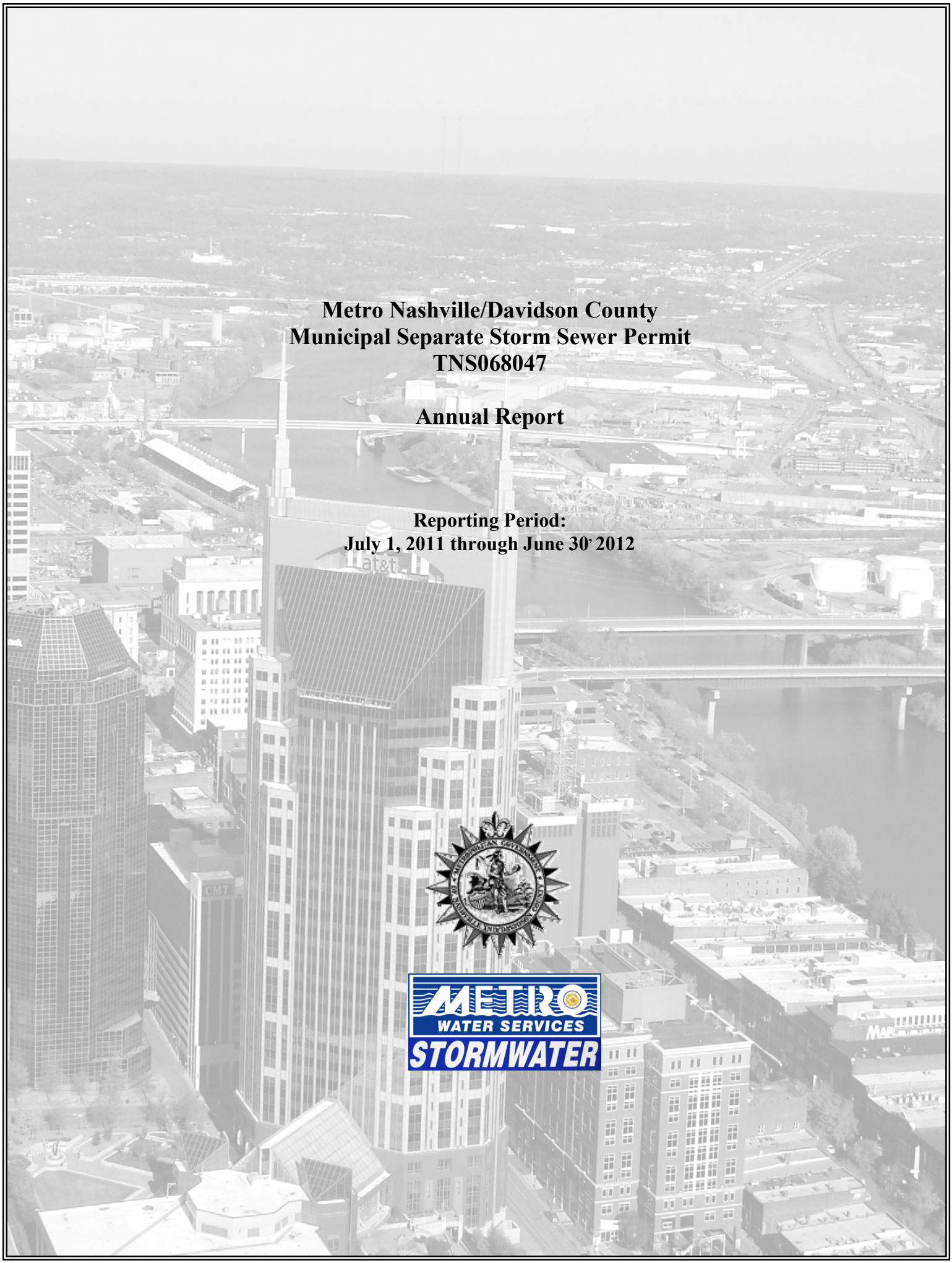

Metro Nashville/Davidson County
Municipal Separate Storm Sewer Permit
TNS068047

Annual Report

Reporting Period:
July 1, 2011 through June 30, 2012

METRO WATER SERVICES
STORMWATER

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1.0 Introduction

The Metropolitan Government of Nashville Davidson County (Metro) was issued the third cycle of the Municipal Separate Storm Sewer System (MS4) permit effective February 1, 2012. Under the previous permit cycles, the reporting period for each permit year coincided with Metro Nashville's Fiscal Year (FY) (July 1st through June 30th). In the new permit, the Tennessee Department of Environment and Conservation (TDEC) specified the same reporting period. Since the current cycle of the permit became effective on February 1, 2012, the new permit requirements are only applied to a 5 month period within the first annual report. For purposes of this document, Metro will also include reporting numbers for the seven months not covered in the previously submitted annual report and the 5 month period that occurred under the new permit. The reporting period for this report will be referred to as Fiscal Year 2012 (FY12).

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, sampling, construction site 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 FY12. For any questions regarding information represented in this report, all inquiries should be directed to the MWS Stormwater NPDES Section at 1607 County Hospital Road, Nashville, Tennessee, 37218, Phone: 615-880-2420.

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 Remedial Maintenance Section
Roger Lindsey	Metro Water Services	Program Manager, Stormwater Development Review and Permitting
Angela Foster	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 Maintenance
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
Sonya Erickson	Metro Water Services	Water Quality Inspector, Stormwater NPDES Section
Mary Bruce	Metro Water Services	Water Quality Inspector, Stormwater NPDES Section
Mark Macy	Department of Public Works	Assistant Director - Engineering Division
David Himes	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
Mike Ryman	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	Overflow Abatement Program Manager
Jim Paulus	Metro Water Services	System Services Overflow Response Program Manager
Bob Parrish	Metro Parks Department	Parks and Recreation Superintendent
Tim Netsch	Metro Parks Department	Assistant Director
Rebecca Ratz	Metro Parks Department	Planning & Facilities Development Division
Scott Harris	Mayor's Office of Emergency Management	Spill Response Coordinator
Stacey Wall	Metro Office of Fleet Management	Fleet Services Manager
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
FOG	Fats, Oils, and Grease
FY12	Fiscal Year 2012
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 Department 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 MS4. This leads to an overall goal – beyond MS4 compliance – of achieving water quality improvements in every Metro stream reach included on TDEC's 303(d) list of impaired streams to the point where streams can eventually be de-listed. 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 greatly reduce and minimize pollutants from entering streams from the MS4 drainage system. Much of these same programs will continue with little to no modifications during the Metro's 3rd permit cycle.

1.2 Major Findings

Each year there are fewer and fewer major discoveries of pollution to the MS4 drainage, much of which can be 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 FY12 are described in the following paragraphs:

1.2.1 Drill Slurry Discharge to Stormwater

During the reporting period for this permit, there were several instances of geothermal drill slurries discharging to the MS4. This type of discharge has been becoming more common especially since energy efficient geothermal drilling operations are ever increasing. In an effort to educate the drilling community of the potential for polluted discharges occurring to the MS4 and community waters, NPDES, in conjunction with TDEC, held a seminar with the Tennessee drilling community. Attendees of the workshop were shown photographs of some of the discharges NPDES has encountered and how they received enforcement actions. The audience was then shown examples of proper Best Management Practices (BMPs) that could be deployed at sites.

1.2.2 Illicit Discharge of Pavement Cut Rinse Water

While in the field performing reconnaissance for potential volunteer stream clean-up activities, the NPDES Section discovered a parking lot maintenance activity that was resulting in a plume of murky sediment water discharging to Mill Creek. Upon further investigation, it was found that the sediment discharge was caused by crews washing and sweeping mud from a pavement cutting activity into a storm drain that discharged directly

into Mill Creek. The company performing the maintenance activity was issued a Notice of Violation (NOV) with an administrative penalty and was held responsible for properly cleaning up the remaining exposed sediment.

1.2.3 Construction Illicit

Upon performing a routine wet weather inspection of a grading permit site, a construction inspector found a site in which the Erosion Prevention and Sediment Controls (EPSC) were in disrepair resulting in a significant amount of sediment loss. An NOV with an accompanying administrative penalty was issued to the site for the lost sediment and failed controls. The construction site was required to remediate lost sediment and repair the failed controls to prevent future discharges.

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

Throughout FY12, the MWS Stormwater NPDES Section Watershed Group performed routine transect sampling for bacteria counts in Bosley Springs Branch (tributary to Richland Creek), which is listed as being impaired for pathogens on the 303(d) list. In addition to performing analysis of the bacteria counts, NPDES also utilized the recently developed Polymerase Chain Reaction (PCR) source tracking laboratory to determine if the elevated bacteria levels were consistent with human sources. Upon determining a substantial input of a source typical of humans, the NPDES Watershed Group coordinated with an active construction site to discover a broken sanitary sewer service line that was seeping into Bosley Springs Branch. The NPDES Watershed Group worked with the property owner and the MWS System Services Division to complete repairs and eliminate the discharge of sanitary waste to the stream. Several follow-up sampling events indicated that

bacteria levels are dropping as a result of the repairs. The NPDES Section's Watershed Group will continue to perform monitoring on Bosley Springs Branch to determine the ultimate benefit to the stream segment.

1.3 Major Stormwater Management Program Accomplishments and Highlights

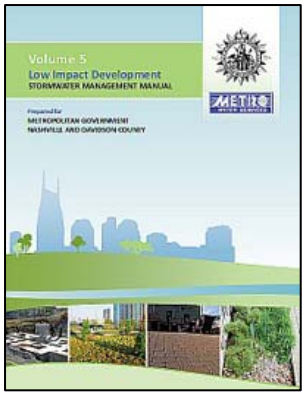
1.3.1 MWS Stormwater Department:

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:

1. In the previous years, a dedicated funding source in the form of a stormwater user fee was passed by Metro Council, which became effective on July 1, 2009. The stormwater user fee is assessed on all residential and non-residential properties within Metro and is dedicated to funding the operations of the MWS Stormwater Division, which includes certain stormwater maintenance activities, engineering activities, and water quality programs. The stormwater user fee has proven over the last three years to be successful long term dedicated funding source for stormwater-only programs.

2. 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 FEMA buyout program for more than 15 years. Since MWS began participating in the home buyout program, Metro has purchased 307 floodplain properties in which structures and other impervious surfaces such as driveways have been removed from the floodplain. Over the years, MWS Stormwater has 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, therefore, 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.

3. In anticipation of stormwater infiltration requirements within the MS4 permits, Metro Nashville previously procured 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. The LID Manual offers 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 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.



4. Over the past couple of years, the NPDES Section has been assisting MWS Administration and System Services Divisions in executing a TDEC-approved Supplemental Environmental Project (SEP). As part of the SEP, MWS committed to installing large rain gardens on four Metro School grounds. Much of the work was completed in the fall of 2011 and the rain gardens have served to collect and infiltrate thousands of gallons of stormwater runoff from adjacent impervious areas – that otherwise would be discharged directly into the MS4.

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.

1. Metro's Parks Department has been a key player in improving stormwater runoff and riparian habitat on Metro properties throughout Metro. Below are some 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 271,800 dog waste bags were estimated as being used at Metro Parks properties. Based on the amount of dog waste bags distributed, it is estimated that approximately 81,540 pounds (40.77 tons) of dog waste were collected for proper disposal.
    - Tree Planting Projects:
        a) England Park (30 trees)
        b) Flora Wilson Park (5 trees)
        c) Richland Park (40 trees)
        d) Alabama Avenue (15 trees)
        e) Centennial Park (20 trees)
        f) Lakewood Sport's Field Complex (20 trees)
        g) Morgan Park (15 trees)
        h) Hadley Park (30 trees)
        i) Cleveland Park (15 trees)
        j) Downtown Streets in Tree Wells (8 trees)
        k) Demonbreum Street (12 trees)
    - Other Parks Department Projects:
        a) Opening of England Park: 9.59 Acres of floodplain buyout property converted to playground and walking trails.
        b) Wimpole Community Garden: 21.23 acres of flood buyout property. Operated as an organic community garden by local nonprofit group – Hands on Nashville.
        c) Completion of Cumberland Park: 4 Acres of previously industrial land converted to a water play park with an amphitheater, native plantings, and stormwater quality educational signage.
        d) Conservation and transfer to the Parks Department of approximately 10 acres of property obtained by Metro Government due to "back taxes".

e) Little Harpeth River in Edwin Warner Park – Stream Bank Improvements: Through a partnership with the Harpeth River Watershed Association, Metro Parks, Hands on Nashville, and Friends of Warner Parks, the initial part of this project has been completed. The project involved 2 workdays where volunteers constructed and installed cedar revetments into the eroding bank adjacent to Shelter #10. Approximately 20 revetments were installed. This project will continue with the installation of a fence to limit foot traffic on the site, and will also include planting native trees and shrubs in the area this fall and winter.

f) Bells Bend Park Wetland Mitigation Site: The Metropolitan Board of Parks and Recreation continued working closely in FY12 with the Friends of Bells Bend Park (FOBBP), TDEC, the Tennessee Department of Transportation (TDOT), the Metro Nashville Airport Authority (MNAA), the Tennessee Wildlife Resources Agency (TWRA), local ornithologists, and others on proposed wetlands enhancements and shorebird ponds at Bells Bend Park. Design documents have been prepared by Littlejohn Engineering Associates for approximately 14 acres of passive wetlands, funded by wetlands mitigation collaborations with MNAA and TDOT. Construction of the passive wetlands is expected in the fall of 2012. Metro Parks has also been working with FOBBP on proposed shorebird ponds in the same general area of Bells Bend Park, expected to total approximately 20 additional acres. An application for grant funding for the project has been submitted to the Maddox Foundation. The passive wetlands and shorebird ponds will have a positive impact on water quality, wildlife habitat & observation, environmental education programs, and public enjoyment of Bells Bend Park.

g) Metro Parks Nature Centers have presented educational programming related to storm water management, water quality, riparian buffer zones, etc to an estimated 750 people through topic-dedicated public programming such as rain garden workshops, eco-friendly hard-scaping workshops, earth day festival exhibit & programming and more. Approximately 1000 students have experienced similar programming through field trips to the four nature centers, including AP Environmental Science high school students and kindergartners alike. And using an exceptionally conservative 10% of the total visitation to the four nature centers, an additional estimated 6,000 people have been impacted through our water-related exhibits, literature, signage, and speaking with naturalists and volunteers at the centers. Other ways the nature centers and the natural resources BU work to reach the public about water quality and management is through an informative website, Facebook and podcasts, though numbers for these are not available. In addition, a rain garden, rain chains with cisterns, and a green roof are permanent features at Shelby Bottoms Nature Center while pervious pavement is in use at three centers and a pervious pavement demonstration is on display at Beaman Park Nature Center. Over 500 trees have been planted in these parks and 135 acres of open space has been added to Shelby Bottoms, which lies within the floodplain.

2. Metro Nashville's Planning Department has played a key role in ensuring future development within Metro Nashville is conducted in a stormwater-friendly approach. The 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 guiding 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 site location, while avoiding sensitive environmental features. Addressing site location protects water quality by promoting the use of best management practices (BMPs) in stormwater and wastewater management. In addition, the Community Character Manual includes objectives

such as encouraging green infrastructure, minimizing and/or recovering floodplain loss, and retaining natural stream buffers.

In early 2012, the Planning Department amended the Community Character Manual to include a section of general principles for Healthy Community Design. This section 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. In January of 2012, the recent community plan update for the Bellevue area was finalized. Special land use policies have been included to address conservation of sensitive floodplain land and stormwater management, including Low Impact Development techniques and floodplain remediation of previously developed sites. As part of this plan update process, the Planning Department worked with Metro Stormwater to include additional Low Impact Development techniques for stormwater management and to create a comprehensive open space network that provides recreation, transportation, and stormwater management benefits for the community while also providing protection for tree cover, steep slopes, wetlands and floodplain areas. For the Bellevue area, emphasizing the protection of environmental features, was significant since sensitive environmental features cover 28,534 acres of the area (63 percent). In addition, during the plan update process, the Planning Department worked with Bellevue area developers on site plan revisions to better protect headwater areas, including steep slopes and tree cover, and floodplain areas.

During the first half of 2012, the Planning Department began updating the Antioch-Priest Lake Community Plan and applying the same stormwater management principles utilized in the recent update of the Bellevue Community Plan. 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 the protection of headwater areas, for wildlife habitat, and for water management in flood-prone areas.

3. The MWS Divisions overseeing the sanitary sewer systems have also worked diligently to minimize the volume of unintentional discharges of sanitary sewer to the MS4 and community waterways. The MWS Engineering Division and the Overflow Abatement Program (OAP) have been involved 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:
    - Washington CSO Regulator - Construction of a new combined sewer regulator at the terminus of the Washington CSS began during FY11, which became completely operational in April of 2012. This new facility will dramatically reduce the frequency, duration, and volumes of CSS overflows to the Cumberland River, at a project cost of $16,968,500.
    - Closure of the 1st & Broadway and the Van Buren CSS Outfalls - Construction was performed during FY12 to close the outfalls from these two combined sewer regulators, after modeling confirmed that minor modifications to those structures could eliminate the need for overflows during storm events. The elimination of these CSS discharges was performed at a cost of $175,000.
    - Mill Creek 30-inch Sewer Rehabilitation - Repairs to a 30-inch trunk sewer in multiple segments to reduce infiltration were performed using conventional point repairs and replacement of pipe segments at a cost of $1,647,486.
    - Whites Creek Waste Water Pumping Station - Construction of a new pumping station to improve reliability and increase pumping capacity was initiated during FY12 at a cost of $19,994,234.

- Driftwood Equalization Basin Improvements - Design was completed in FY12, which will go into construction in FY13, and will add 3 million gallons capacity to the existing 5 million gallon storage facility to further minimize discharges from this CSS system.
- Dodson Chapel Waste Water Pumping Station - Design was completed in FY12 for improvements to the Dodson Chapel pumping station and Equalization Basin. This project, which will go into construction in FY12, will add capacity to the pumping station and provide an additional 11 million gallons of storage to reduce sanitary sewer overflow events at this location.
- West Park Waste Water Pumping Station - Design was initiated in FY12 for Phases 2 & 3 at the West Park WWPS and Equalization Basin. This project will provide additional storage capacity at this site to reduce SSO events.

4. The MWS System Services Division (SSD) has also been very active in performing projects to reduce the impacts of overflows, line breaks, and other discharges of sewage from the SSS and CSS lines to the MS4 and waterways. Included within Attachment A is a report detailing the number of known sanitary sewer discharges during FY12. Below are some project-specific highlights of some of the system improvements performed by MWS SSD:

    - As a continuation of recovery efforts following the Flood of May 2010, Metro Water Services and two contract firms continued to inspect and clean sewers. In FY12 the MWS SSD inspected 1,211,000 feet and cleaned 523,000 feet of sewer line.

    - Through use of innovative technology, a MWS SSD contractor was able to locate debris within the 72 inch First Avenue Tunnel. Removal of this debris has been estimated to increase capacity of the line by 261,000 cubic feet , which should substantially decrease overflow durations and frequencies relating to this line.

    - During FY12, MWS SSD continuously reviewed information from Closed Circuit Television (CCTV) Sewer inspections reports that indicate sewer problems with grease or roots. If appropriate, 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.

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 Road
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 first year of this iteration of permit cycle was from 02/01/12 to 06/30/12 (a five month period). The previous annual report submitted to TDEC covered activities performed from 07/01/10 through 06/30/11, which coincided with Metro government's fiscal year (FY) 2011. This Annual Report covers Metro Nashville's FY12 activities (07/01/11 through 06/30/12), which includes seven months under the old permit cycle and 5 months under the first permit cycle.

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 is attached in Section 4.

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.

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 portion of the Harpeth River in Davidson County is listed as a State Scenic Riverways. 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. Nutrient and pathogen reduction education will be focused on that area. X Yes ☐ 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, NPDES Section personnel coordinated with TDEC to hold a seminar on drilling operations and targeted BMPs to reduce water quality runoff problems. Prior to the workshop, the NPDES Section responded to numerous citizen complaints about slurry runoff from drilling operations. Since the drilling workshop, there have been no instances of drilling slurry complaints and the NPDES Section has actually fielded calls from drillers about appropriate BMPs to deploy at job sites before drilling begins.

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 conducts various public meetings relating to "water/sewer" project prone to draw community interest. NPDES will make an attempt in future annual reports to identify the number of public meetings held by all of the major Metro Departments.

5. Codes and Ordinances Review and Update

A. Is a completed copy of the EPA Water Quality Scorecard submitted with this report? Refer to Table 5A.1 in Section 3. X Yes ☐ No

B. Include status of implementation of code, ordinance and/or policy revisions associated with permanent stormwater management. MWS Stormwater has already implemented a new volume of the Stormwater Management Manual dedicated to promoting the use of Low Impact Development (LID) techniques for post development stormwater management. MWS Stormwater will continue to work with other Departments 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 (Will be developed as part of the SWMP due 8/1/13)
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 142 Grading permits were issued during FY12 and 153 were completed in PY12. 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 5,843 construction related inspections in FY12. 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 6C2 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 FY12 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? Currently, there are 945 outfalls mapped within Metro's Geographic Information System (GIS) database. 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 vastly overstated the number of actual MS4 permitted outfalls. Currently, MWS Stormwater is editing the outfall layer grid by grid with the focus of verifying "actual" MS4 permitted outfalls. MWS Stormwater also regularly updates all infrastructure (pipes, inlets, etc.) into the GIS database. In FY12, approximately 3,996 MS4 features were updated in the GIS database.

D. How many of these outfalls have been screened for dry weather discharges? 58 separate stormwater infrastructure points were screened during the new permit cycle (2/1/12 – 7/1/12). There were an additional 15 stormwater infrastructure points screened during timeframe since the previous annual report and when the new MS4 permit was issued (7/1/12 – 1/31/12). In many cases, the actual field testing was performed at the point dry weather flow within the system was traced coming out of the ground. The field testing of the headwater springs will be used to aid in future field screening analysis. In addition, 25 headwater springs were tested outside of the commercial/industrial field-screening grids for purposes of building a database to compare future field screening results. There were a total of 41 commercial/industrial ¼ mile grids in which at least one point within the stormwater infrastructure was screened during the first permit year of (2-1-12 – 6/30/12).

E. How many of these have been screened more than once? None are required to be screened twice per our new permit.

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.

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 FY12 reporting period of 7/1/12 to 6/30/12 there were 122 total water quality investigations initiated and tracked within the Metro-wide database. Refer to Table 7H.1 In addition there were 29 spill response investigations and 11 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 26 notifications to property owners for failing septic systems. Refer to Table 7H.4.

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 and eliminated.

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

8. Stormwater Management for Municipal Operations

A. Have stormwater pollution prevention plans (or an equivalent plan) been developed for: The NPDES Section is currently in the process of developing a comprehensive Stormwater Management Plan (SWMP). As part of the SWMP. The NPDES Section has already met with 14 separate Metro Agencies to discuss their role in the SWMP development.

All municipal parks, ball fields and other recreational facilities	☐ Yes	X No
All municipal turf grass/landscape management activities	☐ Yes	X No
All municipal vehicle fueling, operation and maintenance activities	☐ Yes	X No
All municipal maintenance yards	☐ Yes	X No
All municipal waste handling and disposal areas	☐ Yes	X No

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

If Yes, at what frequency are inspections conducted? This will be performed during the following permit year with development of the overall Stormwater Management Plan.

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 the stormwater infrastructure maintenance activities. All major maintenance activities will have SOPs developed during development of the overall SWMP development.

D. Do you have a prioritization system for storm sewer system and permanent BMP inspections? X Yes ☐ No (See Attached BMP Inspection/Maintenance Verification Plan)

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 activities performed on MS4 stormwater infrastructure during FY12. 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 FY12.

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

3.2.3 - Illicit discharge detection and elimination X Yes ☐ No

If *Yes*, identify the number of municipal employees trained There are approximately 12 NPDES staff members that have the adequate training to respond to and enforce on illicit discharge investigations. Five employees in particular within the NPDES Section are routinely available to respond to, sample, and follow-up with illicit discharge investigations. Note: In years past, numerous other municipal employees (maintenance workers, etc.) have been trained on identifying illicit discharges and reporting them to the NPDES Section.

3.2.4 - Construction site stormwater runoff control X Yes ☐ No

If *Yes*, identify the number of municipal employees trained There are approximately 12 NPDES staff members that have adequate training (TDEC Level 1 EPSC Workshop) to respond to and inspect stormwater runoff from construction activities. Six of the employees are dedicated solely 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 FY12, there were 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. Three of the engineers were solely 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 It is estimated that over 100 municipal employees or Metro contractors have been trained on good housekeeping measures during previous permit years.

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? During FY12, Metro Nashville put the finishing touches on Volume V 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. 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 devices 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 flow 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.

http://www.nashville.gov/stormwater/regs/index.asp

F. How many development and redevelopment project plans were reviewed for this reporting period? 1,525 plans were submitted to the MWS Development Review Section. 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 FY12.

G. How many development and redevelopment project plans were approved? 1,174 plans were approved during FY12. This number includes initial grading permit submittals, final as built signoffs, etc. Refer to Table 9F for a complete listing. A better reflection of actual new development projects approved for construction would be the number of post-construction inspection and maintenance agreements executed. In FY12, there were approximately 152 BMP maintenance agreements executed.

H. How many permanent stormwater management practices/facilities were inspected? 8 by NPDES staff, 74 by outside vendors for compliance with Metro's BMP Maintenance Program (reporting requirements). Please note that the NPDES Sections's BMP Inspection/Maintenance Plan did not go into effect until after the reporting period of this report.

I. How many were found to have inadequate maintenance? 5 of those inspected by NPDES required maintenance, the 74 inspected by outside vendors reported that maintenance was not required or was completed.

J. Of those, how many were notified and remedied within 30 days? (If window is different than 30 days, please specify) 5 were notified, 4 have been remedied within a timeframe of 35, 38, 151, & 66 days. The final site has developed plans & is beginning work.

K. How many enforcement actions were taken that address inadequate maintenance? All notifications were Notices of Violation

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 152

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 have been closed for years now. The Metro Department of Public Works Division of Solid Waste oversees all closed landfills and 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, 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.

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 an 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 for a listing of all sites stored within the Industrial Monitoring Microsoft Access database.

D. Has the MS4 developed and implemented procedures, including an inspector manual and checklist, for routine inspections of industrial and high risk facilities and activities? 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? Most of the industrial monitoring activity conducted within the first permit year (5 month period) was spent building the existing industrial database and following up with enforcements on previous industrial facilities. A goal of inspecting 25 industrial facilities has been set for year 2 of the permit, which will be a rate to exceed the MS4 permit requirements to inspect sites identified in section 10.B above. X Yes ☐ No

F. Provide a listing of inspections perform during this reporting year: During Permit Year 1 (02/01/12 – 06/30/12) only one formal industrial inspection was performed. Please note that approximately 7 other follow-up/illicit discharge-related inspections were also performed on industrial facilities.

Facility/Activity

Dicaperl Minerals Corp./SIC: 3295

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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.

Action	Construction	Permanent Stormwater Controls	Illicit Discharge	Authority?
Notice of violation	53	5	12	X Yes ☐ No
Administrative Penalties	$12,200	$0	$1,150	X Yes ☐ No
Stop Work Orders	24	#	#	X Yes ☐ No
Civil penalties	#	#	#	☐ Yes X No
Criminal actions	#	#	#	☐ Yes X No
Administrative orders	#	#	#	X Yes ☐ No
Other: Environmental Court Appearances	18	#	2	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 FY12, the NPDES Section, which oversees various MS4 compliance activities operated under a budget of $1.23 million. The overall MWS Stormwater Division's budget, which includes the NPDES program, development and review engineers, and stormwater maintenance was $12.16 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 FY13 budget includes $1.415 million dedicated to the Stormwater NPDES Program, while the overall Stormwater Department is operating under a budget of $13.636 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 79 employees within the overall MWS Stormwater Division. There are 14 vacancies that have been budgeted and will hopefully be filled within FY13, 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 of concern elevated or within loading requirements. Please refer to the attached Table 13A.1 (TMDL Sampling Data) for the complete quarterly sampling results.

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).

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 new 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 5 months, 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. The NPDES Section's Watershed Group collected a total of approximately 1,157 water quality samples and performed visual stream assessments on approximately 45 miles of 303(d)-listed streams.

Indicator	Began Tracking (year)	Frequency	Number of Locations
E. coli (TMDL Sampling)	2010	5 Dry-weather Samples Each Quarter.	47 sites on a rotating basis

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 has just begun a more-consistent monitoring plan as part of the new MS4 permit and TMDL monitoring requirements. This data will hopefully be helpful in performing future analysis on a watershed basis in determining SWMP effectiveness.

In reviewing some of the performance measures over the last 9 years (summarized in Table 13A.2), it becomes obvious to conclude that the overall number of water quality (IDDE) investigations and stormwater-specific enforcements has dramatically declined. This can be contributed to the robust IDDE investigations and public education performed throughout the same period.

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 answer above. 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. During the first permit year, MWS NPDES submitted to and received approval from TDEC to change wet weather sampling outfall locations and ambient/benthic sampling creek rotation schedules. The approved change in the MS4 monitoring program is provided in Section 4.

Changes to replace an ineffective or unfeasible BMP. There are no changes to report during the 1st permit year.

Information (e.g., additional acreage, outfalls, BMPs) on program area expansion based on annexation or newly urbanized areas. Prior to this reporting period: 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 the 1st permit year.

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 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 NPDES Office Manager		12/12/12
Printed Name and Title	Signature	Date

3.0 Required MS4 Reporting Tables

List of Tables

Table 5A.1 – EPA Water Quality Scorecard

1	**Protect Natural Resources (Including Trees) and Open Space**
1.A	
Question:	Are development policies, regulations, and incentives in place to protect natural resource areas and critical habitat?
Goal:	Protect natural resource areas (e.g., forests, prairies) and critical habitat (e.g., conservation corridors, buffer zones, wildlife preserves) from future development.
Why:	Protection of significant tracts of critical lands and wildlife habitat will aid in protecting and improving water quality by increasing infiltration and groundwater recharge, preventing erosion and contamination of ground water and surface water resources, and protecting sources of drinking water.

1.A—Natural Resource Protection	Tools and Policies	Points Available	Points Received or N/A	Points from MWS	Points from Codes	Points from Fire	Points from Health	Points from MDHA	Points from Planning	Points from Public Works
	Adopt Plans/Educate:									
	Identify and map critical natural resource areas (e.g., steep slopes, wildlife habitat, forests, drinking water source areas).	1	1		N/A	N/A	N/A	N/A	1	1
	The local comprehensive plan contains a natural resource protection element with goals calling for preservation of identified critical natural resource areas.	1	1		N/A	N/A	N/A	N/A	1	1
	Identify key natural resource areas for protection in jurisdiction's parks and open space plan.	1	1		1	N/A	N/A	N/A	N/A	1
	Provide assistance to landowners in identifying sensitive natural areas and laying out developments to avoid such areas.	1	1		1	N/A	N/A	N/A	1	
	Local plans establish and enforce areas which are available for development and which lands are a priority for preservation.	1	0.5		N/A	N/A	N/A	N/A	0.5	
	Remove Barriers:									
	Protection of sensitive natural areas and wildlife habitat qualifies for credit towards local open space dedication and set-aside requirements.	1	0		N/A	N/A	N/A	N/A	0	
	Adopt Incentives:									
	Provide financial support to or partner with land trusts to acquire critical natural areas.	1	1		N/A	N/A	N/A	N/A	0	1
	Establish a dedicated source of funding for open space acquisition and management (e.g., bond proceeds, sales tax, etc.).	2	0		N/A	N/A	N/A	N/A	0	
	Adopt a transferable developments rights program to provide an incentive for landowners to preserve sensitive natural lands and wildlife habitat.	1	0.5		N/A	N/A	N/A	N/A	0.5	
	Land use regulations provide for the creation of cluster and conservation subdivision on the periphery of urban growth areas to encourage preservation of intact blocks of sensitive natural areas.	1	1		1	N/A	N/A	N/A	0.5	
	Enact Regulations:									
	Adopt regulations to protect steep slope, hillsides, and other sensitive natural lands (e.g., by limiting development on slopes > 30% or requiring larger lot sizes in sensitive areas).	2	1		1	N/A	N/A	N/A	1	
	Adopt wildlife habitat protection regulations aimed at preserving large contiguous blocks of habitat areas.	2	0		N/A	N/A	N/A	N/A	0	
	Create agriculture/natural resource zoning districts (e.g., minimum lot size of 80 acres and larger) to preserve agricultural areas and forests.	2	0		N/A	N/A	N/A	0	0	
		17	**8**							
			PAGE TOTAL							

Table 5A.1 – EPA Water Quality Scorecard (Continued)

1	**Protect Natural Resources (Including Trees) and Open Space**
1.A.2a	
Question:	Are no-development buffer zones and other protective tools in place around wetlands, riparian areas, and floodplains that improve/protect water quality?
Goal:	Protect critical areas such as wetlands, floodplains, lakes, rivers, and estuaries with a mandatory no-development buffer.
Why:	The use of these practices will reduce pollutant loads and hydrologic alterations to water bodies.

	Tools and Policies	Points Available	Points Received or N/A	Points from MWS	Points from Codes	Points from Fire	Points from Health	Points from MDHA	Points from Planning	Points from Public Works
	Adopt Plans/Educate:									
	Identify and map critical water resource areas.	1	1	1	1	N/A	N/A	N/A	1	
	The local comprehensive plan contains a water quality protection element with goals calling for protection of identified water bodies and other water resource areas such as wetlands.	1	1		N/A	N/A	N/A	N/A	1	
	Identify key critical water resource areas for protection in jurisdiction's parks and open space plan.	1	1		1	N/A	N/A	N/A	N/A	
	Cooperate in developing regional approaches to watershed protection and stormwater management.	1	1		N/A	N/A	N/A	1	1	
	Remove Barriers:									
	Wetlands and other water bodies and buffer areas qualify for credit against local open space dedication/set-aside regulations.	1	0		N/A	N/A	N/A	N/A	0	
	Adopt Incentives:(click here for National examples)									
	Protected water bodies and buffer areas qualify for twice the credit (or more) against open space requirements set by the municipality.	1	0		N/A	N/A	N/A	N/A	0	
	Restoration of degraded riparian/wetland areas qualifies for additional open space credit within the local municipal system.	1	0		N/A	N/A	N/A	N/A	0	
	Transfer of density from protected riparian areas/buffers to upland portions of development sites.	1	1		N/A	N/A	N/A	N/A	1	
	Enact Regulations: (click here for National examples)									
	Riparian and wetland buffer areas required by local land use regulations ·Buffer is at least 50 feet (as measured from the top of bank) · Buffer is at least 100 feet (as measured from the top of bank) = 2 points · Buffer is greater than 100 feet (as measured from the top of bank) = 3 points	1 TO 3	1	~1	N/A	N/A	N/A	N/A	1	
	Critical water resource areas cannot be counted in calculating allowable density on a site (e.g., on a 200-acre site with 50 acres of wetlands, only 150 acres can be used to calculate density under zone district regulations, and only those 150 acres may be developed).	1	1		N/A	N/A	N/A	N/A	1	
	Development in floodplains is prohibited or must demonstrate no adverse impacts upstream and downstream (See resources below for details on "no adverse impact" approach to floodplain management).	2	2	2	1	N/A	N/A	2	2	
	Stormwater quality and quantity performance standards exist for development sites (e.g., restrictions on sedimentation levels, pre/post development flows).	1	1	1	N/A	N/A	N/A	1	N/A	
	Local regulations require restoration of degraded riparian/wetland areas on a development site.	1	0	0	N/A	N/A	N/A	N/A	N/A	
	Compensation for damage to riparian/wetland areas must be on a minimum 2:1 basis on- or off-site.	1	0	0	N/A	N/A	N/A	N/A	N/A	
	Performance standards exist and are well enforced for stormwater discharges to wetlands that protect the hydrologic regimes and limit pollutant loads.	1	0		N/A	N/A	N/A	N/A	N/A	0
		18	**10**							
			PAGE TOTAL							

Table 5A.1 – EPA Water Quality Scorecard (Continued)

1	**Protect Natural Resources (Including Trees) and Open Space**									
1.A.2b										
Question:	Does the community have protection measures for source water protection areas through land use controls and stewardship activities?									
Goal:	Protect source water areas from current or potential sources of contamination.									
Why:	The use of these practices will reduce pollutant loads and hydrologic alterations to water bodies.									
	Tools and Policies	**Points Available**	**Points Received or N/A**	**Points from MWS**	**Points from Codes**	**Points from Fire**	**Points from Health**	**Points from MDHA**	**Points from Planning**	**Points from Public Works**
	Adopt Plans/Educate:									
	Local land use plans identify aquifer recharge/source water areas and recommend protective measures.	1	0		N/A	N/A	N/A	N/A	0	
	Require that all stormwater inlets carry a notice regarding discharge to receiving waters.	1	1	0	1	N/A	N/A	N/A	N/A	
	Map and publish wellhead and aquifer recharge areas to alert developers to potential restrictions.	1	0		N/A	N/A	N/A	N/A	0	
	Adopt Incentives: **(click here for National examples)**									
	Identification of drinking water source protection and aquifer recharge areas with a dedicated funding source in place to purchase and protect such areas.	1	N/A		N/A		N/A	N/A	N/A	
	Protection of critical water source areas qualifies for additional credit towards local open space requirements.	1	0		N/A	N/A	N/A	N/A	0	
	Enact Regulations: **(click here for National examples)**									
	Adopt well-head protection regulations/zones to prevent incompatible development and uses.	1	0		N/A	N/A	N/A	N/A	0	
	Adopt aquifer protection regulations/zones to prevent incompatible development and uses.	2	0		N/A	N/A	N/A	N/A	0	
		8	1							
			PAGE TOTAL							

Table 5A.1 – EPA Water Quality Scorecard (Continued)

1	**Protect Natural Resources (Including Trees) and Open Space**									
1.B.1										
Question:	Does the jurisdiction have adequate open space in both developed and greenfield areas of the community?									
Goal:	Create open space networks throughout a community that serve a dual function of providing recreational areas and assisting in the management of stormwater									
Why:	In addition to providing open space throughout a community as an amenity, such a network can provide large areas that contribute little to stormwater loads and									
	Tools and Policies	**Points Available**	**Points Received or N/A**	**Points from MWS**	**Points from Codes**	**Points from Fire**	**Points from Health**	**Points from MDHA**	**Points from Planning**	**Points from Public Works**
	Adopt Plans/Educate:									
	Adopt a community-wide open space and parks plan.	1	1		1	N/A	N/A	N/A	1	1
	The local comprehensive plan contains an open space/parks element that recognizes the role of open space in sustainable stormwater management.	1	0		N/A	N/A	N/A	N/A	0	
	Remove Barriers:									
	Green infrastructure practices count towards local open space set aside requirements up to 50% of total.	1	0		N/A	N/A	N/A	N/A	0	
	Allow and encourage retrofits of abandoned or underutilized public lands to serve as permanent or temporary open space and green infrastructure sites.	1	N/A		N/A	N/A	N/A	N/A	N/A	
	Adopt Incentives:(click here for National examples)									
	Additional open space credits are eligible for green stormwater management facilities improved/designed for public recreational purposes.	1	0		N/A	N/A	N/A	N/A	0	
	Provide credit against open space impact fees for green roofs.	1	0		N/A	N/A	N/A	N/A	0	
	Adopt neighborhood policies and ordinances that work to create neighborhood—not development site—open space amenities that are within ¼ to ½ mile walking distance from every residence.	1	1		1		N/A	N/A	0.5	
	Adopt an open space impact fee to purchase passive open space that can assist in stormwater management.	1	0		N/A	N/A	N/A	N/A	0	
	Adopt open space dedication and/or set aside requirements based on the demand generated by the development. As a baseline, use the average open space requirements adopted by the National Recreation and Park Assn. (e.g., 10 acres of community and neighborhood parks for every 1,000 persons in a development or fraction thereof).	1	0		N/A	N/A	N/A	N/A	0	
		9	**2**							
			PAGE TOTAL							

Table 5A.1 – EPA Water Quality Scorecard (Continued)

1	**Protect Natural Resources (Including Trees) and Open Space**									
1.C.1										
Question:	Does the local government have a comprehensive public urban forestry program?									
Goal:	Protect and maintain trees on public property and rights-of-way and plant additional trees to enhance the urban tree canopy.									
Why:	Mature trees provide multiple community benefits, reduce overall stormwater runoff, and improve stormwater quality.									
	Tools and Policies	**Points Available**	**Points Received or N/A**	**Points from MWS**	**Points from Codes**	**Points from Fire**	**Points from Health**	**Points from MDHA**	**Points from Planning**	**Points from Public Works**
	Adopt Plans/Educate:									
	Survey and inventory existing trees on public lands and street rights-of-way. Document the characteristics and location of street trees and urban tree canopy to inform public tree planting, adoption, and maintenance programs.	1	1	partial	1		N/A	N/A	1	1
	Select tree species based on known performance for managing stormwater runoff. Publish list and make widely available for homeowners/others that plant street trees.	1	1	0	N/A		N/A	N/A	N/A	1
	Conduct education and outreach about tree protection, proper maintenance, and replanting opportunities through printed materials, workshops, events, and signage.	1	1	partial	N/A		N/A	N/A	N/A	1
	Adopt a policy to protect existing trees on local government development sites (e.g., municipal parking lots, municipal buildings).	1	0	0	1		N/A	N/A	0	
	Maintain an active tree maintenance program for public trees, including pest control, pruning, watering, and similar measures.	1	0	0	1		N/A	N/A	N/A	
	Remove Barriers:									
	Acknowledge trees as part of community infrastructure and develop a coordinated design for locating public utilities to provide enough space for mature tree canopy and root development.	1	0	0	1	N/A	N/A	0	N/A	
	Adopt Incentives:(click here for National examples)									
	Provide free or reduced-price trees to homeowners to be used as street trees.	1	1	0	N/A	N/A	N/A	N/A	N/A	1
	Enact Regulations: (click here for National examples)									
	Require any public trees removed or damaged during construction associated with private development to be replaced on- or off-site with an equivalent amount of tree caliper (e.g., remove a 24-inch diameter tree/replace with 6 four-inch diameter trees).	1	0	0	1	N/A	N/A	N/A	0	
	Adopt construction protection rules for all public trees (e.g., fencing, no storage of hazardous materials, avoid cutting into root zones).	1	1		1	N/A	N/A	N/A	1	
		9	**5**							
			PAGE TOTAL							

Table 5A.1 – EPA Water Quality Scorecard (Continued)

1	**Protect Natural Resources (Including Trees) and Open Space**									
1.C.2										
Question:	Has the community taken steps to protect trees on private property?									
Goal:	Preserve trees on private property and require replacement when trees are removed or damaged during development.									
Why:	Mature trees provide multiple environmental, economic, and community benefits, including improved water and air quality, reduced heat island effects, lowered									
	Tools and Policies	**Points Available**	**Points Received or N/A**	**Points from MWS**	**Points from Codes**	**Points from Fire**	**Points from Health**	**Points from MDHA**	**Points from Planning**	**Points from Public Works**
	Adopt Plans/Educate:									
	Community plans specifically include tree preservation and replacement as community goals.	1	1		N/A		N/A	N/A	1	1
	Conduct educational sessions for builders and developers regarding appropriate tree protection techniques and/or publish a technical tree protection manual.	1	1		1		N/A	N/A	N/A	
	Follow maintenance and inspection timelines and meet canopy goals and milestones by ensuring old trees survive, replacing dead or diseased trees, and planting new trees.	1	N/A		N/A		N/A	N/A	N/A	
	Remove Barriers:									
	Set up maintenance and inspection agreements for private properties meeting stormwater requirements or receiving stormwater fee credit for trees.	1	0	0	N/A		N/A	N/A	N/A	
	Set up long-term maintenance and inspection schedules for trees on public lands.	1	0		1		N/A	N/A	N/A	
	Adopt Incentives: **(click here for National examples)**									
	Support local non-profits that plant trees and provide educational services.	1	1		N/A		N/A	N/A	N/A	1
	Provide financial incentives for tree purchases and planting.	1	1		N/A		N/A	N/A	N/A	1
	A tree fund has been established to receive in-lieu payments when trees must be removed from a development site to accommodate permitted projects.	1	1		1		N/A	N/A	1	
	Trees of a specified minimum size count towards a percentage of stormwater management requirements (e.g., partial credit given for each mature tree exceeding a specified height or canopy size).	1	0	0	N/A		N/A	N/A	N/A	
	Trees over a specified minimum size (e.g., 3-inch caliper) protected during development are credited towards landscaping requirements. ·meeting the established landscape requirement = 1 point ·exceeding the established landscape requirement = 2 points	1 TO 2	1	?	1	N/A	N/A	N/A	1	
	Enact Regulations: **(click here for National examples)**									
	Require permits before removing trees on proposed development or redevelopment sites. Provide fines and/or stop-work authority for permit violations.	1	1		1	N/A	N/A	N/A	0.5	
	Set minimum tree preservation standards for new development sites.	1	0	0	1	N/A	N/A	N/A	0	
	Require site plans or stormwater plans to include tree preservation.	1	1	1	1	N/A	N/A	N/A	0	
	Require/allow tree replacement off-site for infill sites.	1	0.5		N/A	N/A	N/A	N/A	0.5	
		15	**8.5**							
			PAGE TOTAL							

Table 5A.1 – EPA Water Quality Scorecard (Continued)

1	**Protect Natural Resources (Including Trees) and Open Space**									
1.C.3										
Question:	Are street trees encouraged or required as part of road and public right-of-way capital improvement projects?									
Goal:	Leverage existing capital funds to plant more street trees and add multiple benefits to the public right-of-way.									
Why:	Street trees can help manage and reduce stormwater runoff while providing multiple public and environmental benefits.									
	Tools and Policies	**Points Available**	**Points Received or N/A**	**Points from MWS**	**Points from Codes**	**Points from Fire**	**Points from Health**	**Points from MDHA**	**Points from Planning**	**Points from Public Works**
	Adopt Plans/Educate:									
	Local comprehensive and transportation plans support the planting of street trees by all private and public development projects.	1	1		N/A		N/A	N/A	1	
	Capital improvement plans include tree planning as part of project budgets.	1	1		N/A		N/A	N/A	N/A	1
	Adopt Incentives: **(click here for National examples)**									
	Offer incentives, such as reduced setbacks or increased building densities, in exchange for additional tree preservation beyond ordinance requirements.	1	0		N/A		N/A	N/A	0	
	Enact Regulations: **(click here for National examples)**									
	All private and public developments are required to plant street trees in accordance with size, spacing, and other local government requirements.	1	1		1	N/A	N/A	1	0	
	New street designs and redesigns of existing streets take into account space for tree development and require necessary surface area and volume of soil dependent on type of tree species selected (this includes lateral root growth as well as direct downward growth to accommodate mature tree canopy and roots without adversely affecting other utilities).	1	1		1	N/A	N/A	N/A	1	1
	Street specifications require permeable paving for sidewalks and other surfaces to reduce stormwater runoff and allow street trees to benefit from the available water.	1	0	0	N/A		N/A	0	N/A	0.5
		6	**4**							
			PAGE TOTAL							

Table 5A.1 – EPA Water Quality Scorecard (Continued)

2	**Promote Efficient, Compact Development Patterns and Infill**									
2.A.1										
Question:	Are policy incentives in place to direct development to previously developed areas?									
Goal:	Municipalities implement a range of policies and tools to direct development to specific areas.									
Why:	Municipalities can realize a significant reduction in regional runoff if they take advantage of underused properties, such as infill, brownfield, or greyfield sites.									
	Tools and Policies	**Points Available**	**Points Received or N/A**	**Points from MWS**	**Points from Codes**	**Points from Fire**	**Points from Health**	**Points from MDHA**	**Points from Planning**	**Points from Public Works**
	Adopt Plans/Educate:									
	Local plans identify potential brownfield and greyfield sites, and support their redevelopment.	1	1		N/A	N/A	N/A	1	0.5	
	Capital improvement plans include infrastructure improvements (water, sewer, road, sidewalk, etc. upgrades) for identified brownfield and greyfield sites.	1	0.5		N/A		N/A	N/A	0.5	
	Educate lending and financial institutions about benefits and local priorities of directing development to existing areas.	1	0		N/A	N/A	N/A	0	N/A	
	Conduct outreach to the community to ensure support for local forms and patterns of development.	1	1		1	N/A	N/A	N/A	1	
	Remove Barriers:									
	Establish a brownfields program to remove uncertainty regarding cleanup and liability issues.	1	1		N/A	N/A	N/A	1	N/A	
	Adopt Incentives: **(click here for National examples)**									
	Provide incentives such as density bonuses and accelerated permitting for brownfield and greyfield sites.	1	0.5		N/A	N/A	N/A	N/A	0.5	
	Adopt funding mechanisms for remediating/redeveloping brownfield and greyfield sites.	1	1		N/A	N/A	N/A	1	N/A	
	Streamline permitting procedures to facilitate infill and brownfield redevelopment plan review.	1	0.5		N/A		N/A	N/A	0.5	
	Establish tax increment financing (TIF) districts to encourage redevelopment.	1	1		N/A	N/A	N/A	1	1	
	Enact Regulations: **(click here for National examples)**									
	In local codes, ordinances, and policies, the municipality differentiates between greenfield and infill development.	1	1		N/A	N/A	N/A	N/A	1	
	New street designs and redesigns of existing streets take into account space for tree development and require necessary surface area and volume of soil dependent on type of tree species selected (this includes lateral root growth as well as direct downwar	1	1		1	N/A	N/A	N/A	0.5	1
	Street specifications require permeable paving for sidewalks and other surfaces to reduce stormwater runoff and allow street trees to benefit from the available water.	1	0		N/A		N/A	N/A	0	0.5
		12	**8.5**							
			PAGE TOTAL							

Table 5A.1 – EPA Water Quality Scorecard (Continued)

2	**Promote Efficient, Compact Development Patterns and Infill**									
2.B.1										
Question:	Is growth directed to areas with existing infrastructure, such as sewer, water, and roads?									
Goal:	Adopt policies, incentives, and regulations to direct new development to areas that have infrastructure, such as water and sewer. However, in situations where									
Why:	Sewer and water authorities can play a major role in directing a region's growth by determining when and where new infrastructure investment will occur. Well-									
	Tools and Policies	**Points Available**	**Points Received or N/A**	**Points from MWS**	**Points from Codes**	**Points from Fire**	**Points from Health**	**Points from MDHA**	**Points from Planning**	**Points from Public Works**
	Adopt Plans/Educate:									
	Local plans recommend/establish urban growth areas and urban growth boundaries. Development is encouraged within urban growth boundaries and discouraged outside of them.	1	1		N/A		N/A	N/A	1	
	Analyze which areas within the jurisdiction are appropriate for higher density development based on existing infrastructure capacity, cost of providing new services, and access.	2	2		1		N/A	N/A	2	
	Capital improvement plans for public infrastructure (roads, water, sewer, etc.) target funding inside urban growth boundary.	2	2	2	1		N/A	N/A	N/A	
	Local sewer/water authority capital improvement plans follow development policies established in local comprehensive plans and target areas with existing development/infrastructure.	1	1	1	1		N/A	N/A	N/A	
	Remove Barriers:									
	Development standards addressing landscaping, buffering, parking, and open space are tailored for infill areas to avoid creating unnecessary hurdles to development (e.g., imposing suburban parking requirements in high-density infill areas).	2	1		1		N/A	2	1	
	Remove prohibitions on accessory dwelling units in infill areas to increase density of development.	2	1		1		N/A	2	0	
	Off-site, regional water retention/detention encouraged/allowed to avoid costly on-site retention in densely developed infill areas and to provide benefit to priority retrofit sites, such as schools.	2	0	0	N/A		N/A	N/A	N/A	
	Package plants and other wastewater treatment trains are encouraged for development in limited circumstance areas where growth is appropriate but sewers/treatment capacity does not exist.	1	1	1	1		0	N/A	N/A	
	Technical information and analysis on the effectiveness of various treatment systems are readily available to developers. Local governments have completed the research and have determined which systems work best for their soil conditions and topography and have made this information available to the development community.	1	1		1		0	N/A	N/A	
	Allow a wide variety of housing types and sizes within infill areas and reduced minimum lot sizes.	1	1		N/A		N/A	1	0.5	
	Adopt Incentives: **(click here for National examples)**									
	Increase development densities and allowable height in infill areas.	1	1		N/A	N/A	N/A	1	1	
	Reduce impact fees for infill development based on less demand for new infrastructure.	1	N/A		N/A	N/A	N/A	N/A	N/A	
	Create development incentives for green roofs (e.g., increased floor area ratio (FAR) bonus, additional building height, etc.).	1	1		N/A	N/A	N/A	1	0.5	
	Include provision in stormwater management requirement that reduces on site management requirements for projects that decrease total imperviousness on previously developed sites.	1	0	0	N/A	N/A	N/A	N/A	N/A	
	Enact Regulations: **(click here for National examples)**									
	Zoning and land development regulations implement urban service areas/urban growth boundary policies by restricting development in outlying areas.	1	0		N/A	N/A	N/A	N/A	0	
	Adopt adequate public facility and concurrency ordinances that require adequate public infrastructure to be available when development comes on line (e.g., water, sewer, roads).	1	1	1	N/A		N/A	N/A	0	
	Adopt large-lot/agricultural zoning (e.g., 1 unit/160 acres) on fringe of city to restrict inappropriate greenfield development.	1	0		N/A	N/A	N/A	N/A	0	
	Enact transitional compatibility standards to ensure that new denser infill development is compatible with existing neighborhoods/adjacent development.	1	1		1	N/A	N/A	1	0.5	
		23	**15**							
			PAGE TOTAL							

Table 5A.1 – EPA Water Quality Scorecard (Continued)

2	**Promote Efficient, Compact Development Patterns and Infill**									
2.C.1										
Question:	Are mixed use and transit-oriented developments allowed? Encouraged?									
Goal:	Revise codes and ordinances to allow for the "by right" building of mixed-use and transit-oriented developments.									
Why:	Mixed use developments allow for the co-locating of land uses, which decreases impervious surfaces associated with parking and also decreases vehicle miles									
	Tools and Policies	**Points Available**	**Points Received or N/A**	**Points from MWS**	**Points from Codes**	**Points from Fire**	**Points from Health**	**Points from MDHA**	**Points from Planning**	**Points from Public Works**
	Adopt Plans/Educate:									
	Comprehensive plans identify appropriate areas for higher-density mixed-use developments (e.g., at transit stops) and recommend policies to encourage their development.	1	1		1	N/A	N/A	N/A	1	
	Local capital improvement plans and funding are targeted to areas appropriate for mixed-use development.	2	0	0	N/A	N/A	N/A	N/A	N/A	
	Remove Barriers:									
	Zoning ordinances are amended to create by-right mixed-use and transit-oriented development districts or overlays.	1	1		1	N/A	N/A	N/A	1	
	Initiate map amendments to designate mixed-use and transit-oriented development areas, eliminating the need for developers to secure zoning amendments.	1	1		N/A	N/A	N/A	1	1	
	Adopt Incentives: **(click here for National examples)**									
	Parking requirements are reduced to reflect decreased automobile use.	1	1		N/A	N/A	N/A	N/A	1	
	Credit given for adjacent on-street parking, which can count for local parking requirements.	1	1		1	N/A	N/A	N/A	1	
	Shared parking and alternative parking arrangements encouraged.	1	1		N/A	N/A	N/A	N/A	1	
	Mixed-use districts/areas feature increased densities and height.	1	1		N/A	N/A	N/A	1	0.5	
	Accessory parking structures are not counted against maximum floor area ratio (FAR) on a site.	1	1		N/A	N/A	N/A	N/A	1	
	Enact Regulations: **(click here for National examples)**									
	Zoning code requires a minimum mix of uses and minimum density in designated mixed-use and transit-oriented development areas.	1	0		1	N/A	N/A	N/A	0	
	Auto-oriented uses and drive-throughs are restricted or prohibited in mixed-use and transit-oriented development areas.	1	1		N/A	N/A	N/A	1	0.2	
		12	**9**							
			PAGE TOTAL							

Table 5A.1 – EPA Water Quality Scorecard (Continued)

3	Design Complete, Smart Streets That Reduce Overall Imperviousness									
3.A.1										
Question:	Do local street design standards and engineering practices encourage streets to be no wider than necessary to effectively move traffic? Do street designs vary									
Goal:	Appropriate street widths allow narrower lanes for certain street types, thereby reducing overall imperviousness.									
Why:	The width of travel lanes, parking lanes and sidewalks should be tailored to the urban setting. Where appropriate, narrowing travel lane width to 10-11 feet, rather than									
	Tools and Policies	**Points Available**	**Points Received or N/A**	**Points from MWS**	**Points from Codes**	**Points from Fire**	**Points from Health**	**Points from MDHA**	**Points from Planning**	**Points from Public Works**
	Adopt Plans/Educate:									
	Comprehensive plan/transportation plan emphasizes alternative modes of transportation (walking, biking, transit) to reduce vehicle miles traveled and width and prominence of roads/streets.	1	1		N/A		N/A	N/A	1	
	Comprehensive/transportation plan calls for distributing traffic across several parallel streets, reducing the need for high capacity streets with wide rights-of-way.	1	1		N/A		N/A	N/A	1	
	Comprehensive/transportation planning process brings emergency response and other local government departments (e.g., public works, utilities) to the table early in the process to discuss street design.	1	1		1		N/A	N/A	1	
	Adopt formal bicycle/pedestrian master plan.	1	1		1	N/A	N/A	N/A	1	1
	Create "safe routes to school" programs or other pedestrian/bike safety initiatives.	1	1		N/A	N/A	N/A	N/A	1	1
	Make consistent improvements to walking/biking conditions or develop a formal bicycle/pedestrian master plan.	1	1		1	N/A	N/A	N/A	1	1
	Remove Barriers:									
	Comprehensive plan endorses context-sensitive street design with narrower streets in appropriate locations.	1	1		1		N/A	N/A	1	1
	Improve pedestrian crossing at intersections to encourage walking.	1	1		N/A	N/A	N/A	1	1	1
	Consolidate utilities in street right-of-way to improve sidewalk design and function.	1	1		N/A	N/A	N/A	1	0	1
	Negotiate with state department of transporation or county transportation department to allow different design standards for regional roads passing through downtowns or other key areas.	1	1		N/A		N/A	N/A	1	1
	Promote street standards for fire safety that include attributes of narrow streets (20 feet widths) while identifying factors relevant to local government departments involved with streets such as public works, engineering and utilities.	2	1		N/A		N/A	N/A	0	2
	Take formal control of state or county roads within city boundaries to ensure power over design and operations.	2	2		N/A		N/A	N/A	0	2
	Adopt Incentives: (click here for National examples)									
	Developments that provide comprehensive pedestrian/bicycle circulation systems allowed to reduce number of vehicle parking spaces. (See parking section below for greater detail.)	1	1		N/A	N/A	N/A	1	0	1
	Developments with approved comprehensive mobility/transportation plans allowed to build narrower, less costly streets and alleys.	1	1		N/A		N/A	N/A	0	1
	Enact Regulations: (click here for National examples)									
	Revamp local government technical street specifications to allow context-sensitive, innovative street design with narrower travel lanes, without curb and gutter, etc., in appropriate circumstances (See Institute of Transportation Engineers Recommended Practice document below).	2	2		1		N/A	N/A	0	2
	Design standards for narrower neighborhood streets have been endorsed/adopted by emergency response professionals and other local government departments involved with streets such as public works, engineering, and utilities.	1	1		N/A		N/A	N/A	0	1
	Emergency response professionals and other local government departments involved with streets (e.g. public works, engineering, utilities) have endorsed or adopted design standards for narrower neighborhood streets.	1	1		N/A		1	N/A	?	1
	Development review process involves emergency response early on to reach consensus on appropriate project street design and access.	1	1		1		N/A	N/A	1	1
	Development review process requires submittal of project pedestrian/bicycle circulation plans with safe street routes and other pedestrian/bicycle-friendly features in addition to traffic circulation plans for larger developments.	1	1		1		N/A	N/A	1	1
	Apply formal connectivity index[7] or other measures to ensure adequate internal street and pedestrian/bicycle connections.	2	1		N/A		N/A	N/A	0	2
	Zoning/subdivision regulations require minimum number of connections between new project and surrounding developments and neighborhoods.	2	0		N/A		N/A		0	
		26	**22**							
			PAGE TOTAL							

Table 5A.1 – EPA Water Quality Scorecard (Continued)

3	Design Complete, Smart Streets That Reduce Overall Imperviousness									
3.A.2										
Question:	Are shared driveways, reduced driveway widths, two-track driveways, and rear garages and alleys encouraged for all single-family developments?									
Goal:	Encourage alternative forms and decreased dimensions of residential driveways and parking areas.									
Why:	Off-street parking and driveways contribute significantly to the impervious areas on a residential lot. Reducing such dimensions can minimize the amount of									
	Tools and Policies	**Points Available**	**Points Received or N/A**	**Points from MWS**	**Points from Codes**	**Points from Fire**	**Points from Health**	**Points from MDHA**	**Points from Planning**	**Points from Public Works**
	Remove Barriers:									
	Allow developments that utilize shared driveways and rear-loaded garages to permit overnight parking in driveways and on-street.	1	1		N/A		N/A	N/A	1	0.5
	Development code prohibits homeowner covenants forbidding overnight parking in driveways, on-street overnight parking and shared driveways.	1	0		N/A		N/A	N/A	0	
	Adopt Incentives: **(click here for National examples)**									
	Allow developments with narrow driveways and rear-loaded garages to reduce number of parking spaces for guests.	1	1		1	N/A	N/A	N/A	0	
	Zoning/subdivision regulations require minimum number of connections between new project and surrounding developments and neighborhoods.	1	0		N/A		N/A	N/A	0	
	Enact Regulations: **(click here for National examples)**									
	Shared driveways are permitted or required for single-family residential developments.	1	1		N/A	N/A	N/A	N/A	1	
	Minimum widths for single-family driveways reduced to 9 feet.	1	0		N/A		N/A	N/A	0	
	Two-track driveways allowed by technical street/subdivision specifications.	1	1		N/A	N/A	N/A	N/A	1	
	• Single-family residential developments encouraged/required to be designed with minimum percentage of alley-accessible, rear-loading garages. --Alleys/garages encouraged = 1 points --Alleys/garages required = 2 points	1 to 2 points	1		N/A	N/A	N/A	N/A	1	
		9	**5**							
			PAGE TOTAL							

Table 5A.1 – EPA Water Quality Scorecard (Continued)

3	Design Complete, Smart Streets That Reduce Overall Imperviousness									
3.B.1										
Question:	Are major street projects required to integrate green infrastructure practices as a standard part of construction, maintenance, and improvement plans?									
Goal:	Formally integrate green infrastructure into standard roadway construction and retrofit practice.									
Why:	Consistent projects to improve or repair streets provide opportunities to include green infrastructure retrofits as part of larger project budget, design and construction.									
	Tools and Policies	**Points Available**	**Points Received or N/A**	**Points from MWS**	**Points from Codes**	**Points from Fire**	**Points from Health**	**Points from MDHA**	**Points from Planning**	**Points from Public Works**
	Adopt Plans/Educate:									
	Comprehensive/transportation plans promote green infrastructure practices in street design.	1	1		1	N/A	N/A	N/A	1	
	Street project cost estimates include green infrastructure designs and assess cost savings from reduced hard infrastructure.	1	1		1	N/A	N/A	N/A	N/A	1
	Remove Barriers:									
	Technical street specifications allow/require integration of green infrastructure elements into street project construction.	1	1		1		N/A	N/A	N/A	1
	Allow street-side swales to replace conventional curb and gutter for managing stormwater and for separating sidewalks from street traffic in appropriate circumstances.	1	1		N/A	N/A	N/A	N/A	0.5	1
	Adopt Incentives: (click here for National examples)									
	Undertake consistent effort to secure state and federal funds (e.g. transportation enhancements) to pay for green infrastructure elements.	1	1		1	N/A	N/A	N/A	N/A	
	Streets with green infrastructure count towards stormwater requirements.	1	1	1	N/A	N/A	N/A	N/A	N/A	
	Enact Regulations: (click here for National examples)									
	Adopt green infrastructure retrofit standards for major street projects.	1	1		N/A		N/A	N/A	N/A	1
	Adopt technical specifications and design templates for green infrastructure in private and public rights-of-way.	1	1		N/A		N/A	N/A	N/A	1
	All local road projects required to allocate a minimum amount of the total project cost to green infrastructure elements.	1	0.5		N/A	N/A	N/A	N/A	N/A	0.5
		9	8.5							
			PAGE TOTAL							

Table 5A.1 – EPA Water Quality Scorecard (Continued)

3	**Design Complete, Smart Streets That Reduce Overall Imperviousness**
3.B.2	
Question:	Do regulations and policies promote use of pervious materials for all paving areas, including alleys, streets, sidewalks, crosswalks, driveways and parking lots?
Goal:	Build and retrofit these surfaces with pervious materials to reduce stormwater runoff and its negative impacts. Note: While eliminating sidewalks or placing sidewalks
Why:	Streets, sidewalks, and other hard surfaces contribute a large portion to a municipality's total imperviousness. Making these impervious surfaces more permeable protects water quality, reduces flooding and can recharge groundwater.

	Tools and Policies	Points Available	Points Received or N/A	Points from MWS	Points from Codes	Points from Fire	Points from Health	Points from MDHA	Points from Planning	Points from Public Works
	Adopt Plans/Educate:									
	Sponsor/approve pilot programs to determine appropriate pervious materials for different paving areas (e.g., permeable concrete for sidewalks, permeable pavers for driveways, etc.), as well as process for installation and maintenance.	1	1		1		N/A	N/A	N/A	0.5
	Pilot project results incorporated into standard practice for all new paved areas and retrofits of existing paved surfaces.	1	0		1	N/A	N/A	N/A	N/A	0.5
	Adopt policy to replace impervious materials with pervious materials where practical.	1	0		1		0	N/A	N/A	0.5
	Remove Barriers:									
	Technical street specifications allow pervious paving materials in appropriate circumstances (e.g., not allowed over aquifer recharge areas).	1	0		N/A	N/A	0	N/A	N/A	0.5
	Adopt Incentives: (click here for National examples)									
	Create formal program offering incentives (e.g., cost sharing, reduction in street widths/parking requirements, assistance with maintenance) to property owners who utilize pervious pavement elements.	1	0.5		N/A	N/A	N/A	N/A	0.5	N/A
	Enact Regulations: (click here for National examples)									
	Adopt requirement that some percentage of parking lots, alleys, or roads in a development utilize pervious materials.	1	0		N/A		N/A	N/A	0	N/A
	Development approvals that allow/require use of pervious materials include requirements for continuing maintenance/cleaning of pervious surfaces.	1	1	1	N/A	N/A	N/A	N/A	0	
		7	**2.5**							
			PAGE TOTAL							

Table 5A.1 – EPA Water Quality Scorecard (Continued)

4	**Encourage Efficient Parking**									
4.A.1										
Question:	Does your local government provide flexibility regarding alternative parking requirements (e.g., shared parking, off-site parking) and discourage over-parking of developments? Do parking requirements vary by zone to reflect places where more trips are made on foot or by transit?									
Goal:	Match parking requirements to the level of demand and allow flexible arrangements to meet parking standards.									
Why:	Inflexible parking requirements that do not allow for alternative approaches, as well as standards that require too much parking for specific uses increase the amount of impervious surface in a development. Over-parking a development also encourages greater vehicle use and detracts from the overall pedestrian environment.									
	Tools and Policies	**Points Available**	**Points Received or N/A**	**Points from MWS**	**Points from Codes**	**Points from Fire**	**Points from Health**	**Points from MDHA**	**Points from Planning**	**Points from Public Works**
	Adopt Plans/Educate:									
	The comprehensive plan recognizes the advantages to reduced parking requirements generally and specifically for mixed-use and transit-oriented developments.	1	1		1	N/A	N/A	N/A	0.5	
	The comprehensive plan recommends alternative, flexible approaches to meeting parking demands (e.g., shared parking, counting on-street spaces towards site parking requirements, etc.)	1	1		1	N/A	N/A	N/A	0.5	1
	Comprehensive/bicycle plans recommend provision of bicycle parking spaces/storage lockers and concomitant reduction in vehicle parking space requirements.	1	0.5		N/A	N/A	N/A	N/A	N/A	0.5
	Remove Barriers:									
	Allow flexibility in meeting parking space requirements through shared parking, off-site parking, and similar approaches.	1	1		1	N/A	N/A	1	1	1
	Permit businesses with different peak demand periods to share their required parking spaces.	1	1		N/A	N/A	N/A	1	1	
	Adopt Incentives: (click here for National examples)									
	Permit reduction in vehicle parking spaces when minimum number of bicycle parking spaces is provided.	1	0		N/A	N/A	N/A	N/A	0	
	Allow by-right reduction in required parking spaces (e.g., 25%) in mixed-use and transit-oriented developments and districts.	1	1		N/A	N/A	N/A	N/A	1	1
	Permit developers to undertake parking studies to establish that specific developments (e.g., senior housing, affordable housing) require fewer parking spaces than typical projects.	1	1		1	N/A	N/A	N/A	N/A	1
	Create parking districts to finance/construct centralized parking lots/structures to be utilized as shared parking facilities and reduce on-site parking.	1	0		N/A	N/A	N/A	N/A	0	1
	Enact Regulations: (click here for National examples)									
	Revise parking regulations to reduce minimums below standard ITE (Institute of Transportation Engineers) requirements based on analysis of local developments and actual parking demand/experience.	2	0		N/A	N/A	N/A	N/A	0	
	Charge developers for every space beyond parking minimums to offset environmental impacts.	1	0		N/A	N/A	N/A	N/A	0	
	Enact parking standards that allow credit for adjacent on-street parking.	1	0.5		N/A	N/A	N/A	N/A	0.5	
	Create zones with reduced parking requirements (e.g. transit overlay districts, mixed-use activity centers, multi-modal districts).	1	1		1	N/A	N/A	N/A	0	
	Waive all parking minimums in downtown and other locations that are pedestrian-oriented and/or have good transit access.	1	1		1	N/A	N/A	N/A	1	1
	Adopt parking standards that reduce requirements based on sliding scale tied to degree of walkablity/transit access locations (20% reduction in areas well served by bus, 30% reduction in areas served by rail stations).	1	0		N/A	N/A	N/A	N/A	0	
	Require shared parking agreements where appropriate complementary uses exist.	1	0		N/A	N/A	N/A	N/A	0	
	Adopt maximum parking caps (e.g., 125% above minimum) for multi-family and commercial developments.	2	0		N/A	N/A	N/A	N/A	0	
	Reduce minimum parking space size based on analysis of average vehicle size in jurisdiction.	1	1		N/A	N/A	N/A	N/A	0	1
		20	**10**							
			PAGE TOTAL							

Table 5A.1 – EPA Water Quality Scorecard (Continued)

4	**Encourage Efficient Parking**
4.B.1	
Question:	Are developers allowed to use alternative measures such as transportation demand management or in-lieu payments to reduce required parking?
Goal:	Provide flexibility to reduce parking in exchange for specific actions that reduce parking demands on site.
Why:	Provide flexibility to reduce parking in exchange for specific actions that reduce parking demands on site.

	Tools and Policies	Points Available	Points Received or N/A	Points from MWS	Points from Codes	Points from Fire	Points from Health	Points from MDHA	Points from Planning	Points from Public Works
	Adopt Plans/Educate:									
	Comprehensive/transportation plans recognize transportation demand management as an approach to reducing vehicle miles traveled and parking requirements.	1	1		N/A	N/A	N/A	N/A	1	
	Remove Barriers:									
	Rather than include parking spaces with an apartment lease, allow tenants to opt-out by treating parking as a separate optional lease agreement.	1	0		N/A	N/A	N/A	N/A	N/A	
	Adopt Incentives: **(click here for National examples)**									
	Allow businesses that offer employee transit passes, provide vans for employee commuting, allow flexible working arrangements, or charge market rates for parking to 1) provide fewer parking spaces or 2) pay less into a parking district fund for required parking spaces.	2	0		N/A	N/A	N/A	N/A	0	
	Allow developers to make in-lieu fee payments for parking. Fees utilized by local government/parking authority to provide off-site parking lots/structures.	1	0		N/A	N/A	N/A	N/A	0	
	Provide mechanisms for car sharing in transit oriented development. Where done, area parking requirements are reduced.	1	0		N/A	N/A	N/A	N/A	0	
	Enact Regulations: **(click here for National examples)**									
	Create a parking district and allow/require businesses to support public garages rather than provide their own on site parking.	1	0		1	N/A	N/A	N/A	0	
	Require large developments to adopt transportation demand management techniques to lower vehicle use and parking demand.	1	0		N/A	N/A	N/A	N/A	0	
		8	**1**							
			PAGE TOTAL							

Table 5A.1 – EPA Water Quality Scorecard (Continued)

4	**Encourage Efficient Parking**										
4.C.1											
Question:	Are there requirements for landscaping designed to minimize stormwater in parking lots?										
Goal:	Require substantial landscaping to help reduce runoff.										
Why:	Parking lots generate a large amount of impervious cover. Requiring landscaping reduces the environmental impact of parking and can provide additional community benefits by providing shade and, if appropriately placed, creating natural barriers between pedestrians and cars.										
	Tools and Policies	**Points Available**	**Points Received or N/A**	**Points from MWS**	**Points from Codes**	**Points from Fire**	**Points from Health**	**Points from MDHA**	**Points from Planning**	**Points from Public Works**
	Adopt Plans/Educate:									
	Comprehensive plan calls for landscaping in parking lots to help reduce stormwater runoff.	1	1		1	N/A	N/A	N/A	1	
	Remove Barriers:									
	Allow alternative or innovative landscaping solutions that provide stormwater management functions to count towards perimeter or other landscaping requirements.	1	1	1	1	N/A	N/A	N/A	0	
	Adopt Incentives: **(click here for National examples)**									
	Parking lot landscaping and green roofs on parking structures credited towards meeting local stormwater management requirements.	1	1	1	N/A	N/A	N/A	N/A	1	
	Do not count parking structures with green roofs against the allowable floor area ratio of a site.	1	0		N/A	N/A	N/A	N/A	0	
	Give additional landscaping credit for preservation of large, mature trees within parking lots.	1	1		N/A	N/A	N/A	N/A	1	
	Provide mechanisms for car sharing in transit oriented development. Where done, area parking requirements are reduced.	1	0		N/A	N/A	N/A	N/A	0	
	Enact Regulations: **(click here for National examples)**									
	Adopt parking lot landscape regulations that require provision of trees, minimum percent of parking lot interior area to be landscaped (e.g., 10%), and minimum sized landscaping areas (e.g., minimum of 25 square feet for island planting areas).	1	1		1	N/A	N/A	N/A	1	
	In parking lot landscaping regulations, specify the types and sizes of shrubs and trees most appropriate for controlling/reducing stormwater runoff.	1	1		1	N/A	N/A	N/A	0.5	
	Adopt standard requiring a minimum area of the parking lot that must be drained to landscaped areas.	1	0		N/A	N/A	N/A	N/A	0	
	Require that runoff from parking lots is managed with green infrastructure practices, including trees, vegetated islands, swales, rain gardens or other approaches.	1	0		N/A	N/A	0	N/A	0	
	Enact alternative landscaping and parking regulations that are tailored for and support infill development (parking requirements, parking lot landscaping options that focus on perimeter landscaping to encourage smaller lots, etc.).	2	1		N/A	N/A	N/A	2	0.5	
	Require parking structures to incorporate green roofs to reduce stormwater runoff.	1	0		1	N/A	N/A	N/A	0	
	Reduce drive aisle widths in parking lots to decrease the amount of pervious surface. For multi-family developments, drive aisles can be shared. In commercial developments, typical drive aisles can be reduced 5 -10%.	1	0		N/A		N/A	N/A	0	
		14	**7**							
			PAGE TOTAL							

Table 5A.1 – EPA Water Quality Scorecard (Continued)

5	Adopt Green Infrastructure Stormwater Management Provisions									
5.A.1										
Question:	Are green infrastructure practices encouraged as legal and preferred for managing stormwater runoff?									
Goal:	Make all types of green infrastructure allowed and legal and remove all impediments to using green infrastructure (including for stormwater requirements), such as limits on infiltration in rights-of-way, permit challenges for green roofs, safety issues with permeable pavements, restrictions on the use of cisterns and rain barrels, and other such unnecessary barriers.									
Why:	Green infrastructure approaches have been proven to be more effective and cost efficient than conventional stormwater management practices in many instances and provide other substantial community benefits.									
	Tools and Policies	**Points Available**	**Points Received or N/A**	**Points from MWS**	**Points from Codes**	**Points from Fire**	**Points from Health**	**Points from MDHA**	**Points from Planning**	**Points from Public Works**
	Adopt Plans/Educate:									
	Inform the public, through education and outreach programs, that green infrastructure practices can be used to manage stormwater runoff on their property.	1	1	0	N/A	N/A	N/A	N/A	1	
	Create a green infrastructure workshop or training program for internal and external reviewers to ensure that the stakeholders who use this tool will have the ability to understand and use it effectively.	1	0	0	N/A	N/A	N/A	N/A	N/A	
	Remove Barriers:									
	Development and other codes encourage and allow property owners to adopt home-based green infrastructure practices, such as rain gardens, rain barrels and other rainwater harvesting practices.	1	1	1	1	N/A	0	N/A	0.5	
	Review and change, where necessary, building codes or other local regulations to ensure that all local government departments/agencies have coordinated with one another to ensure that green infrastructure implementation is legal, e.g. remove restrictions on downspout disconnection.	1	1		1	N/A	N/A	N/A	?	
	Adopt Incentives: **(click here for National examples)**									
	Green infrastructure practices credited towards required controls for stormwater runoff.	1	1	1	N/A	N/A	N/A	N/A	N/A	
	Establish a "Green Tape" expedited review program for applications that include green infrastructure practices.	1	1	0	N/A	N/A	N/A	N/A	1	
	Reduce stormwater utility rates based on the use of green infrastructure practices.	1	1	1	N/A	N/A	N/A	N/A	N/A	
	Enact Regulations: **(click here for National examples)**									
	Zoning and subdivision regulations specifically permit green infrastructure facilities, including but not limited to: (1 point for each technique to a maximum of 4 points) --Green roofs; --Infiltration approaches, such as rain gardens, curb extensions, planter gardens, permeable and porous pavements, and other designs where the intent is to capture and manage stormwater using soils and plants; --Water harvesting devices, such as rain barrels and cisterns; --Downspout disconnection.	1 to 4 points	3		4	N/A	0	N/A	2	
	Developers are required to meet stormwater requirements using green infrastructure practices where site conditions allow. Developers must provide documentation for sites that do not allow on-site infiltration, reuse or evapotranspiration to meet locally determined performance stormwater management standards.	1 to 2 points	0		N/A	N/A	N/A	N/A	0	
		13	**9**							
			PAGE TOTAL							

Table 5A.1 – EPA Water Quality Scorecard (Continued)

5	Adopt Green Infrastructure Stormwater Management Provisions
5.A.2	
Question:	Do stormwater management plan reviews take place early in the development review process?
Goal:	Incorporate stormwater plan comments and review into the early stages of development review/site plan review and approval, preferably at pre-application meetings with developers.
Why:	Pre-site plan review is an effective tool for discussing with developers alternative approaches for meeting stormwater requirements. This can ensure that green infrastructure is incorporated into new projects at early design stages, well before construction begins.

	Tools and Policies	Points Available	Points Received or N/A	Points from MWS	Points from Codes	Points from Fire	Points from Health	Points from MDHA	Points from Planning	Points from Public Works
	Adopt Plans/Educate:									
	Encourage/require a pre-site plan meeting with developers to discuss stormwater management and green infrastructure approaches. --Voluntary = 1 point --Mandatory = 2 points	1 to 2 points	1	0	2	N/A	N/A	N/A	N/A	
	Include landscape architects in design and review of stormwater management plans.	1	1	0	1	N/A	N/A	1	N/A	
	Remove Barriers:									
	Adopt Incentives: (click here for National examples)									
	Provide accelerated review of projects where developer attended a pre-application meeting.	1	0	0	N/A	N/A	N/A	N/A	N/A	
	Enact Regulations: (click here for National examples)									
	Preliminary stormwater plan review occurs contemporaneously with preliminary site plan review and before any development approvals.	1	1		1	N/A	N/A	N/A	1	
	Development applications must be accompanied by preliminary/conceptual stormwater management plans that incorporate green infrastructure elements and describe how stormwater management standards will be met.	1	0		N/A	N/A	N/A	N/A	0	
		6	**3**							
			PAGE TOTAL							

Table 5A.1 – EPA Water Quality Scorecard (Continued)

5	Adopt Green Infrastructure Stormwater Management Provisions									
5.A.3										
Question:	Do local building and plumbing codes allow harvested rainwater for exterior uses such as irrigation and non-potable interior uses such as toilet flushing?									
Goal:	Ensure that stormwater reuse is allowed and encouraged for non-potable uses.									
Why:	Stormwater reuse is important for dense, urban areas with limited spaces for vegetated green infrastructure practices.									
	Tools and Policies	**Points Available**	**Points Received or N/A**	**Points from MWS**	**Points from Codes**	**Points from Fire**	**Points from Health**	**Points from MDHA**	**Points from Planning**	**Points from Public Works**
	Adopt Plans/Educate:									
	Local government provides information brochures/manual for homeowners describing acceptable rainwater harvesting techniques.	1	1	0	1	N/A	N/A	N/A	N/A	
	Remove Barriers:									
	Local development, building, and plumbing codes updated to allow reuse of stormwater for non-potable purposes.	1	1		1		N/A	N/A	N/A	
	Adopt Incentives: **(click here for National examples)**									
	Reduce stormwater management facility requirements for developments employing comprehensive rainwater harvesting.	1	0	0	N/A	N/A	N/A	N/A	N/A	
	Reduce stormwater utility rates based on the use of harvest and reuse techniques.	1	0	0	N/A	N/A	N/A	N/A	N/A	
	Enact Regulations: **(click here for National examples)**									
	Require developments to adopt rainwater harvesting techniques as element of stormwater management plans.	1	0	0	N/A	N/A	N/A	N/A	N/A	
		5	**2**							
			PAGE TOTAL							

Table 5A.1 – EPA Water Quality Scorecard (Continued)

5	**Adopt Green Infrastructure Stormwater Management Provisions**									
5.A.4										
Question:	Are provisions available to meet stormwater requirements in other ways, such as off-site management within the same sewershed or "payment in lieu" of programs, to the extent that on site alternatives are not technically feasible?									
Goal:	Allow off-site management of runoff while still holding developers responsible for meeting stormwater management goals.									
Why:	In some cases, it is impracticable or infeasible to treat all or even some of the stormwater runoff on site. In such instances alternative means should be provided through contribution to off-site mitigation projects or off-site stormwater management facilities (preferably green infrastructure facilities)									
	Tools and Policies	**Points Available**	**Points Received or N/A**	**Points from MWS**	**Points from Codes**	**Points from Fire**	**Points from Health**	**Points from MDHA**	**Points from Planning**	**Points from Public Works**
	Adopt Plans/Educate:									
	For infill and redevelopment areas, off-site green stormwater management plans should be developed in cooperation between local government and landowner/developers. Allowing off-site management of stormwater runoff requires sewershed designation within the local government to ensure that true mitigation is possible and equal stormwater management and water quality benefits are achieved with off-site management.	2	0	0	N/A	N/A	N/A	N/A	N/A	
	Retrofit projects that will utilize green infrastructure stormwater management techniques should be identified and prioritized within the sewershed.	1	0	0	N/A	N/A	N/A	N/A	N/A	
	Remove Barriers:									
	Amend stormwater management regulations and development codes as necessary to allow off-site stormwater management, especially for infill and redevelopment areas.	1	0	0	N/A	N/A	N/A	N/A	N/A	
	Adopt Incentives: **(click here for National examples)**									
	Enact Regulations: **(click here for National examples)**									
	Establish system that allows/requires payment-in-lieu fees for off-site stormwater management facilities. Fees should be set sufficiently high as to cover the true cost of off-site management. Consider limitations on amount of off-site management allowed (more for infill areas, less for greenfield sites).	1	0	0	N/A	N/A	N/A	N/A	N/A	
		5	**0**							
			PAGE TOTAL							

Table 5A.1 – EPA Water Quality Scorecard (Continued)

5	**Adopt Green Infrastructure Stormwater Management Provisions**									
5.B.1										
Question:	Does your stormwater ordinance include monitoring, tracking, and maintenance requirements for stormwater management practices?									
Goal:	Incorporate monitoring, tracking, and maintenance requirements for stormwater management practices into your municipal stormwater ordinance.									
Why:	These measures will help ensure that green infrastructure practices are monitored and tracked over time and remain in proper working condition to provide the performance required by the stormwater ordinance.									
	Tools and Policies	**Points Available**	**Points Received or N/A**	**Points from MWS**	**Points from Codes**	**Points from Fire**	**Points from Health**	**Points from MDHA**	**Points from Planning**	**Points from Public Works**
	Adopt Plans/Educate:									
	Develop a system to monitor and track stormwater management practices deployed at greenfield and redevelopment sites. Tracking of management practices should begin during the plan review and approval process with a database or geographic information system (GIS). The database should include both public and private projects.	1	1	1	N/A	N/A	N/A	N/A	N/A	
	Provide model checklist for maintenance protocols for ease of inspection, tracking and enforcement.	1	1	1	N/A	N/A	N/A	N/A	N/A	
	Sponsor demonstration projects for green infrastructure management best practices.	1	1		1	N/A	N/A	N/A	N/A	
	Remove Barriers:									
	Ensure that proper local agencies have authority to enforce maintenance requirements.	1	1	1	N/A	N/A	N/A	N/A	N/A	
	Adopt Incentives: **(click here for National examples)**									
	Create self-inspection maintenance certification program that allows developers/landowners to train/retain private inspectors to certify compliance with stormwater management plans and long-term maintenance.	1	0	0	N/A	N/A	N/A	N/A	N/A	
	Enact Regulations: **(click here for National examples)**									
	Require long-term maintenance agreements that allow for public inspections of the management practices and also account for transfer of responsibility in leases and/or deed transfers.	1	1	1	N/A	N/A	N/A	N/A	N/A	
	Conduct inspections every 3 to 5 years, prioritizing properties that pose the highest risk to water quality, inspecting at least 20% of approved facilities annually.	1	1	1	N/A	N/A	N/A	N/A	N/A	
	Develop a plan approval and post-construction verification process to ensure that stormwater standards are being met, including enforceable procedures for bringing noncompliant projects into compliance.	1	1	1	1	N/A	N/A	N/A	N/A	
	Inspections of construction sites are carried out for at least 25% of permitted projects to ensure proper installation of approved practices.	1	1	1	1	N/A	N/A	N/A	N/A	
	Require conservation/green infrastructure bond/escrow in zoning/subdivision ordinances to ensure installation/maintenance of green infrastructure storm water management facilities.	1	1	1	N/A	N/A	N/A	N/A	N/A	
		10	9							
			PAGE TOTAL							

Table 5A.1 – EPA Water Quality Scorecard (Continued)

Overall Summary				
	Category	Total	Total Points Available	% of Total Points Available
1	Protect Natural Resources (Including Trees) and Open Space	38.5	82	47
2	Promote Efficient, Compact Development Patterns and Infill	32.5	47	69
3	Design Complete, Smart Streets That Reduce Overall Imperviousness	38	51	75
4	Encourage Efficient Parking	18	42	43
5	Adopt Green Infrastructure Stormwater Management Provisions	23	40	58
		150	**262**	**57**

Table 6B.1 – Grading Permit Projects Initiated/Completed within FY12

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	**2,191**	**1,902**	**1,709**

Table 6C.1 – Permitted Construction Site Inspections in FY12

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
Total	**2,143**	**1,147**	**1,046**	**942**	**1,663**	**43,140**	**1,305**	**2,651**	**54,037**

Table 6C.2 – Small Construction Site Oversight in FY12

Submitted checklists for permit signoffs	206
Checklists distributed upon demo permit (with intent to possibly build/re-build)	42
Single Family Residences under Grading Permit tier II	15
Follow up site visits on Single Family Construction	472
Building permits signed off for new construction	292

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 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 FY12

ID Number	Date Initiated	Description	Dispatched To	Problem Address	Map Page	Completed Date
296493	7/1/2011 9:37	Water Quality Complaint	ERICKSON, SONYA	1904 OLD HICKORY BLVD	30-G	7/3/2011
296614	7/1/2011 15:11	Water Quality Complaint	ERICKSON, SONYA	3017 CHELSEA WAY	30-C	7/3/2011
297005	7/6/2011 11:31	Water Quality Complaint	ERICKSON, SONYA	405 DAVISDON RD	84-G	7/8/2011
297063	7/6/2011 14:26	Water Quality Complaint	HAYES, JOSH	1411 GALLATIN	47-P	7/8/2011
297816	7/11/2011 10:01	Water Quality Complaint	HAYES, JOSH	10654 CONCORD RD	157-N	7/13/2011
297861	7/11/2011 11:38	Water Quality Complaint	ERICKSON, SONYA	441 Welshwood Drive	112-D	11/30/2012
299269	7/19/2011 7:32	Water Quality Complaint	ERICKSON, SONYA	8261 ROSSI ROAD	100-A	7/21/2011
299657	7/21/2011 7:34	Water Quality Complaint	ERICKSON, SONYA	3206 LEROY ST	87-N	7/23/2011
299721	7/21/2011 10:16	Water Quality Complaint	DOHN, REBECCA	6912 SUNNYWOOD DRIVE	156-D	10/19/2012
299776	7/21/2011 12:49	Water Quality Complaint	ERICKSON, SONYA	1622 DOUBLETREE LANE	104-M	7/23/2011
299951	7/22/2011 9:33	Water Quality Complaint	ERICKSON, SONYA	6105 PENNSYLVANIA AVE	64-A	8/31/2011
300473	7/26/2011 9:59	Water Quality Complaint	ERICKSON, SONYA	1952 WILD OAKS COURT	128-L	7/28/2011
300480	7/26/2011 10:07	Water Quality Complaint	DOHN, REBECCA	2508 LAKE VILLA DR	115-C	8/31/2011
300489	7/26/2011 10:20	Water Quality Complaint	BARBERO, MICHELLE	4805 PARK AVE	64-P	7/29/2011
300501	7/26/2011 10:36	Water Quality Complaint	WINESETT, STEVE	4700 HUMBER	113-C	9/30/2011
300777	7/27/2011 13:21	Water Quality Complaint	ERICKSON, SONYA	2912 WEST END AVE	76-C	7/29/2011
300820	7/27/2011 15:19	Water Quality Complaint	ERICKSON, SONYA	50 WILLOW ST	67-K	9/30/2011
301050	7/28/2011 17:59	Water Quality Complaint	ERICKSON, SONYA	491 OLD HICKORY BLVD	125-P	7/30/2011
301121	7/29/2011 10:41	Water Quality Complaint	DOHN, REBECCA	3223 CLOVERWOOD DR	70-L	7/31/2011
301502	8/1/2011 15:08	Water Quality Complaint	GARMON, MARY	8456 HIGHWAY 100	133-D	8/3/2011
301672	8/2/2011 13:00	Water Quality Complaint	HAYES, JOSH	2502 WINFORD AVE	88-F	9/10/2011
302294	8/5/2011 15:09	Water Quality Complaint	HAYES, JOSH	4225 ASHLAND CITY HWY	23-K	12/15/2012
303360	8/12/2011 7:37	Water Quality Complaint	ERICKSON, SONYA	2704 BISON CT	143-N	8/14/2011
304128	8/17/2011 9:31	Water Quality Complaint	ERICKSON, SONYA	1629 ELM HILL PIKE	79-C	8/31/2011
304341	8/18/2011 8:09	Water Quality Complaint	ERICKSON, SONYA	1629 ELM HILL PK	79-C	8/31/2011
304345	8/18/2011 8:21	Water Quality Complaint	ERICKSON, SONYA	604 CEDAR CT	126-M	8/20/2011
307221	9/6/2011 10:23	Water Quality Complaint	SITZLAR, MEGAN	2214 ELLISTON PLACE	65-R	9/8/2011
307653	9/7/2011 15:31	Water Quality Complaint	ERICKSON, SONYA	5173 PEBBLE CREEK DR	115-K	9/9/2011
307837	9/8/2011 14:30	Water Quality Complaint	ERICKSON, SONYA	4726 NOLENSVILLE PK	113-K	9/10/2011
308644	9/14/2011 9:03	Water Quality Complaint	HAYES, JOSH	2820 KENWAY ROAD	86-N	10/31/2011
309868	9/21/2011 15:35	Water Quality Complaint	ERICKSON, SONYA	1409 MARKET SQUARE	61-H	9/23/2011
311545	10/3/2011 15:04	Water Quality Complaint	ERICKSON, SONYA	4412 ELKINS	47-L	10/5/2011
311798	10/5/2011 9:17	Water Quality Complaint	WINESETT, STEVE	SPENCE LANE & I24E	68-F	10/21/2011
311981	10/6/2011 8:50	Water Quality Complaint	ERICKSON, SONYA	84 LESTER AVENUE	78-B	10/8/2011
311983	10/6/2011 8:59	Water Quality Complaint	ERICKSON, SONYA	4982 EDMONDSON PK	112-H	10/8/2011
312421	10/10/2011 8:36	Water Quality Complaint	ERICKSON, SONYA	2031 NOLENSVILLE RD	78-N	9/30/2012
313662	10/17/2011 14:46	Water Quality Complaint	ERICKSON, SONYA	2001 S HAMILTON RD	88-B	10/19/2011
314780	10/25/2011 7:06	Water Quality Complaint	ERICKSON, SONYA	609 28TH AVE N	65-K	11/30/2012
315594	10/31/2011 11:25	Water Quality Complaint	ERICKSON, SONYA	4008 RIDGEMONT DRIVE	17-G	11/2/2011
315685	10/31/2011 15:03	Water Quality Complaint	ERICKSON, SONYA	315 CHESTERFIELD	76-K	11/2/2011
316282	11/3/2011 12:14	Water Quality Complaint	ERICKSON, SONYA	1002 INDUSTRIAL DR	21-A	11/5/2011
316636	11/7/2011 10:25	Water Quality Complaint	ERICKSON, SONYA	2909 MORNINGSIDE DR	36-J	2/9/2012
317250	11/10/2011 10:09	Water Quality Complaint	ERICKSON, SONYA	61 E THOMPSON LN	89-J	10/31/2012
317364	11/10/2011 15:13	Water Quality Complaint	ERICKSON, SONYA	360 MURFREESBORO RD	78-B	3/31/2012
317628	11/14/2011 10:43	Water Quality Complaint	HUNT, MICHAEL	2945 OWENDALE DRIVE	116-J	12/31/2011
317786	11/15/2011 8:16	Water Quality Complaint	ERICKSON, SONYA	506 YALE AVE	28-H	3/31/2012
317911	11/15/2011 14:59	Water Quality Complaint	ERICKSON, SONYA	136 GREEN ST	67-K	11/17/2011
318227	11/17/2011 13:15	Water Quality Complaint	ERICKSON, SONYA	331 GALLATIN PIKE N	19-L	12/31/2011
318529	11/21/2011 12:36	Water Quality Complaint	WINESETT, STEVE	3001 HAMILTON CHURCH ROAD	128-D	11/23/2011
318635	11/22/2011 10:48	Water Quality Complaint	ERICKSON, SONYA	1316 TULIP GROVE RD	62-N	11/24/2011
319171	11/29/2011 9:14	Water Quality Complaint	WINESETT, STEVE	2001 SOUTH HAMILTON	45-N	12/1/2011
320508	12/8/2011 6:58	Water Quality Complaint	HAYES, JOSH	2182 CARSON	78-O	12/10/2011
321486	12/15/2011 12:32	Water Quality Complaint	ERICKSON, SONYA	61 E THOMPSON L	89-J	2/29/2012
321989	12/20/2011 14:52	Water Quality Complaint	ERICKSON, SONYA	199 POLK AVE	67-J	1/31/2012

Table 7H.1 – Illicit Discharge Investigations Initiated During FY12 (Continued)

ID Number	Date Initiated	Description	Dispatched To	Problem Address	Map Page	Completed Date
323738	1/6/2012 7:54	Water Quality Complaint	ERICKSON, SONYA	906 RIVERGATE PKWY	14-D	01/08/12
324128	1/9/2012 14:00	Water Quality Complaint	ERICKSON, SONYA	4415 POST PL	75-O	02/13/12
324179	1/10/2012 7:21	Water Quality Complaint	ERICKSON, SONYA	760 OLD HICKORY BLVD	124-P	05/31/12
324597	1/12/2012 7:36	Water Quality Complaint	ERICKSON, SONYA	4721 HICKORY WAY	66-D	01/14/12
325372	1/18/2012 14:10	Water Quality Complaint	HAYES, JOSH	3901 WEST END	75-M	02/29/12
325378	1/18/2012 14:23	Water Quality Complaint	ERICKSON, SONYA	1309 BROWN ST	78-N	01/20/12
325559	1/19/2012 14:28	Water Quality Complaint	ERICKSON, SONYA	1301 MERIDIAN ST	46-R	03/31/12
326166	1/24/2012 12:47	Water Quality Complaint	ERICKSON, SONYA	1226 MARTIN ST	77-H	01/26/12
326464	1/26/2012 9:42	Water Quality Complaint	ERICKSON, SONYA	500 ROSA PARKS	66-B	02/29/12
326529	1/26/2012 13:09	Water Quality Complaint	NPDES	610 MERRITT AVE	77-H	01/28/12
326997	1/31/2012 7:26	Water Quality Complaint	ERICKSON, SONYA	HARDING PLACE	102-R	02/02/12
328135	2/6/2012 10:04	Water Quality Complaint	ERICKSON, SONYA	1107 37TH AVE N	64-D	02/08/12
329066	2/10/2012 12:25	Water Quality Complaint	JACKSON, MICKEY	1608 CELEBRATION WAY	44-D	02/12/12
329279	2/13/2012 15:04	Water Quality Complaint	ERICKSON, SONYA	1 DELL PARKWAY	90-P	02/15/12
329435	2/14/2012 14:37	Water Quality Complaint	ERICKSON, SONYA	303 OCEOLA AVE	64-N	01/31/13
329666	2/16/2012 7:37	Water Quality Complaint	HUNT, MICHAEL	5824 NOLENSVILLE RD	126-P	03/30/12
330653	2/23/2012 10:44	Water Quality Complaint	ERICKSON, SONYA	1515 CHASE ST	47-M	02/25/12
330891	2/24/2012 9:28	Water Quality Complaint	ERICKSON, SONYA	919 MASSMAN DR	79-G	02/26/12
331162	2/27/2012 11:00	Water Quality Complaint	PAGE, FELECIA	2140 OLD HICKORY BLVD	121-M	02/29/12
331740	3/1/2012 10:11	Water Quality Complaint	ERICKSON, SONYA	2135 ANTIOCH PIKE	114-K	04/30/12
334034	3/15/2012 9:52	Water Quality Complaint	DOHN, REBECCA	5431 EDMONDSON	125-L	05/17/12
334121	3/15/2012 13:14	Water Quality Complaint	HAYES, JOSH	2601 OLD MATTHEWS RD	46-B	
334653	3/20/2012 6:37	Water Quality Complaint	HAYES, JOSH	1436 MOHAWK	39-A	04/30/12
335598	3/23/2012 15:07	Water Quality Complaint	ERICKSON, SONYA	3850 CROUCH DR	34-K	03/25/12
335635	3/26/2012 7:43	Water Quality Complaint	ERICKSON, SONYA	1297 DICKERSON PK	13-L	03/28/12
336119	3/28/2012 8:29	Water Quality Complaint	ERICKSON, SONYA	1002 INDUSTRIAL DR	21-K	03/30/12
336751	4/2/2012 7:55	Water Quality Complaint	ERICKSON, SONYA	84 LESTER AVE	78-B	01/31/13
336959	4/2/2012 14:39	Water Quality Complaint	HOLT, BONNYE	NOLENSVILLE RD& NORTHCREST DRIVE	113-K	04/04/12
337004	4/3/2012 7:15	Water Quality Complaint	ERICKSON, SONYA	440 FOOTHILLS DR	64-N	04/05/12
337591	4/5/2012 14:39	Water Quality Complaint	ERICKSON, SONYA	1314 NEELYS BEND RD	29-R	04/07/12
338820	4/13/2012 13:58	Water Quality Complaint	ERICKSON, SONYA	2702 WESTWOOD	87-E	04/15/12
338878	4/16/2012 8:12	Water Quality Complaint	ERICKSON, SONYA	2218 29TH AVE S	76-P	04/18/12
339511	4/18/2012 14:58	Water Quality Complaint	DOHN, REBECCA	2708 WORTHAM	86-B	12/31/12
340639	4/26/2012 6:38	Water Quality Complaint	HAYES, JOSH	8672 BURKITT PLACE DRIVE	172-G	04/28/12
340715	4/26/2012 12:11	Water Quality Complaint	DOHN, REBECCA	105 CHEROKEE PL	114-F	06/15/12
341085	4/30/2012 10:40	Water Quality Complaint	HOLT, BONNYE	205 DEEP WOODS CT	92-L	05/02/12
341271	5/1/2012 8:58	Water Quality Complaint	HAYES, JOSH	1345 BELL ROAD	127-L	05/03/12
341758	5/2/2012 16:44	Water Quality Complaint	ERICKSON, SONYA	5010 CHAFFIN DR	121-H	05/04/12
342674	5/9/2012 9:04	Water Quality Complaint	ERICKSON, SONYA	1300 NEELYS BEND RD	29-P	05/11/12
343981	5/16/2012 14:06	Water Quality Complaint	ERICKSON, SONYA	219 CARDEN	76-P	05/18/12
344339	5/18/2012 10:43	Water Quality Complaint	ERICKSON, SONYA	2121 26th AVENUE NORTH	55-B	05/20/12
344554	5/21/2012 11:03	Water Quality Complaint	ERICKSON, SONYA	1115 1ST AVE N	56-K	05/23/12
344555	5/21/2012 11:10	Water Quality Complaint	ERICKSON, SONYA	2121 26TH AVE N	55-B	05/23/12
344558	5/21/2012 11:17	Water Quality Complaint	ERICKSON, SONYA	601 COMMERCE ST	66-G	11/30/12
346381	5/30/2012 15:31	Water Quality Complaint	ERICKSON, SONYA	2428 CROCKER SPRINGS RD	5-M	09/30/12
346430	5/31/2012 7:56	Water Quality Complaint	ERICKSON, SONYA	401 SPACE PARK SOUTH DR	89-P	10/31/12
346627	5/31/2012 13:06	Water Quality Complaint	WINESETT, STEVE	4096 MUFREESBORO PIKE	145-A	06/16/12
346639	5/31/2012 13:19	Water Quality Complaint	WINESETT, STEVE	206 QUEEN STREET	46-F	06/02/12
346754	6/1/2012 7:21	Water Quality Complaint	ERICKSON, SONYA	7541 OLD HICKORY BLVD	17-A	06/03/12
359550	6/7/2012 8:57	Water Quality Complaint	HUNT, MICHAEL	6053 CARGILE RD	84-P	06/09/12
359792	6/8/2012 9:06	Water Quality Complaint	ERICKSON, SONYA	2417 ANTIOCH PK	127-C	06/30/12
359813	6/8/2012 9:55	Water Quality Complaint	ERICKSON, SONYA	3678 RICHBRIAR CT	113-C	08/24/12
360163	6/11/2012 14:10	Water Quality Complaint	ERICKSON, SONYA	3201 POWELL	101-A	09/30/12
360682	6/13/2012 14:47	Water Quality Complaint	ERICKSON, SONYA	1234 FESSLERS LN	78-L	06/15/12
377677	6/18/2012 11:54	Water Quality Complaint	GARMON, MARY	6333 CHARLOTTE PIKE	74-D	06/20/12

Table 7H.1 – Illicit Discharge Investigations Initiated During FY12 (Continued)

ID Number	Date Initiated	Description	Dispatched To	Problem Address	Map Page	Completed Date
377804	6/19/2012 7:45	Water Quality Complaint	ERICKSON, SONYA	1537 PLEASANT HILL RD	91-M	7/3/2012
377872	6/19/2012 10:36	Water Quality Complaint	HAYES, JOSH	1607 COUNTY HOSPITAL ROAD	54-D	6/21/2012
378030	6/19/2012 15:34	Water Quality Complaint	ERICKSON, SONYA	1533 PLEASANT HILL RD	91-M	7/3/2012
378053	6/19/2012 16:47	Water Quality Complaint	ERICKSON, SONYA	500 ROSA PARKS BLVD		6/21/2012
378380	6/20/2012 16:46	Water Quality Complaint	ERICKSON, SONYA	218 BARLEY MILL RD	40-B	6/22/2012
379123	6/26/2012 8:05	Water Quality Complaint	ERICKSON, SONYA	1243 S DICKERSON PK	13-H	7/31/2012
379259	6/26/2012 14:29	Water Quality Complaint	ERICKSON, SONYA	4040 ARMORY OAKS DR	88-N	6/28/2012
379269	6/26/2012 14:47	Water Quality Complaint	ERICKSON, SONYA	600 COWAN ST	56-G	6/28/2012
379276	6/26/2012 15:10	Water Quality Complaint	ERICKSON, SONYA	1433 COWAN CT	56-G	9/30/2012
379855	6/28/2012 14:12	Water Quality Complaint	ERICKSON, SONYA	310 4TH AVE S	66-L	6/30/2012
379954	6/29/2012 8:27	Water Quality Complaint	ERICKSON, SONYA	810 JEFFERSON ST	56-N	7/1/2012
380042	6/29/2012 11:17	Water Quality Complaint	ERICKSON, SONYA	2702 12TH AVE. S	87-A	9/30/2012
380044	6/29/2012 11:24	Water Quality Complaint	ERICKSON, SONYA	6601 SUGAR VALLLEY DR	156-C	7/1/2012

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

Table 7H.2 – Spill Response Investigations Initiated by NPDES During FY12

ID #	Date Initiated	Dispatched To	Problem Address	Project Completion Date
301781	8/3/2011 8:35	ERICKSON, SONYA	NOLENSVILLE RD & HARDING PL	8/31/11
302538	8/8/2011 14:03	ERICKSON, SONYA	2500 BRANSFORD AV	8/10/11
304894	8/22/2011 9:26	BINDER, DALE	95 WALLACE	8/22/11
306286	8/30/2011 7:48	ERICKSON, SONYA	185 SPENCE LN	9/1/11
307462	9/7/2011 8:40	ERICKSON, SONYA	5160 LINBAR DR	9/9/11
307490	9/7/2011 9:43	ERICKSON, SONYA	0 BLUE HOLE RD	9/9/11
308832	9/14/2011 14:57	ERICKSON, SONYA	907 E TRINITY LN	9/16/11
311294	9/30/2011 13:54	HAYES, JOSH	1040 ACORN DR	10/2/11
311960	10/6/2011 6:48	BINDER, DALE	2626 FOSTER AVE	10/6/11
313933	10/18/2011 14:35	BINDER, DALE	1804 ANTIOCH PK	10/20/11
314660	10/24/2011 13:17	ERICKSON, SONYA	5101 RAYWOOD LANE	11/9/11
315064	10/26/2011 11:43	HAYES, JOSH	FESSLERS LANE	10/28/11
317526	11/14/2011 7:50	BINDER, DALE	4539 NOLENSVILLE	11/14/11
317987	11/16/2011 9:44	BINDER, DALE	130 W TRINITY	11/17/11
320622	12/8/2011 13:46	BINDER, DALE	23 MUSIC SQUARE	12/8/11
320977	12/12/2011 13:10	ERICKSON, SONYA	3790 TURLEY DR	12/14/11
322076	12/21/2011 10:14	BINDER, DALE	715 THOMPSON LN	12/21/11
323443	1/4/2012 14:17	HAYES, JOSH	150 W TRINITY	1/6/12
326027	1/23/2012 15:22	ERICKSON, SONYA	791 OLD HICKORY BLVD	10/31/12
327545	2/2/2012 7:24	ERICKSON, SONYA	2600 FRANKLIN RD	2/4/12
328294	2/7/2012 7:00	BINDER, DALE	7620 HWY 70	2/7/12
334627	3/19/2012 14:54	OHARA, KATHERINE	227 SHELBY	3/21/12
334753	3/20/2012 12:02	BINDER, DALE	1900 SHERIDAN RD	3/22/12
339943	4/20/2012 14:09	ERICKSON, SONYA	601 FESSLERS LN	4/22/12
340435	4/25/2012 7:42	HAYES, JOSH	2500 MURFREESBORO	4/27/12
359521	6/7/2012 7:57	ERICKSON, SONYA	2800 CREEKBEND DR	6/9/12
360032	6/11/2012 10:05	BINDER, DALE	132 GEORGE L DAVIS BLVD	6/11/12
377565	6/18/2012 7:57	ERICKSON, SONYA	2501 RAVINE DRIVE	6/20/12
378408	6/21/2012 6:58	BINDER, DALE	2930 OLD FRANKLIN ROAD	6/25/12

Table 7H.3 – Private Sewer Discharge Investigations Initiated by NPDES During FY12

ID	Date Initiated	Dispatched To	Problem Address	Project Completion Date
298581	7/14/2011 7:18	HAYES, JOSH	505 HARDING PL	07/16/11
299737	7/21/2011 10:49	DOHN, REBECCA	2921 OLD FRANKLIN	07/23/11
302380	8/8/2011 8:54	BINDER, DALE	5060 COLEMONT DR	09/26/11
311559	10/3/2011 15:39	ERICKSON, SONYA	8456 HWY 100	10/05/11
312186	10/6/2011 16:46	ERICKSON, SONYA	18 WAIKIKI DR	10/08/11
314781	10/25/2011 7:25	HAYES, JOSH	7108 HIGHWAY 70 S	10/27/11
327765	2/2/2012 15:08	ERICKSON, SONYA	2501 25TH AVE N	02/04/12
335629	3/26/2012 7:12	ERICKSON, SONYA	1314 GALLATIN PK	07/31/12
336746	4/2/2012 7:40	ERICKSON, SONYA	5301 HICKORY HOLLOW PKWY	04/04/12
337596	4/5/2012 14:56	ERICKSON, SONYA	4601 NOLENSVILLE PK	04/07/12
378371	6/20/2012 16:11	ERICKSON, SONYA	1323 PIERCE RD	06/22/12

Table 7H.4 - Failing Septic System Investigations Performed by the Health Department in FY12

Map & Parcel	Date Received	Street Name	Last Name	Job Description	Environmentalist	Sewage on Ground	Notice Issued	Citation	Abatement
030-00-0 056.00	5/4/2011	6425 Old Hickory Blvd	Proctor	Failure	Fellwock	5/5/2011	6/2/2011		7/11/2011
164-00-0 083.00	1/5/2011	3534 Pin Hook Road	Wong	Complaint	Lough	1/19/2011	2/4/2011	4/29/2011	7/20/2011
009-00-0 010.00	5/3/2011	8131 Jackman Road	Parks	Failure	Fellwock	5/25/2011	5/26/2011		8/3/2011
015-00-0 076.00	6/13/2011	3050 Union Hill Road	Barnes	Failure	Fellwock	6/16/2011	7/5/2011		8/12/2011
173-00-0 132.00	7/1/2011	1315 Barnes Road	Hasan	Failure	Fellwock	7/20/2011	7/20/2011		8/18/2011
086-00-0 076.07	8/18/2011	3161 Brandau Road	Hentz	Failure	Fellwock	8/24/2011	8/25/2011		9/8/2011
058-07-0 002.00	8/22/2011	4806 Drakes Branch Road	Owens	Failure	Fellwock	8/23/2011	8/24/2011		9/9/2011
074-00-0 041.00	4/11/2011	Neeley's Bend Road	Hernandez	Complaint	Fellwock	4/22/2011	4/26/2011	7/6/2011	9/15/2011
068-00-0 001.00	7/12/2011	4920 Ashland City Highway	Bell	Failure	Fellwock	7/20/2011	7/21/2011	8/16/2011	9/15/2011
011-00-0 054.00	8/4/2011	Freeman Hollow Road	Modisett	SD	Fellwock	8/4/2011	8/16/2011		10/3/2011
006-00-0 125.00	8/2/2011	3234 Greer Road	Greer	Complaint	Fellwock	8/10/2011	8/23/2011		10/20/2011
004-00-0 105.00	9/9/2011	3912 Knight Road	Ford	Soils	Fellwock	9/14/2011	9/19/2011		11/14/2011
091-00-0 013.00	7/21/2011	1409 51st Avenue N	Powell	Failure	Fellwock	8/1/2011	8/1/2011	9/19/2011	12/6/2011
017-00-0 176.00	6/24/2011	2601 Greer Road (Camp)	Brown	Failure	Fellwock	6/30/2011	8/1/2011		12/13/2011
182-00-0 020.01	11/17/2011	6041 Cane Ridge Road	Jones	Addition	Fellwock	12/6/2011	12/6/2011		12/20/2011
009-00-0 136.00	11/16/2011	7743 Strawberry Hill Road	Hampton	Failure	Fellwock	11/17/2011	11/22/2011	12/7/2011	1/11/2012
030-00-0 018.00	11/18/2011	4800 Tranham Road	Trotter	Complaint	Fellwock	12/1/2011	12/5/2011	12/7/2011	2/7/2012
016-00-0 189.00	9/29/2011	7167 Lama Terra Drive	Moore	Failure	Fellwock	9/29/2011	9/30/2011	11/22/2011	4/16/2012
124-00-0 072.00	3/29/2012	3366 Hobson Pike	Rogers	Failure	Fellwock	4/2/2012	4/5/2012		4/23/2012
187-00-0 105.00	4/10/2012	6908 Burkitt Road	Kemper	Failure	Fellwock	4/12/2012	4/16/2012		4/25/2012
123-00-0 028.00	4/13/2012	2383 Granny Wright Lane		Complaint	Fellwock	4/23/2012	4/25/2012		5/10/2012
084-01-0 004.00	4/12/2012	1423 Dugger Rd	Lawes	Failure	Fellwock	4/17/2012	4/18/2012		5/14/2012
146-14-0 001.00	3/28/2012	819 Otter Creek Road	Deal	Failure	Fellwock	4/10/2012	4/11/2012		5/23/2012
008-00-0 046.00	3/29/2012	1394 County Hospital Road	Midgett	Failure	Fellwock	4/9/2012	4/11/2012		6/19/2012
031-00-0 017.00	5/4/2012	4890 Lickton Pike	Long	Complaint	Fellwock	5/7/2012	5/10/2012		6/25/2012
054-14-0 087.00	6/22/2012	104 Rising Sun Court	Bryant	Failure	Fellwock	6/25/2012	6/26/2012		

Table 8F.1 - MWS Stormwater Routine Maintenance Work Order Numbers for FY12

		Total	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY12
Ditch Maint.	Routine	739	137	352	84	66	14	3	83	0	0	0	30
	Complaint	3337	0	203	557	374	403	445	474	396	485	466	426
	Class C	58	0	0	1	39	18	0	0	0	0	0	0
subtotal		***4,134***	***137***	***555***	***642***	***479***	***435***	***448***	***557***	***396***	***485***	***466***	***456***
Walls & HW	Routine	140	22	75	17	11	1	0	14	0	0	0	7
	Complaint	908	0	45	211	161	183	187	55	32	34	31	18
	Class C	1	0	0	0	0	1	0	0	0	0	0	0
subtotal		***1,049***	***22***	***120***	***228***	***172***	***185***	***187***	***69***	***32***	***34***	***31***	***25***
DW Pipes	Routine	1286	151	115	106	48	5	816	45	0	0	0	29
	Complaint	1438	0	139	249	279	286	165	94	89	137	163	171
	Class C	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***
Cross Drains	Routine	613	85	118	74	78	66	0	192	0	0	0	18
	Complaint	849	0	80	135	114	171	148	61	62	78	97	71
	Class C	18	0	0	0	10	8	0	0	0	0	0	0
subtotal		***1,480***	***85***	***198***	***209***	***202***	***245***	***148***	***253***	***62***	***78***	***97***	***89***
Flooding	Routine	77	14	45	4	10	4	0	0	0	0	0	21
	Complaint	289	0	2	14	15	1	0	19	58	180	42	4
	Class C	4	0	0	0	2	2	0	0	0	0	0	0
subtotal		***370***	***14***	***47***	***18***	***27***	***7***	***0***	***19***	***58***	***180***	***42***	***25***
Debris	Routine	233	39	59	26	26	23	0	60	0	0	9	32
Removal	Complaint	523	0	44	29	28	41	1	80	186	114	167	69
	Class C	2	0	0	1	1	0	0	0	0	0	0	0
subtotal		***758***	***39***	***103***	***56***	***55***	***64***	***1***	***140***	***186***	***114***	***176***	***101***
Erosion	Routine	6	0	1	2	1	1	0	1	0	0	0	9
	Complaint	62	0	0	7	6	1	0	10	20	18	49	28
	Class C	1	0	0	0	1	0	0	0	0	0	0	0
subtotal		***69***	***0***	***1***	***9***	***8***	***2***	***0***	***11***	***20***	***18***	***49***	***37***
Mud													
Removal	Routine	76	4	3	8	7	51	3	0	0	0	0	0
	Complaint	227	0	0	3	8	71	144	0	1	0	0	1
	Class C	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***
Miscl.	Routine	2744	35	420	590	396	219	1,013	71	0	0	2	120
	Complaint	1473	0	94	95	75	86	1,035	15	39	34	27	15
	Class C	4	0	0	0	3	1	0	0	0	0	0	0
subtotal		***4,221***	***35***	***514***	***685***	***474***	***306***	***2048***	***86***	***39***	***34***	***29***	***135***
Inlet Maint.	Routine	138750	177	7,278	33,495	37,296	35,258	20,125	4,841	140	140	108	312
	Complaint	6903	0	260	416	353	263	3,088	243	1,880	400	561	231
	Class C	5	0	0	0	5	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***
Sinkhole	Routine	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
	Class C	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***
		Total	**FY02**	**FY03**	**FY04**	**FY05**	**FY06**	**FY07**	**FY08**	**FY09**	**FY10**	**FY11**	**FY12**
	Routine	145,361	664	8,466	34,406	37,939	35,642	21,960	5,307	140	140	119	578
	Complaint	18,651	0	867	1,716	1,413	1,508	5,216	1,051	2,763	1,480	1,603	1,034
	Class C	93	0	0	2	61	30	0	0	0	0	0	0
TOTAL		***164,105***	**664**	**9,333**	**36,124**	**39,413**	**37,180**	**27,176**	**6,358**	**2,903**	**1,620**	**1,722**	**1,612**
		*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 Maintenance	Rain Routes	County Hospital Road	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
Total to date	***158,435***	**18,546**	**10,066**	**3,240**	**126,583**

Miscellaneous Work Information

Fiscal Year	Linear Feet of Redefined Ditch	Cubic Yards of Material Removed
FY2010	99,460	N/A
FY2011	77,795	1,248
FY2012	84,280	1,649
Total to date	**261,535**	**2,897**

Note: 41, 170.21 Cubic Yards of material cleaned out of stormwater infrastructure was hauled to the area landfill in FY12. The material includes debris, sediment, and trash removed from storm drains, culverts, and channels.

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

	July	August	September	October	November	December	January	February	March	April	May	June	Total
Debris Collected *(tons)*	358.50	344.64	375.47	488.53	708.57	533.87	334.69	329.37	383.39	380.80	348.96	287.11	**4,873.90**
Miles of Street Swept	1,707.36	1,707.36	1,707.36	1,701.36	1,625.90	1,657.84	1,764.68	1,763.60	1,656.05	1,783.32	1,658.49	1,783.85	**20,517.16**

Table 9F.1 Development and Review Section Plan Review Numbers

	July	August	September	October	November	December	January	February	March	April	May	June	Total
Number of Plan Submittals	87	128	139	119	115	97	182	112	156	110	151	129	**1525**
Number of Plan Approvals	64	77	88	91	83	95	160	79	116	89	117	115	**1174**

Note: ** 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 "MonthllyReport_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 includes 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 seperately. **This new tracking began in September 2011 so the numbers are a little low since they are missing approvals for July & August**. 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 "MonthllyReport_SWEngr(year).xls" (or some variation of that format) and it can be found in the following location, "S:\DevReview\Codes Secti*

Table 10C.1 - Industrial Sites Inventoried in the Metro Nashville's Industrial Inspection 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 in the Metro Nashville's Industrial Inspection 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 in the Metro Nashville's Industrial Inspection 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 in the Metro Nashville's Industrial Inspection 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.		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 in the Metro Nashville's Industrial Inspection 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 all 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.

Table 13A.1 – TMDL Monitoring Data Since 2010

Project Name	Date	Watershed	Site Name	DO %	DO mg/L	Cond	Temp C	pH	Flow	E coli	PCR All	PCR Huback	TSS
Dry Weather	5/9/2011	Richland	Bosley	99.70	9.53	545.0	17.30	7.72	N/A	770.10	11.40	2.30	2.4000
Dry Weather	5/10/2011	Richland	Bosley	105.90	9.91	535.0	18.40	7.82	3.309	1732.90	19.10	0.80	3.2000
Dry Weather	5/11/2011	Richland	Bosley	93.10	8.81	530.0	17.70	7.82	3.552	2419.60	3.60	N/A	BDT
Dry Weather	5/12/2011	Richland	Bosley	100.40	9.43	530.0	18.50	7.85	2.886	1986.30	2.60	N/A	1.6000
Dry Weather	5/18/2011	Richland	Bosley	116.20	11.29	510.0	16.60	7.92	3.407	727.00	4.40	N/A	2.0000
Dry Weather	7/11/2011	Richland	Bosley	104.50	8.97	479.4	23.00	8.12	2.980	2419.60	16.20	8.60	3.6000
Dry Weather	7/12/2011	Richland	Bosley	94.30	8.31	509.0	22.40	7.96	3.610	1553.10	5.80	N/A	2.4000
Dry Weather	7/13/2011	Richland	Bosley	95.60	8.44	512.0	21.50	7.80	2.380	2419.60	8.70	N/A	12.0000
Dry Weather	7/14/2011	Richland	Bosley	87.30	7.52	503.0	22.00	8.05	2.150	1203.30	5.90	N/A	3.6000
Dry Weather	7/21/2011	Richland	Bosley	103.40	8.62	535.0	24.90	7.94	3.810	224.70	5.60	N/A	2.4000
Dry Weather	10/3/2011	Richland	Bosley	95.20	9.28	535.0	16.50	8.02	3.520	137.40	137.40	BDL	2.4000
Dry Weather	10/4/2011	Richland	Bosley	99.10	9.61	16.6	536.00	8.01	3.060	272.30	272.30	BDL	1.6000
Dry Weather	10/5/2011	Richland	Bosley	117.40	10.92	529.0	18.00	8.06	3.130	159.70	159.70	BDL	4.0000
Dry Weather	10/6/2011	Richland	Bosley	99.10	9.39	530.0	17.80	7.83	3.510	206.40	206.40	BDL	BDT
Dry Weather	10/24/2011	Richland	Bosley	99.70	9.85	512.0	15.90	8.07	2.420	185.00	185.00	BDL	2.0000
Dry Weather	1/4/2012	Richland	Bosley	95.70	10.11	535.0	12.80	7.94	4.430	178.00	2.90	N/A	BDT
Dry Weather	1/5/2012	Richland	Bosley	97.50	10.19	539.0	13.30	7.92	1.840	68.90	3.00	N/A	2.4000
Dry Weather	1/30/2012	Richland	Bosley	97.20	10.10	510.0	13.50	7.73	N/A	67.60	11.70	BDL	3.2000
Dry Weather	1/31/2012	Richland	Bosley	101.30	10.39	512.0	7.78	14.10	9.920	86.00	2.30	N/A	3.6000
Dry Weather	2/7/2012	Richland	Bosley	91.80	9.21	495.2	14.70	7.84	1.940	307.60	1.50	N/A	5.6000
								Total Geomean		434.44			
Wet Weather	5/24/2011	Richland	Bosley	83.30	7.39	381.0	20.60	7.74	8.900	2419.60	16.40	5.30	9.6000
Wet Weather	6/27/2011	Richland	Bosley	87.70	7.54	407.0	22.40	7.87	2.750	261.30	3.00	N/A	3.6000
Wet Weather	9/15/2011	Richland	Bosley	83.60	7.73	502.0	19.10	7.63	4.590	579.40	2.20	N/A	4.4000
Wet Weather	11/15/2011	Richland	Bosley	84.90	8.35	323.6	16.30	7.51	17.610	5560.00	16.90	BDT	BDT
Wet Weather	1/11/2012	Richland	Bosley	89.80	9.35	278.6	13.20	7.77	22.740	5380.00	45.30	13.00	28.8000

Table 13A.1 – TMDL Monitoring Data Since 2010 (Continued)

Project Name	Date	Watershed	Site Name	DO %	DO mg/L	Cond	Temp C	pH	Flow	E coli	PCR All	PCR Huback	TSS
Dry Weather	4/5/2010	Mill	Whittemore	164.70	14.57	520.0	20.90	8.81	5.099	71.20	7.20	N/A	2.2000
Dry Weather	4/7/2010	Mill	Whittemore	111.80	10.94	547.0	16.20	8.25	9.570	461.10	5.60	N/A	0.4000
Dry Weather	4/12/2010	Mill	Whittemore	117.00	11.54	575.0	15.90	8.34	9.071	214.30	8.50	N/A	1.4000
Dry Weather	4/19/2010	Mill	Whittemore	107.90	11.05	584.0	14.40	8.36	BDL	344.80	16.10	0.70	2.6000
Dry Weather	4/21/2010	Mill	Whittemore	114.30	11.21	593.0	16.00	8.38	4.271	344.80	6.80	N/A	3.4000
Dry Weather	7/6/2010	Mill	Whittemore	111.10	9.26	608.0	24.20	8.16	4.970	1986.40	3.20	N/A	1.8000
Dry Weather	7/19/2010	Mill	Whittemore	91.50	7.83	614.0	23.10	8.01	BDL	1299.70	1.60	N/A	0.8000
Dry Weather	7/20/2010	Mill	Whittemore	102.30	8.61	624.0	23.80	8.15	6.030	1046.20	2.80	N/A	0.8000
Dry Weather	7/21/2010	Mill	Whittemore	113.80	9.37	566.0	25.00	8.16	5.743	613.10	3.90	N/A	1.4000
Dry Weather	7/29/2010	Mill	Whittemore	106.50	8.68	619.0	25.80	8.05	14.153	613.10	2.40	N/A	1.6000
Dry Weather	9/21/2010	Mill	Whittemore	76.00	6.75	609.0	20.70	7.68	3.534	172.30	8.80	N/A	0.8000
Dry Weather	10/19/2010	Mill	Whittemore	73.30	7.38	584.0	15.00	7.90	2.965	93.30	2.20	N/A	1.2000
Dry Weather	11/10/2010	Mill	Whittemore	113.70	12.06	440.0	13.20	8.09	5.518	141.40	3.10	N/A	1.2000
Dry Weather	12/28/2010	Mill	Whittemore	113.60	14.91	655.0	4.80	8.36	4.007	28.80	2.50	N/A	0.4000
Dry Weather	2/23/2011	Mill	Whittemore	112.80	13.05	583.0	8.80	8.19	6.980	64.40	23.20	2.70	1.2000
Other	5/10/2010	Mill	Whittemore	88.50	9.35	588.0	13.40	7.99	N/A	1119.90	3.30	N/A	2.6000
Other	5/12/2010	Mill	Whittemore	98.60	9.43	560.0	17.40	8.10	N/A	686.00	6.80	N/A	2.8600
Other	5/19/2010	Mill	Whittemore	93.00	9.19	540.0	15.90	7.98	N/A	727.00	3.40	N/A	0.0000
Other	5/25/2010	Mill	Whittemore	97.00	9.03	587.0	18.80	8.02	N/A	1119.90	4.10	N/A	0.0000
Other	5/26/2010	Mill	Whittemore	97.60	9.11	583.0	18.80	8.80	N/A	1299.70	4.40	N/A	0.0000
								Total Geomean		374.28			
								Excluding Flood		273.48			
Wet Weather	2/24/2011	Mill	Whittemore	94.80	10.39	242.8	11.30	7.77	40.685	1553.10	26.70	3.80	62.8000
Wet Weather	4/20/2011	Mill	Whittemore	94.50	9.41	503.0	15.50	7.81	34.363	387.30	1.40	N/A	1.5000
Wet Weather	4/26/2011	Mill	Whittemore	102.40	9.75	246.0	17.50	7.25	21.648	5380.00	3.30	N/A	14.0000
Wet Weather	6/27/2011	Mill	Whittemore	95.00	8.61	489.1	20.40	7.98	7.579	1553.10	1.40	N/A	2.0000

Table 13A.1 – TMDL Monitoring Data Since 2010 (Continued)

Project Name	Date	Watershed	Site Name	DO %	DO mg/L	Cond	Temp C	pH	Flow	E coli	PCR All	PCR Huback	TSS
Dry Weather	4/2/2012	Whites	Whites Creek	69.70	6.34	447.5	20.00	7.21	N/A	57.30	N/A	N/A	N/A
Dry Weather	4/3/2012	Whites	Whites Creek	56.40	5.26	429.3	21.20	7.33	N/A	40.80	N/A	N/A	N/A
Dry Weather	4/4/2012	Whites	Whites Creek	92.60	7.37	443.3	25.50	8.04	N/A	15.60	N/A	N/A	N/A
Dry Weather	4/9/2012	Whites	Whites Creek	92.10	8.72	420.9	17.20	7.17	N/A	145.50	N/A	N/A	N/A
Dry Weather	4/24/2012	Whites	Whites Creek	75.20	7.58	405.5	15.50	7.48	N/A	54.60	N/A	N/A	N/A
Dry Weather	7/31/2012	Whites	Whites Creek	71.60	5.81	520.0	28.10	7.65	N/A	33.20	N/A	N/A	N/A
Dry Weather	8/9/2012	Whites	Whites	84.50	6.54	344.0	28.30	7.35	N/A	13.20	N/A	N/A	N/A
Dry Weather	8/13/2012	Whites	Whites Creek	67.20	5.33	273.7	26.50	7.06	N/A	18.50	N/A	N/A	N/A
									Geomean	35.19			

Table 13A.1 – TMDL Monitoring Data Since 2010 (Continued)

Project Name	Date	Watershed	Site Name	DO %	DO mg/L	Cond	Temp C	pH	Flow	E coli	PCR All	PCR Huback	TSS
Dry Weather	4/2/2012	Manskers	Walkers	87.40	8.43	402.7	17.10	7.89	6.897	435.20	N/A	N/A	N/A
Dry Weather	4/3/2012	Manskers	Walkers	75.80	7.30	398.5	17.10	7.53	8.679	157.60	N/A	N/A	N/A
Dry Weather	4/4/2012	Manskers	Walkers	103.50	8.45	379.4	18.90	8.03	8.546	35.00	N/A	N/A	N/A
Dry Weather	4/10/2012	Manskers	Walkers	95.70	10.23	390.9	12.40	8.07	BDL	158.50	N/A	N/A	N/A
Dry Weather	4/24/2012	Manskers	Walkers	96.60	10.39	407.5	12.00	7.48	BDL	160.70	N/A	N/A	N/A
Dry Weather	7/31/2012	Manskers	Walkers	86.40	6.92	430.0	26.50	7.81	BDL	198.90	N/A	N/A	N/A
Other	5/10/2010	Manskers	Walkers	83.30	8.94	380.1	12.20	8.25	N/A	156.50	N/A	N/A	N/A
Other	5/11/2010	Manskers	Walkers	93.60	9.54	385.7	14.40	8.19	N/A	133.30	N/A	N/A	N/A
Other	5/13/2010	Manskers	Walkers	95.30	8.96	398.7	18.70	8.16	N/A	74.00	N/A	N/A	N/A
Other	5/19/2010	Manskers	Walkers	90.20	8.56	326.3	17.60	7.88	N/A	201.40	N/A	N/A	N/A
								Total Geomean		143.80			
								Excluding Geomean		151.65			

Table 13A.1 – TMDL Monitoring Data Since 2010 (Continued)

Project Name	Date	Watershed	Site Name	DO %	DO mg/L	Cond	Temp C	pH	Flow	E coli	PCR All	PCR Huback	TSS
Dry Weather	4/11/2011	Browns	W. Fork Browns	0.00	8.79	501.0	17.20	7.91	42.504	156.50	1.10	N/A	0.6000
Dry Weather	4/19/2011	Browns	W. Fork Browns	101.00	9.83	495.5	16.30	7.89	20.110	121.10	3.30	N/A	1.8000
Dry Weather	5/6/2011	Browns	W. Fork Browns	96.40	9.73	477.7	14.80	7.81	23.166	344.80	1.80	N/A	0.8000
Dry Weather	5/7/2011	Browns	W. Fork Browns	96.50	9.67	478.9	15.10	7.83	11.338	387.30	1.00	N/A	2.4000
Dry Weather	5/9/2011	Browns	W. Fork Browns	102.30	9.91	482.0	16.60	7.77	BDL	1203.30	4.90	N/A	0.8000
Dry Weather	7/11/2011	Browns	W. Fork Browns	103.10	9.36	528.0	20.00	7.85	3.020	579.40	0.80	N/A	1.6000
Dry Weather	7/12/2011	Browns	W. Fork Browns	100.50	9.02	523.0	21.00	8.09	BDL	488.40	1.40	N/A	6.8000
Dry Weather	7/14/2011	Browns	W. Fork Browns	90.50	7.92	474.3	22.30	7.97	0.789	1986.30	2.80	N/A	7.2000
Dry Weather	7/18/2011	Browns	W. Fork Browns	95.60	8.72	520.0	19.70	7.91	2.420	365.40	4.00	N/A	2.8000
Dry Weather	7/21/2011	Browns	W. Fork Browns	93.30	8.34	534.0	20.00	7.80	4.280	344.10	1.50	N/A	0.8000
Dry Weather	10/3/2011	Browns	W. Fork Browns	90.70	8.81	584.0	16.80	7.90	3.140	387.30	1.50	N/A	-0.8000
Dry Weather	10/4/2011	Browns	W. Fork Browns	77.80	7.59	579.0	15.90	7.85	3.220	290.90	3.50	N/A	1.6000
Dry Weather	10/5/2011	Browns	W. Fork Browns	79.70	7.78	515.0	17.00	7.85	3.510	115.30	1.80	N/A	0.8000
Dry Weather	10/6/2011	Browns	W. Fork Browns	111.00	10.34	581.0	18.80	7.91	2.620	185.00	0.80	N/A	BDL
Dry Weather	10/24/2011	Browns	W. Fork Browns	85.20	8.65	574.0	14.40	7.87	4.000	54.60	1.10	N/A	2.0000
Dry Weather	1/4/2012	Browns	W. Fork Browns	94.80	10.52	530.0	10.90	7.79	13.810	30.90	1.10	N/A	0.8000
Dry Weather	1/5/2012	Browns	W. Fork Browns	101.40	11.05	533.0	11.50	7.80	7.580	23.30	2.40	N/A	BDL
Dry Weather	1/30/2012	Browns	W. Fork Browns	92.10	10.20	493.4	11.00	7.80	BDL	51.20	1.90	N/A	0.8000
Dry Weather	1/31/2012	Browns	W. Fork Browns	100.50	10.72	498.7	12.30	7.85	21.900	79.40	1.80	N/A	1.6000
Dry Weather	2/7/2012	Browns	W. Fork Browns	82.60	9.25	495.1	11.60	7.86	8.390	101.70	0.20	N/A	1.2000
								Total Geomean		197.80			
Wet Weather	5/24/2011	Browns	W. Fork Browns	67.10	6.38	413.5	17.70	7.39	13.600	2419.60	5.10	N/A	1.2000
Wet Weather	6/27/2011	Browns	W. Fork Browns	91.30	8.25	509.0	19.00	7.96	N/A	648.80	1.30	N/A	2.0000
Wet Weather	9/15/2011	Browns	W. Fork Browns	76.00	7.11	18.5	456.60	7.91	3.770	980.40	4.30	N/A	1.6000
Wet Weather	11/15/2011	Browns	W. Fork Browns	67.70	6.62	296.8	16.50	7.23	16.880	8650.00	43.50	2.90	BDL
Wet Weather	1/11/2012	Browns	W. Fork Browns	10.09	9.32	345.6	12.50	6.28	93.400	29090.00	1.70	N/A	24.0000

Table 13A.1 – TMDL Monitoring Data Since 2010 (Continued)

Project Name	Date	Watershed	Site Name	DO %	DO mg/L	Cond	Temp C	pH	Flow	E coli	PCR All	PCR Huback	TSS
Dry Weather	5/9/2011	Richland	Vaughns Gap 2	101.20	9.73	474.5	17.20	8.01	4.870	344.80	4.70	N/A	3.2000
Dry Weather	5/10/2011	Richland	Vaughns Gap 2	104.00	9.83	495.8	18.00	7.97	3.840	344.80	5.40	N/A	2.0000
Dry Weather	5/11/2011	Richland	Vaughns Gap 2	94.40	8.96	504.0	18.10	7.87	2.819	920.80	8.00	N/A	1.2000
Dry Weather	5/12/2011	Richland	Vaughns Gap 2	99.10	9.54	513.0	18.90	7.85	2.662	816.40	2.60	N/A	1.6000
Dry Weather	5/18/2011	Richland	Vaughns Gap 2	118.20	11.64	565.0	14.70	8.42	3.040	228.20	0.90	N/A	1.2000
Dry Weather	7/11/2011	Richland	Vaughns Gap 2	132.00	11.01	614.0	24.30	8.38	1.150	1413.60	3.50	N/A	5.2000
Dry Weather	7/12/2011	Richland	Vaughns Gap 2	102.30	8.25	635.0	26.30	8.23	0.184	2419.60	4.80	N/A	3.6000
Dry Weather	7/13/2011	Richland	Vaughns Gap 2	103.70	8.96	694.0	24.20	0.00	0.280	866.40	12.30	2.90	5.6000
Dry Weather	7/14/2011	Richland	Vaughns Gap 2	137.60	10.96	655.0	27.10	8.43	0.256	648.80	2.00	N/A	2.8000
Dry Weather	7/21/2011	Richland	Vaughns Gap 2	127.00	10.03	615.0	27.40	8.25	0.244	146.70	3.90	N/A	2.8000
Dry Weather	10/3/2011	Richland	Vaughns Gap 2	99.50	10.26	718.0	13.80	8.13	1.030	161.60	2.50	N/A	2.0000
Dry Weather	10/4/2011	Richland	Vaughns Gap 2	113.50	10.56	730.0	18.60	8.14	1.440	186.00	3.10	N/A	2.4000
Dry Weather	10/5/2011	Richland	Vaughns Gap 2	107.90	10.60	722.0	16.10	8.11	0.690	387.30	1.50	N/A	0.8000
Dry Weather	10/6/2011	Richland	Vaughns Gap 2	112.00	10.44	713.0	18.80	8.26	0.449	214.20	0.70	N/A	2.0000
Dry Weather	10/24/2011	Richland	Vaughns Gap 2	N/A	N/A	N/A	N/A	N/A	1.960	110.00	0.60	N/A	1.6000
Dry Weather	1/4/2012	Richland	Vaughns Gap 2	117.20	13.30	575.0	9.50	8.12	1.460	29.50	1.20	N/A	BDL
Dry Weather	1/5/2012	Richland	Vaughns Gap 2	107.50	12.48	535.0	8.70	7.97	1.150	33.60	1.80	N/A	0.8000
Dry Weather	1/31/2012	Richland	Vaughns Gap 2	104.50	11.38	505.0	11.40	7.89	4.870	90.80	1.60	N/A	0.8000
Dry Weather	2/6/2012	Richland	Vaughns Gap 2	78.10	11.30	491.0	12.40	7.81	6.520	64.50	1.60	N/A	3.6000
Dry Weather	2/7/2012	Richland	Vaughns Gap 2	102.00	11.26	501.0	10.70	7.85	4.950	48.70	0.70	N/A	3.6000
								Total Geomean		241.25			
Wet Weather	5/24/2011	Richland	Vaughns Gap 2	97.00	8.97	480.8	18.90	7.77	4.420	2419.60	2.20	N/A	8.8000
Wet Weather	6/27/2011	Richland	Vaughns Gap 2	108.80	9.39	615.0	22.50	8.13	0.729	1046.20	2.60	N/A	1.2000
Wet Weather	9/15/2011	Richland	Vaughns Gap 2	83.90	7.80	534.0	18.80	7.32	5.530	1553.10	2.80	N/A	4.4000
Wet Weather	11/15/2011	Richland	Vaughns Gap 2	80.20	7.95	352.6	15.80	7.38	11.790	2419.60	9.50	N/A	0.0000
Wet Weather	1/11/2012	Richland	Vaughns Gap 2	96.30	10.17	322.5	12.70	7.45	21.630	1732.90	4.80	N/A	36.4000

Table 13A.1 – TMDL Monitoring Data Since 2010 (Continued)

Project Name	Date	Watershed	Site Name	DO %	DO mg/L	Cond	Temp C	pH	Flow	E coli	PCR All	PCR Huback	TSS
Dry Weather	5/9/2011	Richland	Vaughns Gap 1	95.30	9.29	501.0	16.50	7.89	0.000	410.60	4.30	N/A	2.0000
Dry Weather	5/10/2011	Richland	Vaughns Gap 1	96.70	9.25	511.0	17.60	7.91	7.551	387.30	7.30	N/A	0.4000
Dry Weather	5/11/2011	Richland	Vaughns Gap 1	88.70	8.43	520.0	17.50	7.85	2.451	613.10	0.70	N/A	BDL
Dry Weather	5/12/2011	Richland	Vaughns Gap 1	92.10	8.72	526.0	18.00	7.88	2.616	387.30	2.00	N/A	0.8000
Dry Weather	5/18/2011	Richland	Vaughns Gap 1	89.50	9.01	547.0	14.30	8.13	7.408	365.40	0.50	N/A	BDL
Dry Weather	7/11/2011	Richland	Vaughns Gap 1	71.70	5.85	617.0	24.70	8.03	N/D	488.40	3.60	N/A	0.4000
Dry Weather	7/12/2011	Richland	Vaughns Gap 1	68.40	5.53	609.0	25.80	8.02	N/D	218.70	3.10	N/A	1.2000
Dry Weather	7/13/2011	Richland	Vaughns Gap 1	68.10	5.60	620.0	24.10	7.90	N/D	325.50	11.40	1.80	BDL
Dry Weather	7/14/2011	Richland	Vaughns Gap 1	63.00	5.11	609.0	25.30	7.97	N/D	488.40	11.90	1.80	2.8000
Dry Weather	7/21/2011	Richland	Vaughns Gap 1	60.40	4.66	618.0	26.60	8.05	N/D	387.30	3.10	N/A	1.6000
Dry Weather	10/3/2011	Richland	Vaughns Gap 1	84.00	8.91	658.0	12.60	8.10	N/D	119.90	3.50	N/A	0.8000
Dry Weather	10/4/2011	Richland	Vaughns Gap 1	86.70	8.76	657.0	15.10	8.10	N/D	461.10	0.90	N/A	0.4000
Dry Weather	10/5/2011	Richland	Vaughns Gap 1	87.60	8.89	660.0	14.50	8.04	N/D	770.10	0.60	N/A	0.8000
Dry Weather	10/6/2011	Richland	Vaughns Gap 1	81.10	8.10	664.0	15.50	8.01	N/D	648.80	1.30	N/A	3.2000
Dry Weather	10/24/2011	Richland	Vaughns Gap 1	N/A	N/A	N/A	N/A	0.00	N/D	151.50	0.40	N/A	10.4000
Dry Weather	1/4/2012	Richland	Vaughns Gap 1	99.70	11.73	578.0	8.10	8.04	1.710	43.50	0.90	N/A	BDL
Dry Weather	1/5/2012	Richland	Vaughns Gap 1	91.90	10.33	572.0	8.50	7.80	N/D	52.90	1.30	N/A	11.6000
Dry Weather	1/31/2012	Richland	Vaughns Gap 1	95.20	10.36	527.0	11.50	7.76	4.840	69.70	1.20	N/A	0.8000
Dry Weather	2/6/2012	Richland	Vaughns Gap 1	100.00	99.90	505.0	12.30	7.76	9.980	101.90	0.70	N/A	0.8000
Dry Weather	2/7/2012	Richland	Vaughns Gap 1	131.00	14.92	516.0	10.70	7.83	6.800	172.20	1.50	N/A	3.2000
								Total Geomean		252.03			
Wet Weather	5/24/2011	Richland	Vaughns Gap 1	87.20	8.14	363.1	19.30	7.85	10.250	2419.60	3.20	N/A	8.4000
Wet Weather	6/27/2011	Richland	Vaughns Gap 1	88.90	7.65	570.0	27.70	8.07	1.840	517.20	2.60	N/A	0.4000
Wet Weather	9/15/2011	Richland	Vaughns Gap 1	76.60	7.23	531.0	18.60	7.57	4.160	980.40	6.00	N/A	0.8000
Wet Weather	11/15/2011	Richland	Vaughns Gap 1	73.10	7.15	271.8	15.70	7.65	11.190	8130.00	10.20	BDL	BDL
Wet Weather	1/11/2012	Richland	Vaughns Gap 1	94.60	10.06	333.6	12.60	7.51	58.410	1986.30	3.70	N/A	30.0000

Table 13A.1 – TMDL Monitoring Data Since 2010 (Continued)

Project Name	Date	Watershed	Site Name	DO %	DO mg/L	Cond	Temp C	pH	Flow	E coli	PCR All	PCR Huback	TSS
Dry Weather	5/9/2011	Richland	Sugartree	74.90	7.15	553.0	17.40	7.54	BDL	290.90	8.50	N/A	BDL
Dry Weather	5/10/2011	Richland	Sugartree	70.20	6.67	548.0	17.50	7.28	0.242	160.70	8.70	N/A	BDL
Dry Weather	5/11/2011	Richland	Sugartree	68.20	6.57	547.0	17.10	7.26	BDL	218.70	1.50	N/A	BDL
Dry Weather	5/12/2011	Richland	Sugartree	74.30	7.08	553.0	17.30	7.51	BDL	365.40	0.90	N/A	BDL
Dry Weather	5/18/2011	Richland	Sugartree	80.10	7.70	556.0	15.40	7.47	BDL	191.80	1.60	N/A	BDL
Dry Weather	7/11/2011	Richland	Sugartree	46.70	3.92	596.0	23.40	7.31	BDL	410.60	2.80	N/A	1.2000
Dry Weather	7/12/2011	Richland	Sugartree	58.00	4.90	588.0	23.60	7.48	BDL	365.40	2.90	N/A	1.2000
Dry Weather	7/13/2011	Richland	Sugartree	52.50	4.46	596.0	23.00	7.45	BDL	387.30	7.10	N/A	0.8000
Dry Weather	7/14/2011	Richland	Sugartree	55.00	4.67	589.0	23.50	7.44	BDL	365.40	3.20	N/A	2.0000
Dry Weather	7/21/2011	Richland	Sugartree	58.20	4.79	574.0	25.30	7.40	BDL	307.60	2.90	N/A	BDL
Dry Weather	10/3/2011	Richland	Sugartree	62.10	5.81	613.0	16.50	7.36	BDL	151.50	2.90	N/A	1.2000
Dry Weather	10/4/2011	Richland	Sugartree	63.10	6.11	600.0	15.90	7.36	BDL	113.70	6.10	N/A	0.0000
Dry Weather	10/5/2011	Richland	Sugartree	64.90	6.08	609.0	18.20	7.42	BDL	275.50	1.30	N/A	0.8000
Dry Weather	10/6/2011	Richland	Sugartree	57.30	5.40	543.0	18.10	7.31	BDL	178.90	1.30	N/A	0.8000
Dry Weather	10/24/2011	Richland	Sugartree	55.00	5.48	582.0	15.20	7.39	BDL	123.60	3.40	N/A	1.2000
Dry Weather	1/4/2012	Richland	Sugartree	85.80	9.34	556.0	11.40	7.45	BDL	16.00	1.00	N/A	BDL
Dry Weather	1/5/2012	Richland	Sugartree	106.40	11.52	553.0	12.00	7.57	BDL	24.10	0.90	N/A	BDL
Dry Weather	1/30/2012	Richland	Sugartree	98.80	11.67	536.0	8.20	7.90	BDL	488.40	4.80	N/A	BDL
Dry Weather	1/31/2012	Richland	Sugartree	102.60	11.42	542.0	10.50	7.83	0.404	488.40	1.20	N/A	BDL
Dry Weather	2/7/2012	Richland	Sugartree	105.60	11.99	527.0	10.00	7.84	0.293	248.90	1.80	N/A	0.4000
								Total Geomean		200.70			
Wet Weather	5/24/2011	Richland	Sugartree	78.80	7.10	247.0	20.40	7.81	10.640	2419.60	6.50	N/A	1.2000
Wet Weather	6/27/2011	Richland	Sugartree	48.50	4.18	553.0	22.70	7.44	1.360	325.50	2.70	N/A	BDL
Wet Weather	9/15/2011	Richland	Sugartree	56.00	5.66	433.0	20.10	7.08	BDL	2419.60	2.60	N/A	0.4000
Wet Weather	11/15/2011	Richland	Sugartree	91.10	9.00	150.2	15.90	7.67	30.210	3730.00	27.50	0.40	0.0000
Wet Weather	1/11/2012	Richland	Sugartree	87.20	9.20	342.6	12.40	7.76	82.130	6020.00	51.90	12.00	21.6000

Table 13A.1 – TMDL Monitoring Data Since 2010 (Continued)

Project Name	Date	Watershed	Site Name	DO %	DO mg/L	Cond	Temp C	pH	Flow	E coli	PCR All	PCR Huback	TSS
Dry Weather	4/5/2010	Mill	Sorghum	105.90	10.23	513.0	16.70	8.17	5.586	435.20	23.60	4.80	0.6000
Dry Weather	4/7/2010	Mill	Sorghum	124.80	11.62	503.0	18.70	8.49	4.332	172.30	22.00	5.00	BDL
Dry Weather	4/12/2010	Mill	Sorghum	80.70	8.38	517.0	13.50	7.82	3.979	344.80	11.50	1.10	BDL
Dry Weather	4/19/2010	Mill	Sorghum	81.30	8.46	500.0	13.50	7.70	BDL	122.30	9.30	N/A	1.2000
Dry Weather	4/21/2010	Mill	Sorghum	83.40	8.53	490.0	13.80	7.89	4.508	198.90	11.80	0.50	1.6000
Dry Weather	7/6/2010	Mill	Sorghum	81.30	6.95	527.0	23.10	7.92	0.870	365.40	5.30	N/A	2.0000
Dry Weather	7/19/2010	Mill	Sorghum	81.70	6.76	590.0	24.20	7.92	0.000	461.10	9.00	N/A	1.4000
Dry Weather	7/20/2010	Mill	Sorghum	80.90	6.79	563.0	24.10	7.84	1.598	410.60	3.00	N/A	11.2000
Dry Weather	7/21/2010	Mill	Sorghum	79.60	6.61	549.0	24.40	7.89	1.997	686.70	5.00	N/A	0.8000
Dry Weather	7/29/2010	Mill	Sorghum	74.00	6.06	503.0	25.20	7.87	1.108	290.90	6.00	N/A	3.4000
Dry Weather	9/21/2010	Mill	Sorghum	79.20	6.87	513.0	22.30	7.89	0.953	290.90	12.20	1.40	1.8000
Dry Weather	10/19/2010	Mill	Sorghum	49.00	4.84	509.0	16.00	7.08	1.288	131.40	3.00	N/A	5.2000
Dry Weather	11/29/2010	Mill	Sorghum	85.30	9.26	551.0	11.60	7.89	2.156	307.60	8.00	N/A	1.4000
Dry Weather	12/29/2010	Mill	Sorghum	101.60	12.48	571.0	6.40	7.93	1.597	686.70	9.90	N/A	1.0000
Dry Weather	2/14/2011	Mill	Sorghum	123.60	14.05	619.0	9.60	8.37	2.573	101.40	29.90	4.30	0.6000
Other	5/10/2010	Mill	Sorghum	84.10	8.65	462.7	14.10	7.90	N/A	1986.30	21.60	7.70	3.8000
Other	5/12/2010	Mill	Sorghum	86.30	7.95	507.0	18.80	7.94	N/A	579.00	11.30	BDL	BDL
Other	5/19/2010	Mill	Sorghum	88.60	8.72	473.4	16.10	7.99	N/A	1553.10	16.60	2.50	BDL
Other	5/25/2010	Mill	Sorghum	93.50	8.45	495.0	20.20	7.92	N/A	1299.70	37.50	5.30	BDL
Other	5/26/2010	Mill	Sorghum	87.30	7.91	506.0	20.30	7.98	N/A	1986.30	26.00	1.80	BDL
									Total Geomean	422.48			
									Excluding Flood	286.30			
Wet Weather	2/24/2011	Mill	Sorghum	87.10	9.51	298.4	11.50	7.86	40.876	1203.30	21.40	3.60	47.6000
Wet Weather	4/20/2011	Mill	Sorghum	86.30	8.73	450.0	16.20	7.77	7.925	1986.30	3.80	N/A	1.2500
Wet Weather	4/26/2011	Mill	Sorghum	88.80	8.40	285.2	18.00	7.47	16.309	1460.00	4.00	N/A	5.1400
Wet Weather	6/27/2011	Mill	Sorghum	88.40	7.71	501.0	22.10	7.81	2.218	1890.00	2.30	N/A	0.4000

Table 13A.1 – TMDL Monitoring Data Since 2010 (Continued)

Project Name	Date	Watershed	Site Name	DO %	DO mg/L	Cond	Temp C	pH	Flow	E coli	PCR All	PCR Huback	TSS
Dry Weather	3/9/2010	Mill	Sims 2	69.40	7.62	646.0	11.10	7.55	5.400	248.10	16.50	1.10	2.6000
Dry Weather	3/10/2010	Mill	Sims 2	69.50	6.33	703.0	14.00	8.01	3.919	155.30	21.80	0.20	3.2000
Dry Weather	3/17/2010	Mill	Sims 2	64.50	7.06	755.0	11.50	7.98	10.579	145.00	16.40	2.20	4.2000
Dry Weather	3/24/2010	Mill	Sims 2	85.30	8.45	672.0	15.10	7.97	11.408	81.60	10.80	0.10	1.6000
Dry Weather	3/31/2010	Mill	Sims 2	101.40	10.04	645.0	15.60	7.99	10.371	77.10	6.00	N/A	2.4000
Dry Weather	6/8/2010	Mill	Sims 2	82.80	7.23	698.0	21.60	7.75	2.738	166.40	3.60	N/A	6.6000
Dry Weather	6/15/2010	Mill	Sims 2	83.90	7.06	650.0	23.70	7.68	6.358	435.20	5.80	N/A	4.4000
Dry Weather	6/16/2010	Mill	Sims 2	30.20	2.47	658.0	25.10	7.72	5.181	478.60	4.80	N/A	4.8000
Dry Weather	6/22/2010	Mill	Sims 2	79.20	6.62	666.0	23.90	7.64	6.585	365.40	1.80	N/A	3.6000
Dry Weather	6/24/2010	Mill	Sims 2	81.10	6.69	681.0	24.90	7.74	4.193	307.60	1.10	N/A	3.0000
Dry Weather	9/20/2010	Mill	Sims 2	71.90	6.29	650.0	22.10	7.48	2.891	137.60	1.20	N/A	3.0000
Dry Weather	10/5/2010	Mill	Sims 2	85.20	8.48	619.0	15.40	7.64	1.958	108.10	2.40	N/A	1.6000
Dry Weather	12/7/2010	Mill	Sims 2	102.20	12.09	725.0	7.60	8.04	7.564	123.40	3.30	N/A	1.0000
Dry Weather	1/6/2011	Mill	Sims 2	93.60	10.92	622.0	8.40	7.70	4.950	78.90	2.80	N/A	0.4000
Dry Weather	1/28/2011	Mill	Sims 2	89.10	10.51	1261.0	7.70	8.01	20.096	90.50	24.40	2.60	7.4000
Other	5/11/2010	Mill	Sims 2	97.70	9.49	627.0	15.90	7.74	N/A	325.50	8.10	N/A	3.6000
Other	5/13/2010	Mill	Sims 2	87.60	8.22	616.0	18.30	7.77	N/A	217.00	11.40	0.10	4.6000
Other	5/19/2010	Mill	Sims 2	87.30	8.06	667.0	19.30	7.84	N/A	108.10	12.80	0.70	BDL
Other	5/25/2010	Mill	Sims 2	88.90	7.71	622.0	22.20	7.95	N/A	185.00	9.20	N/A	BDL
Other	5/26/2010	Mill	Sims 2	91.10	7.94	631.0	21.90	7.90	N/A	307.60	9.40	N/A	BDL
								Total Geomean		175.63			
								Excluding Flood		164.79			
Wet Weather	2/24/2011	Mill	Sims 2	81.70	8.84	478.8	11.10	7.67	139.620	1299.70	15.00	4.30	97.0000
Wet Weather	4/26/2011	Mill	Sims 2	86.50	8.30	371.6	17.30	7.43	52.642	2419.60	2.60	N/A	20.5700
Wet Weather	4/20/2011	Mill	Sims 2	89.20	8.51	612.0	17.20	7.71	22.369	235.90	7.00	N/A	4.5000
Wet Weather	6/27/2011	Mill	Sims 2	75.50	6.35	519.0	24.00	7.51	8.843	214.30	2.50	N/A	4.0000

Table 13A.1 – TMDL Monitoring Data Since 2010 (Continued)

Project Name	Date	Watershed	Site Name	DO %	DO mg/L	Cond	Temp C	pH	Flow	E coli	PCR All	PCR Huback	TSS
Dry Weather	3/8/2010	Mill	Sims 1	75.10	8.03	728.0	12.10	8.04	3.420	61.30	12.30	0.50	1.2000
Dry Weather	3/10/2010	Mill	Sims 1	90.10	9.22	719.0	14.00	8.14	4.262	95.90	18.00	0.30	1.0000
Dry Weather	3/17/2010	Mill	Sims 1	56.00	6.06	740.0	11.30	7.94	5.940	178.50	57.30	1.40	3.4000
Dry Weather	3/24/2010	Mill	Sims 1	95.00	9.55	677.0	14.80	8.05	9.180	58.30	18.70	0.10	1.4000
Dry Weather	3/31/2010	Mill	Sims 1	121.90	12.17	628.0	15.30	8.23	10.286	77.60	4.70	N/A	1.8000
Dry Weather	9/20/2010	Mill	Sims 1	87.50	7.63	632.0	21.80	7.71	3.674	178.20	1.00	N/A	1.0000
Dry Weather	10/5/2010	Mill	Sims 1	90.00	9.37	649.0	13.50	7.72	3.195	2419.60	2.40	N/A	0.2000
Dry Weather	12/7/2010	Mill	Sims 1	107.90	13.06	725.0	7.10	8.10	4.046	198.90	2.80	N/A	BDL
Dry Weather	1/6/2011	Mill	Sims 1	106.50	12.74	646.0	7.50	7.76	7.514	90.50	2.20	N/A	BDL
Dry Weather	1/28/2011	Mill	Sims 1	99.30	11.64	1101.0	8.20	8.25	5.895	228.20	18.50	1.20	2.2000
								Total Geomean		155.76			
Wet Weather	10/13/2010	Mill	Sims 1	77.00	7.22	549.0	18.20	7.28	10.282	2419.60	13.40	BDL	1.0000
Wet Weather	2/24/2011	Mill	Sims 1	90.80	9.97	460.9	11.10	7.68	224.810	2650.00	36.60	14.70	147.0000
Wet Weather	4/26/2011	Mill	Sims 1	88.60	8.45	449.3	17.50	8.07	49.705	1986.30	5.30	N/A	22.8600
Wet Weather	4/20/2011	Mill	Sims 1	87.00	8.31	649.0	17.80	7.60	26.380	307.60	5.00	N/A	4.7500
Wet Weather	6/27/2011	Mill	Sims 1	90.20	7.70	538.0	22.90	7.84	3.766	275.50	2.50	N/A	2.8000

Table 13A.1 – TMDL Monitoring Data Since 2010 (Continued)

Project Name	Date	Watershed	Site Name	DO %	DO mg/L	Cond	Temp C	pH	Flow	E coli	PCR All	PCR Huback	TSS
Dry Weather	4/5/2010	Mill	Shasta	128.90	11.50	681.0	19.80	8.15	0.612	150.00	3.50	N/A	0.6000
Dry Weather	4/7/2010	Mill	Shasta	97.70	9.42	712.0	16.50	8.03	0.657	613.10	6.80	N/A	0.2000
Dry Weather	4/12/2010	Mill	Shasta	104.50	10.30	711.0	15.50	8.10	0.712	866.40	5.20	N/A	BDL
Dry Weather	4/19/2010	Mill	Shasta	90.70	9.45	733.0	13.50	8.06	BDL	816.40	6.60	N/A	1.4000
Dry Weather	4/21/2010	Mill	Shasta	89.80	8.94	725.0	15.20	8.05	0.468	211.70	8.50	N/A	3.2000
Dry Weather	7/6/2010	Mill	Shasta	87.50	7.78	713.0	21.00	7.94	0.679	2419.60	15.70	0.50	1.2000
Dry Weather	7/19/2010	Mill	Shasta	83.00	7.29	739.0	25.30	7.88	BDL	816.40	0.70	N/A	1.2000
Dry Weather	7/20/2010	Mill	Shasta	85.90	7.53	738.0	21.30	7.94	0.503	1119.90	2.20	N/A	1.4000
Dry Weather	7/21/2010	Mill	Shasta	87.70	7.69	727.0	22.00	7.94	0.499	648.80	2.20	N/A	0.2000
Dry Weather	7/29/2010	Mill	Shasta	83.30	8.06	726.0	22.20	7.91	0.593	920.80	3.70	N/A	2.6000
Dry Weather	9/21/2010	Mill	Shasta	74.30	6.83	759.0	19.40	7.58	0.887	2419.60	7.90	N/A	2.6000
Dry Weather	10/19/2010	Mill	Shasta	64.00	6.46	740.0	14.90	7.84	0.160	172.00	2.00	N/A	1.4000
Dry Weather	11/29/2010	Mill	Shasta	89.30	9.72	757.0	11.30	7.68	0.981	980.40	1.90	N/A	0.2000
Dry Weather	12/28/2010	Mill	Shasta	111.90	13.75	722.0	6.60	8.10	0.595	64.40	2.70	N/A	1.2000
Dry Weather	2/23/2011	Mill	Shasta	85.60	9.70	850.0	9.70	7.81	0.753	228.20	15.70	3.40	0.6000
Other	5/10/2010	Mill	Shasta	84.00	8.77	696.0	13.30	7.88	N/A	285.10	5.00	N/A	1.6000
Other	5/12/2010	Mill	Shasta	86.90	8.35	702.0	17.40	7.85	N/A	686.00	12.20	2.00	4.0000
Other	5/19/2010	Mill	Shasta	87.50	8.59	674.0	16.00	7.86	N/A	1046.20	11.70	1.80	BDL
Other	5/25/2010	Mill	Shasta	86.20	8.11	699.0	18.30	7.84	N/A	1119.90	4.00	N/A	BDL
Other	5/26/2010	Mill	Shasta	88.80	8.35	704.0	18.30	7.88	N/A	1413.60	6.00	N/A	BDL
								Total Geomean		598.99			
								Excluding Flood		544.33			
Wet Weather	2/24/2011	Mill	Shasta	91.60	9.92	328.8	11.80	7.80	9.372	1413.60	23.70	2.70	12.0000
Wet Weather	4/20/2011	Mill	Shasta	89.20	8.79	614.0	15.80	7.70	2.935	344.80	5.30	N/A	1.5000
Wet Weather	4/26/2011	Mill	Shasta	86.60	8.23	400.4	18.00	7.62	2.510	2419.60	3.30	N/A	3.4300
Wet Weather	6/27/2011	Mill	Shasta	83.90	7.62	621.0	19.80	7.79	0.862	1203.30	1.30	N/A	2.0000

Table 13A.1 – TMDL Monitoring Data Since 2010 (Continued)

Project Name	Date	Watershed	Site Name	DO %	DO mg/L	Cond	Temp C	pH	Flow	E coli	PCR All	PCR Huback	TSS
Dry Weather	4/5/2010	Mill	Sevenmile 2	146.40	13.49	538.0	19.20	8.58	10.425	46.40	2.70	N/A	0.6000
Dry Weather	4/7/2010	Mill	Sevenmile 2	123.80	12.02	557.0	16.90	8.41	9.117	125.00	2.90	N/A	BDL
Dry Weather	4/12/2010	Mill	Sevenmile 2	129.00	13.08	560.0	14.60	8.43	7.553	344.80	4.70	N/A	BDL
Dry Weather	4/19/2010	Mill	Sevenmile 2	128.80	13.41	572.0	13.40	8.47	0.000	325.50	8.70	N/A	1.0000
Dry Weather	4/21/2010	Mill	Sevenmile 2	141.70	14.35	559.0	15.10	8.65	5.764	140.10	10.40	0.60	0.2000
Dry Weather	7/6/2010	Mill	Sevenmile 2	103.70	8.72	564.0	23.90	8.23	3.386	344.10	19.40	0.50	1.4000
Dry Weather	7/19/2010	Mill	Sevenmile 2	103.90	8.74	572.0	24.20	8.20	BDL	547.50	10.20	BDL	1.6000
Dry Weather	7/20/2010	Mill	Sevenmile 2	99.20	8.31	537.0	24.20	8.16	5.977	365.40	9.60	N/A	0.4000
Dry Weather	7/21/2010	Mill	Sevenmile 2	103.10	8.57	535.0	24.80	8.22	6.126	435.20	12.10	0.20	0.6000
Dry Weather	7/29/2010	Mill	Sevenmile 2	98.40	7.99	577.0	25.90	8.22	6.436	686.70	23.40	0.10	1.0000
Dry Weather	9/21/2010	Mill	Sevenmile 2	95.50	8.40	628.0	21.50	7.97	3.189	461.10	15.60	0.60	0.6000
Dry Weather	10/19/2010	Mill	Sevenmile 2	79.30	8.20	638.0	14.10	8.05	2.423	547.50	2.40	N/A	0.8000
Dry Weather	11/29/2010	Mill	Sevenmile 2	131.40	14.79	569.0	10.20	7.83	7.159	161.60	2.40	N/A	0.4000
Dry Weather	12/29/2010	Mill	Sevenmile 2	98.30	12.39	627.0	5.40	7.64	4.475	238.20	4.40	N/A	10.6000
Dry Weather	2/14/2011	Mill	Sevenmile 2	174.50	19.28	605.0	10.90	8.89	8.357	17.30	18.00	2.40	1.4000
Other	5/10/2010	Mill	Sevenmile 2	89.30	9.18	549.0	13.90	8.06	N/A	461.10	7.90	N/A	3.8000
Other	5/12/2010	Mill	Sevenmile 2	96.20	9.24	545.0	18.00	7.85	N/A	224.00	22.60	0.50	3.0000
Other	5/19/2010	Mill	Sevenmile 2	94.30	9.24	533.0	16.20	8.02	N/A	435.20	2.80	N/A	BDL
Other	5/25/2010	Mill	Sevenmile 2	103.90	9.47	549.0	19.80	8.18	N/A	579.40	5.40	N/A	BDL
Other	5/26/2010	Mill	Sevenmile 2	94.20	8.67	555.0	19.40	8.08	N/A	547.50	6.10	N/A	BDL
								Total Geomean		270.80			
								Excluding Flood		232.59			
Wet Weather	10/13/2010	Mill	Sevenmile 2	88.30	8.36	513.0	17.90	7.60	3.222	488.40	10.20	BDL	0.4000
Wet Weather	2/24/2011	Mill	Sevenmile 2	93.70	10.20	505.0	11.50	8.00	66.070	1119.90	24.30	2.30	30.8000
Wet Weather	4/20/2011	Mill	Sevenmile 2	98.60	9.65	532.0	16.40	8.04	28.357	435.20	3.80	N/A	1.2500
Wet Weather	4/26/2011	Mill	Sevenmile 2	102.90	9.65	429.8	19.10	8.16	52.642	2419.60	3.50	N/A	8.0000
Wet Weather	6/27/2011	Mill	Sevenmile 2	95.10	8.46	470.1	21.30	8.02	8.390	579.40	2.60	N/A	2.0000

Table 13A.1 – TMDL Monitoring Data Since 2010 (Continued)

Project Name	Date	Watershed	Site Name	DO %	DO mg/L	Cond	Temp C	pH	Flow	E coli	PCR All	PCR Huback	TSS
Dry Weather	4/5/2010	Mill	Sevenmile 1	116.40	11.12	513.0	17.20	8.40	25.567	129.60	2.60	N/A	0.8000
Dry Weather	4/7/2010	Mill	Sevenmile 1	124.60	11.46	505.0	19.40	8.58	24.501	116.20	5.20	N/A	0.8000
Dry Weather	4/12/2010	Mill	Sevenmile 1	92.80	9.62	528.0	13.60	8.05	14.244	146.70	8.50	N/A	1.6000
Dry Weather	4/19/2010	Mill	Sevenmile 1	98.00	9.91	526.0	13.40	8.15	BDL	517.20	12.50	0.20	2.2000
Dry Weather	4/21/2010	Mill	Sevenmile 1	98.60	10.10	520.0	14.00	8.23	10.792	178.50	7.00	N/A	1.6000
Dry Weather	7/6/2010	Mill	Sevenmile 1	95.80	8.20	518.0	22.90	8.16	9.200	272.30	24.20	0.50	1.8000
Dry Weather	7/19/2010	Mill	Sevenmile 1	98.10	8.28	535.0	23.70	8.24	BDL	365.40	12.10	0.50	2.0000
Dry Weather	7/20/2010	Mill	Sevenmile 1	93.90	7.90	533.0	23.70	8.12	13.788	344.80	25.50	0.10	2.2000
Dry Weather	7/21/2010	Mill	Sevenmile 1	94.60	7.96	535.0	24.10	8.15	11.208	435.20	17.40	0.50	2.4000
Dry Weather	7/29/2010	Mill	Sevenmile 1	87.80	7.18	534.0	25.60	8.07	7.712	613.10	6.30	N/A	1.0000
Dry Weather	9/21/2010	Mill	Sevenmile 1	91.60	7.90	516.0	22.40	7.92	9.388	579.40	6.50	2.60	1.4000
Dry Weather	10/19/2010	Mill	Sevenmile 1	72.30	7.31	515.0	16.50	7.85	3.930	130.10	2.10	N/A	2.2000
Dry Weather	11/29/2010	Mill	Sevenmile 1	102.00	11.43	544.0	10.60	8.28	13.855	71.20	2.50	0.30	1.0000
Dry Weather	12/29/2010	Mill	Sevenmile 1	108.00	13.50	570.0	5.50	8.12	6.976	46.50	7.00	1.70	0.6000
Dry Weather	2/14/2011	Mill	Sevenmile 1	132.30	15.05	510.0	9.50	8.59	25.165	54.60	24.00	3.50	3.0000
Other	5/10/2010	Mill	Sevenmile 1	88.10	9.06	518.0	14.10	8.13	N/A	579.40	5.80	N/A	2.4000
Other	5/12/2010	Mill	Sevenmile 1	93.40	8.66	518.0	19.10	8.16	N/A	517.00	22.40	2.80	2.8000
Other	5/19/2010	Mill	Sevenmile 1	93.40	9.21	511.0	16.20	8.12	N/A	517.20	4.10	N/A	BDL
Other	5/25/2010	Mill	Sevenmile 1	95.10	8.61	518.0	20.00	8.22	N/A	648.80	8.70	N/A	BDL
Other	5/26/2010	Mill	Sevenmile 1	99.00	8.98	520.0	19.80	8.19	N/A	686.70	8.30	N/A	BDL
									Total Geomean	258.36			
									Excluding Flood	196.65			
Wet Weather	10/13/2010	Mill	Sevenmile 1	68.70	6.52	421.0	18.30	7.31	11.694	2419.60	41.20	0.50	1.6000
Wet Weather	2/24/2011	Mill	Sevenmile 1	106.20	121.13	376.0	11.50	7.99	224.270	3880.00	31.30	6.80	59.2000
Wet Weather	4/20/2011	Mill	Sevenmile 1	101.50	9.86	489.3	16.60	8.09	59.102	365.40	2.40	N/A	2.7500
Wet Weather	4/26/2011	Mill	Sevenmile 1	110.50	10.39	361.9	18.30	7.97	96.618	1580.00	3.60	N/A	11.1400
Wet Weather	6/27/2011	Mill	Sevenmile 1	107.00	9.23	472.0	22.80	8.24	9.348	648.80	1.10	N/A	2.4000

Table 13A.1 – TMDL Monitoring Data Since 2010 (Continued)

Project Name	Date	Watershed	Site Name	DO %	DO mg/L	Cond	Temp C	pH	Flow	E coli	PCR All	PCR Huback	TSS
Dry Weather	3/8/2011	Richland	Richland golf	103.70	11.50	523.0	10.60	8.04	40.676	1732.90	N/A	N/A	1.0000
Dry Weather	3/18/2011	Richland	Richland golf	94.50	9.67	533.0	14.10	7.86	13.030	111.90	N/A	N/A	1.4000
Dry Weather	3/21/2011	Richland	RIchland golf	103.70	10.46	528.0	16.10	8.00	7.474	218.70	N/A	N/A	2.0000
Dry Weather	3/22/2011	Richland	Richland golf	101.90	10.07	523.0	16.80	7.97	4.525	151.50	N/A	N/A	3.0000
Dry Weather	3/23/2011	Richland	Richland golf	15.30	11.04	513.0	17.40	8.37	0.000	105.40	N/A	N/A	2.2000
Dry Weather	3/25/2011	Richland	Richland golf	98.10	10.99	508.0	10.00	7.92	5.219	20.10	N/A	N/A	1.2000
Dry Weather	7/11/2011	Richland	Richland golf	58.50	4.42	457.2	27.20	7.46	0.000	155.30	N/A	N/A	4.0000
Dry Weather	7/21/2011	Richland	Richland golf	134.70	9.40	423.4	31.10	8.03	0.000	26.10	N/A	N/A	0.0000

Table 13A.1 – TMDL Monitoring Data Since 2010 (Continued)

Project Name	Date	Watershed	Site Name	DO %	DO mg/L	Cond	Temp C	pH	Flow	E coli	PCR All	PCR Huback	TSS
Dry Weather	3/18/2011	Richland	Richland 3	129.90	13.34	539.0	14.50	8.61	5.576	240.00	1.60	N/A	0.6000
Dry Weather	3/21/2011	Richland	Richland 3	148.90	14.44	506.0	16.90	8.85	3.288	98.70	2.10	N/A	1.4000
Dry Weather	3/22/2011	Richland	Richland 3	159.60	15.47	504.0	17.40	8.78	3.824	117.80	5.10	N/A	1.0000
Dry Weather	3/23/2011	Richland	Richland 3	127.50	11.83	524.0	17.10	8.71	2.750	365.40	5.00	N/A	0.6000
Dry Weather	3/25/2011	Richland	Richland 3	133.80	15.49	535.0	9.10	8.71	1.575	121.10	5.20	N/A	0.6000
Dry Weather	7/11/2011	Richland	Richland 3	100.60	7.96	585.0	26.20	8.03	0.000	325.50	2.40	N/A	1.6000
Dry Weather	7/12/2011	Richland	Richland 3	64.30	5.19	565.0	23.60	0.00	0.874	461.10	2.60	N/A	2.4000
Dry Weather	7/13/2011	Richland	Richland 3	83.50	6.82	528.0	25.10	7.85	0.000	1046.20	4.50	N/A	42.4000
Dry Weather	7/14/2011	Richland	Richland 3	82.90	6.73	443.8	26.30	7.50	0.000	1986.30	3.90	N/A	4.0000
Dry Weather	7/21/2011	Richland	Richland 3	100.20	7.83	548.0	28.00	8.43	0.869	866.40	2.20	N/A	0.8000
Dry Weather	10/3/2011	Richland	Richland 3	93.80	10.14	629.0	11.80	8.25	0.359	488.40	1.60	N/A	1.2000
Dry Weather	10/4/2011	Richland	Richland 3	101.40	9.69	628.0	16.90	8.42	0.840	517.20	1.40	N/A	0.4000
Dry Weather	10/5/2011	Richland	Richland 3	100.70	9.95	628.0	14.70	8.29	0.478	275.50	13.90	1.50	9.6000
Dry Weather	10/6/2011	Richland	Richland 3	109.50	10.60	636.0	16.30	8.30	0.108	378.40	2.00	N/A	BDL
Dry Weather	10/24/2011	Richland	Richland 3	N/A	N/A	N/A	N/A	N/A	N/A	60.50	1.00	N/A	BDL
Dry Weather	1/4/2012	Richland	Richland 3	112.30	13.52	567.0	7.10	853.00	2.270	224.70	1.50	N/A	BDL
Dry Weather	1/5/2012	Richland	Richland 3	111.30	13.65	576.0	6.30	8.41	2.210	160.70	0.50	N/A	BDL
Dry Weather	1/31/2012	Richland	Richland 3	114.70	13.41	533.0	9.80	8.35	6.270	142.10	1.00	N/A	0.4000
Dry Weather	2/6/2012	Richland	Richland 3	116.30	12.59	516.0	11.40	8.37	9.730	93.40	1.80	N/A	1.2000
Dry Weather	2/7/2012	Richland	Richland 3	114.60	13.12	526.0	9.40	8.41	13.210	101.40	0.80	N/A	2.0000
								Total Geomean		263.40			
Wet Weather	5/24/2011	Richland	Richland 3	104.40	9.35	493.6	8.37	N/A	13.710	1299.70	2.20	N/A	1.6000
Wet Weather	6/27/2011	Richland	Richland 3	89.80	7.77	545.0	22.70	8.39	0.729	1119.90	1.70	N/A	2.4000
Wet Weather	9/15/2011	Richland	Richland 3	85.50	7.98	587.0	18.40	7.97	3.540	2419.60	5.20	N/A	1.6000
Wet Weather	11/15/2011	Richland	Richland 3	64.70	6.44	383.3	15.50	7.70	4.120	5120.00	22.40	0.80	BDL
Wet Weather	1/11/2012	Richland	Richland 3	98.80	10.56	352.7	12.20	7.74	64.560	2530.00	7.50	N/A	21.6000

Table 13A.1 – TMDL Monitoring Data Since 2010 (Continued)

Project Name	Date	Watershed	Site Name	DO %	DO mg/L	Cond	Temp C	pH	Flow	E coli	PCR All	PCR Huback	TSS
Dry Weather	3/8/2011	Richland	Richland 2	98.70	10.86	545.0	11.00	7.65	N/A	1299.70	8.50	N/A	1.6000
Dry Weather	3/18/2011	Richland	Richland 2	90.70	9.19	553.0	14.70	7.75	N/A	160.70	2.80	N/A	2.0000
Dry Weather	3/21/2011	Richland	Richland 2	101.30	9.71	536.0	16.40	7.92	N/A	209.80	4.60	N/A	1.8000
Dry Weather	3/22/2011	Richland	Richland 2	88.80	8.96	535.0	16.10	7.81	N/A	135.40	2.50	N/A	1.8000
Dry Weather	3/23/2011	Richland	Richland 2	100.20	9.46	532.0	17.20	7.95	N/A	122.30	4.10	N/A	2.6000
Dry Weather	3/25/2011	Richland	Richland 2	99.00	11.10	537.0	10.50	7.98	N/A	146.70	2.50	N/A	1.4000
Dry Weather	7/11/2011	Richland	Richland 2	85.60	6.92	505.0	26.40	7.83	3.000	224.70	6.00	N/A	3.2000
Dry Weather	7/12/2011	Richland	Richland 2	66.70	5.40	536.0	26.80	7.71	2.500	206.40	5.20	N/A	10.0000
Dry Weather	7/13/2011	Richland	Richland 2	70.40	5.72	546.0	25.90	7.71	2.600	131.40	12.40	1.40	1.2000
Dry Weather	7/14/2011	Richland	Richland 2	72.80	5.89	544.0	26.10	7.65	13.000	50.40	3.60	N/A	3.2000
Dry Weather	7/21/2011	Richland	Richland 2	89.40	6.96	521.0	28.10	7.80	3.100	151.50	9.00	N/A	0.4000
Dry Weather	10/3/2011	Richland	Richland 2	85.10	8.65	587.0	14.70	7.88	5.600	155.30	5.00	N/A	1.6000
Dry Weather	10/4/2011	Richland	Richland 2	87.80	8.88	587.0	15.00	7.75	5.600	160.70	3.10	N/A	1.6000
Dry Weather	10/5/2011	Richland	Richland 2	81.40	8.09	582.0	15.50	7.72	5.200	75.40	3.10	N/A	2.0000
Dry Weather	10/6/2011	Richland	Richland 2	98.70	9.28	580.0	18.80	7.88	5.100	51.20	2.70	N/A	BDL
Dry Weather	10/24/2011	Richland	Richland 2	N/A	N/A	N/A	N/A	N/A	5.400	65.70	1.80	N/A	4.8000
Dry Weather	1/4/2012	Richland	Richland 2	102.70	12.45	562.0	7.00	8.16	24.000	52.90	2.50	N/A	BDL
Dry Weather	1/5/2012	Richland	Richland 2	106.70	12.44	553.0	9.20	8.17	23.000	58.60	3.20	N/A	2.0000
Dry Weather	1/31/2012	Richland	Richland 2	92.40	10.24	543.0	10.70	7.53	34.000	108.10	1.10	N/A	0.8000
Dry Weather	2/6/2012	Richland	Richland 2	95.50	10.25	524.0	11.70	7.85	42.000	261.30	3.50	N/A	1.2000
Dry Weather	2/7/2012	Richland	Richland 2	99.90	11.24	532.0	10.00	8.09	35.000	161.60	1.60	N/A	1.3600
								Total Geomean		133.67			

Table 13A.1 – TMDL Monitoring Data Since 2010 (Continued)

Project Name	Date	Watershed	Site Name	DO %	DO mg/L	Cond	Temp C	pH	Flow	E coli	PCR All	PCR Huback	TSS
Dry Weather	3/8/2011	Richland	Richland 1	103.40	11.26	552.0	11.20	7.94	145.890	1413.60	8.60	N/A	1.4000
Dry Weather	3/18/2011	Richland	Richland 1	92.70	9.44	564.0	14.50	7.81	88.692	95.90	2.40	N/A	0.8000
Dry Weather	3/21/2011	Richland	Richland 1	114.20	11.71	535.0	16.40	7.86	77.914	98.80	2.60	N/A	0.2000
Dry Weather	3/22/2011	Richland	Richland 1	113.60	11.22	551.0	15.80	7.91	61.399	85.70	5.70	N/A	1.0000
Dry Weather	3/23/2011	Richland	Richland 1	124.90	12.02	547.0	17.10	7.94	79.524	68.30	1.90	N/A	1.6000
Dry Weather	7/11/2011	Richland	Richland 1	118.80	9.33	544.0	28.00	8.30	15.910	84.20	4.60	N/A	1.6000
Dry Weather	7/12/2011	Richland	Richland 1	84.70	6.68	545.0	27.40	7.96	2.500	127.40	4.30	N/A	0.4000
Dry Weather	7/13/2011	Richland	Richland 1	79.10	6.42	564.0	25.80	7.78	5.190	155.30	12.50	2.50	1.6000
Dry Weather	7/14/2011	Richland	Richland 1	90.70	7.27	553.0	26.70	7.86	3.720	82.30	8.80	N/A	1.6000
Dry Weather	7/21/2011	Richland	Richland 1	107.50	7.81	445.9	31.70	8.26	9.050	34.50	4.50	N/A	0.8000
Dry Weather	10/3/2011	Richland	Richland 1	87.30	915.00	605.0	13.10	7.98	11.780	218.70	6.70	N/A	0.4000
Dry Weather	10/4/2011	Richland	Richland 1	92.40	9.43	599.0	14.40	8.02	16.920	58.60	1.20	N/A	0.4000
Dry Weather	10/5/2011	Richland	Richland 1	89.90	9.04	590.0	14.90	7.81	10.640	53.80	1.40	N/A	1.6000
Dry Weather	10/6/2011	Richland	Richland 1	N/A	N/A	N/A	N/A	N/A	15.500	69.70	7.50	N/A	2.4000
Dry Weather	10/24/2011	Richland	Richland 1	N/A	N/A	N/A	N/A	N/A	10.900	19.70	1.70	N/A	2.0000
Dry Weather	1/4/2012	Richland	Richland 1	115.50	14.31	566.0	6.40	8.21	39.040	48.00	2.70	N/A	BDL
Dry Weather	1/5/2012	Richland	Richland 1	126.50	14.63	525.0	9.10	8.37	221.000	19.90	1.50	N/A	2.0000
Dry Weather	1/31/2012	Richland	Richland 1	93.80	10.35	542.0	10.60	7.56	131.540	133.40	1.10	N/A	1.2000
Dry Weather	2/6/2012	Richland	Richland 1	95.80	10.37	527.0	11.70	7.28	117.460	133.40	3.90	N/A	3.6000
Dry Weather	2/7/2012	Richland	Richland 1	109.90	12.04	530.0	11.20	8.32	78.460	70.60	1.50	N/A	BDL
							Total Geomean			85.36			
Wet Weather	5/24/2011	Richland	Richland 1	87.40	8.36	252.1	19.40	7.24	224.900	2419.60	6.80	N/A	48.0000
Wet Weather	6/27/2011	Richland	Richland 1	106.40	8.50	457.0	25.90	8.24	9.260	186.00	4.80	N/A	2.4000
Wet Weather	9/15/2011	Richland	Richland 1	76.30	6.79	404.9	20.30	7.55	55.850	1986.30	3.90	N/A	4.4000
Wet Weather	11/15/2011	Richland	Richland 1	76.60	7.41	293.0	15.70	7.70	104.000	4480.00	19.30	0.30	BDL
Wet Weather	1/11/2012	Richland	Richland 1	91.60	9.88	204.7	11.80	6.93	990.720	4850.00	6.60	N/A	196.4000

Table 13A.1 – TMDL Monitoring Data Since 2010 (Continued)

Project Name	Date	Watershed	Site Name	DO %	DO mg/L	Cond	Temp C	pH	Flow	E coli	PCR All	PCR Huback	TSS
Dry Weather	3/9/2010	Mill	Pavillion	111.60	12.36	532.0	10.70	8.16	1.410	307.60	0.60	N/A	0.8000
Dry Weather	3/10/2010	Mill	Pavillion	125.30	13.21	523.0	12.90	8.45	1.930	238.20	0.70	N/A	1.0000
Dry Weather	3/17/2010	Mill	Pavillion	100.00	10.93	569.0	11.30	8.10	1.916	122.30	0.50	N/A	BDL
Dry Weather	3/24/2010	Mill	Pavillion	103.50	11.02	558.0	12.40	8.09	2.710	135.40	0.60	N/A	BDL
Dry Weather	3/31/2010	Mill	Pavillion	103.70	10.81	536.0	13.50	8.07	2.882	79.40	0.50	N/A	1.2000
Dry Weather	6/8/2010	Mill	Pavillion	83.30	7.59	546.0	19.80	7.88	1.197	325.50	3.80	N/A	1.8000
Dry Weather	6/15/2010	Mill	Pavillion	90.80	7.96	564.0	21.70	7.80	1.727	360.90	3.10	N/A	4.0000
Dry Weather	6/16/2010	Mill	Pavillion	36.50	3.19	554.0	21.90	7.82	1.240	478.60	2.50	N/A	2.4000
Dry Weather	6/22/2010	Mill	Pavillion	80.00	6.92	523.0	21.70	7.78	2.027	290.90	2.50	N/A	0.8000
Dry Weather	6/24/2010	Mill	Pavillion	80.70	6.97	564.0	22.50	7.80	2.273	307.60	7.90	N/A	0.8000
Dry Weather	9/20/2010	Mill	Pavillion	77.00	6.79	548.0	21.20	7.74	0.751	1119.90	1.50	N/A	1.0000
Dry Weather	10/5/2010	Mill	Pavillion	86.80	8.84	527.0	14.50	7.88	1.419	920.80	3.00	N/A	30.2000
Dry Weather	12/8/2010	Mill	Pavillion	104.30	12.45	556.0	7.50	7.76	1.776	108.60	1.10	N/A	BDL
Dry Weather	1/6/2011	Mill	Pavillion	102.80	11.95	568.0	8.60	7.88	2.232	156.50	3.10	N/A	0.4000
Dry Weather	2/3/2011	Mill	Pavillion	98.40	11.14	583.0	9.40	7.81	BDL	77.10	11.80	3.50	2.8000
Other	5/11/2010	Mill	Pavillion	87.50	8.60	552.0	16.10	7.77	N/A	344.80	7.40	N/A	3.0000
Other	5/13/2010	Mill	Pavillion	83.60	7.96	553.0	18.10	7.79	N/A	307.00	4.10	N/A	1.4000
Other	5/19/2010	Mill	Pavillion	83.40	8.04	560.0	17.10	7.86	N/A	920.80	5.10	N/A	BDL
Other	5/25/2010	Mill	Pavillion	83.50	7.69	567.0	19.30	7.95	N/A	290.90	7.10	N/A	BDL
Other	5/26/2010	Mill	Pavillion	88.40	8.12	570.0	19.50	7.87	N/A	248.10	4.60	N/A	BDL
							Total Geomean			271.13			
							Excluding Flood			244.20			
Wet Weather	2/24/2011	Mill	Pavillion	90.90	9.92	268.0	11.60	7.79	9.600	676.70	17.20	3.70	46.0000
Wet Weather	4/26/2011	Mill	Pavillion	84.70	8.23	731.0	16.80	7.63	5.282	1732.90	1.70	N/A	6.2900
Wet Weather	4/20/2011	Mill	Pavillion	83.40	8.33	458.9	16.40	7.67	4.395	387.30	1.00	N/A	2.7500
Wet Weather	6/27/2011	Mill	Pavillion	83.00	7.31	532.0	21.60	7.83	0.838	740.00	2.30	N/A	0.4000

Table 13A.1 – TMDL Monitoring Data Since 2010 (Continued)

Project Name	Date	Watershed	Site Name	DO %	DO mg/L	Cond	Temp C	pH	Flow	E coli	PCR All	PCR Huback	TSS
Dry Weather	4/2/2012	Pages Branch	Pages Branch	84.80	8.12	634.0	16.50	7.94	1.380	143.90	N/A	N/A	N/A
Dry Weather	4/3/2012	Pages Branch	Pages Branch	83.50	8.24	631.0	16.70	7.27	1.954	38.90	N/A	N/A	N/A
Dry Weather	4/4/2012	Pages Branch	Pages Branch	91.90	8.27	542.0	20.00	8.32	5.625	40.50	N/A	N/A	N/A
Dry Weather	4/10/2012	Pages Branch	Pages Branch	91.00	9.43	626.0	13.50	7.23	BDL	146.70	N/A	N/A	N/A
Dry Weather	4/24/2012	Pages Branch	Pages Branch	76.50	7.89	636.0	13.90	7.90	BDL	178.90	N/A	N/A	N/A
Dry Weather	7/31/2012	Pages Branch	Pages Branch	67.40	5.98	712.0	22.00	7.81	BDL	241.50	N/A	N/A	N/A
Dry Weather	8/13/2012	Pages Branch	Pages Branch	79.60	7.05	710.0	20.00	7.22	BDL	272.30	N/A	N/A	N/A
Other	5/25/2010	Pages	Pages 1	95.20	9.12	713.0	17.20	7.71	N/A	260.30	N/A	N/A	N/A
Other	5/10/2010	Pages	Pages 1	74.00	7.45	546.0	14.00	7.79	N/A	290.90	N/A	N/A	N/A
Other	5/11/2010	Pages	Pages 1	91.70	9.19	688.0	15.30	7.97	N/A	235.90	N/A	N/A	N/A
Other	5/13/2010	Pages	Pages 1	96.60	9.29	595.0	17.10	8.04	N/A	160.00	N/A	N/A	N/A
Other	5/19/2010	Pages	Pages 1	90.70	9.00	699.0	15.70	7.91	N/A	275.50	N/A	N/A	N/A
							Total Geomean			161.21			
							Excluding Flood			121.52			

Table 13A.1 – TMDL Monitoring Data Since 2010 (Continued)

Project Name	Date	Watershed	Site Name	DO %	DO mg/L	Cond	Temp C	pH	Flow	E coli	PCR All	PCR Huback	TSS
Dry Weather	4/2/2012	Gibson	Neeley's Branch	79.30	7.51	556.0	18.10	8.02	0.113	272.30	N/A	N/A	N/A
Dry Weather	4/3/2012	Gibson	Neeley's Branch	87.50	8.08	556.0	19.20	7.91	1.758	387.30	N/A	N/A	N/A
Dry Weather	4/4/2012	Gibson	Neeley's Branch	83.30	7.69	508.0	19.10	7.73	0.741	344.80	N/A	N/A	N/A
Dry Weather	4/10/2012	Gibson	Neeley's Branch	89.10	9.63	572.0	13.90	7.98	BDL	365.40	N/A	N/A	N/A
Dry Weather	4/24/2012	Gibson	Neeley's Branch	85.50	9.15	570.0	12.20	7.86	BDL	770.10	N/A	N/A	N/A
Dry Weather	7/31/2012	Gibson	Neeley's Branch	82.70	6.81	412.0	25.30	7.90	BDL	2419.60	N/A	N/A	N/A
Dry Weather	8/13/2012	Gibson	Neeley's Branch	79.60	6.92	522.0	23.10	8.02	BDL	1203.30	N/A	N/A	N/A
Other	5/10/2010	Gibson	Neeley's	73.50	7.57	619.0	14.00	8.03	N/A	261.30	N/A	N/A	N/A
Other	5/11/2010	Gibson	Neeley's	78.40	7.71	612.0	15.90	8.00	N/A	387.30	N/A	N/A	N/A
Other	5/13/2010	Gibson	Neeley's	91.60	8.38	692.0	19.50	8.07	N/A	1046.00	N/A	N/A	N/A
Other	5/19/2010	Gibson	Neeley's	92.80	8.78	566.0	18.00	8.19	N/A	547.50	N/A	N/A	N/A
Other	5/25/2010	Gibson	Neeley's	92.60	8.49	601.0	19.60	8.18	N/A	410.60	N/A	N/A	N/A
							Total Geomean			546.45			
							Excluding Flood			605.36			

Table 13A.1 – TMDL Monitoring Data Since 2010 (Continued)

Project Name	Date	Watershed	Site Name	DO %	DO mg/L	Cond	Temp C	pH	Flow	E coli	PCR All	PCR Huback	TSS
Dry Weather	3/8/2011	Richland	Murphy	91.10	9.27	637.0	14.20	7.71	7.044	86.50	3.80	N/A	0.8000
Dry Weather	3/18/2011	Richland	Murphy	86.10	8.70	618.0	15.00	7.40	4.101	16.00	1.50	N/A	0.8000
Dry Weather	3/21/2011	Richland	Murphy	81.70	8.01	605.0	16.10	7.48	BDL	32.40	2.60	N/A	7.4000
Dry Weather	3/22/2011	Richland	Murphy	85.00	8.35	602.0	15.60	7.54	1.644	4.10	5.80	N/A	0.4000
Dry Weather	3/23/2011	Richland	Murphy	91.30	8.96	598.0	15.70	7.49	BDL	29.50	2.40	N/A	0.2000
Dry Weather	3/25/2011	Richland	Murphy	89.50	9.22	602.0	13.70	7.55	1.650	90.80	3.40	N/A	6.2000
Dry Weather	7/11/2011	Richland	Murphy	96.10	8.53	561.0	21.50	7.98	BDL	156.50	1.40	N/A	0.0000
Dry Weather	7/12/2011	Richland	Murphy	80.20	6.69	571.0	24.30	8.09	BDL	48.80	4.50	N/A	1.2000
Dry Weather	7/13/2011	Richland	Murphy	107.30	9.20	586.0	22.10	7.95	BDL	21.30	2.80	N/A	0.8000
Dry Weather	7/14/2011	Richland	Murphy	100.00	8.84	577.0	21.20	7.97	BDL	61.30	1.40	N/A	1.2000
Dry Weather	7/21/2011	Richland	Murphy	100.30	7.18	615.0	24.60	7.87	BDL	148.30	10.10	BDL	0.4000
Dry Weather	10/3/2011	Richland	Murphy	92.50	8.73	626.0	18.10	8.01	0.605	23.30	7.40	N/A	2.0000
Dry Weather	10/4/2011	Richland	Murphy	111.10	10.40	624.0	18.10	7.99	1.080	29.50	3.10	N/A	3.6000
Dry Weather	10/5/2011	Richland	Murphy	90.50	8.68	612.0	17.40	7.97	0.715	46.40	3.50	N/A	BDL
Dry Weather	10/6/2011	Richland	Murphy	106.70	9.60	590.0	20.50	8.25	0.950	25.90	5.70	N/A	18.0000
Dry Weather	10/24/2011	Richland	Murphy	0.00	0.00	0.0	0.00	0.00	0.122	104.30	22.20	0.60	4.4000
Dry Weather	1/4/2012	Richland	Murphy	85.20	8.79	613.0	14.10	7.50	2.450	9.70	1.50	N/A	0.0000
Dry Weather	1/5/2012	Richland	Murphy	88.80	8.98	514.0	14.80	7.65	2.840	1.00	2.30	N/A	1.6000
Dry Weather	1/31/2012	Richland	Murphy	88.90	8.99	603.0	14.70	7.54	5.320	25.90	0.50	N/A	1.2000
Dry Weather	2/6/2012	Richland	Murphy	85.40	8.65	593.0	14.70	7.59	2.830	22.80	0.30	N/A	0.8000
Dry Weather	2/7/2012	Richland	Murphy	88.00	8.89	603.0	14.60	7.69	5.120	18.70	1.80	N/A	2.8000
							Total Geomean			29.37			
Wet Weather	5/24/2011	Richland	Murphy	95.20	9.00	482.0	17.90	7.60	14.990	2419.60	5.00	N/A	17.2000
Wet Weather	6/27/2011	Richland	Murphy	74.80	6.65	594.0	21.90	7.99	N/A	166.40	4.00	N/A	4.8000
Wet Weather	9/15/2011	Richland	Murphy	98.10	8.82	603.0	20.20	7.63	1.420	410.60	12.70	2.50	2.8000
Wet Weather	11/15/2011	Richland	Murphy	70.30	7.73	308.1	17.00	7.61	4.520	3930.00	25.60	3.70	0.0000
Wet Weather	1/11/2012	Richland	Murphy	92.80	9.39	504.0	13.90	7.51	14.630	3500.00	49.20	6.10	5.6000

Table 13A.1 – TMDL Monitoring Data Since 2010 (Continued)

Project Name	Date	Watershed	Site Name	DO %	DO mg/L	Cond	Temp C	pH	Flow	E coli	PCR All	PCR Huback	TSS
Dry Weather	8/4/2010	Mill	Mill 5	46.90	3.69	496.0	27.20	7.52	N/A	2419.60	10.40	BDL	57.6000
Dry Weather	8/16/2010	Mill	Mill 5	41.70	3.10	483.0	27.10	7.40	N/A	365.40	8.90	N/A	35.0000
Dry Weather	8/17/2010	Mill	Mill 5	52.40	4.18	487.0	26.30	7.61	N/A	435.20	16.70	BDL	35.8000
Dry Weather	8/24/2010	Mill	Mill 5	71.90	6.14	568.0	23.10	7.80	3.224	261.30	11.60	0.50	3.2000
Dry Weather	8/25/2010	Mill	Mill 5	77.40	6.62	579.0	22.90	7.82	N/A	344.80	11.50	0.50	6.6000
Dry Weather	9/22/2010	Mill	Mill 5	40.30	3.43	522.0	23.00	7.38	N/A	231.00	2.40	N/A	4.2000
Dry Weather	10/19/2010	Mill	Mill 5	42.00	4.28	557.0	14.10	7.58	N/A	57.10	5.80	N/A	42.8000
Dry Weather	11/10/2010	Mill	Mill 5	66.30	7.62	646.0	9.30	7.36	N/A	39.90	3.60	N/A	1.6000
Dry Weather	12/28/2010	Mill	Mill 5	103.70	14.60	286.0	0.70	7.44	N/A	195.60	3.50	N/A	0.2000
Dry Weather	2/23/2011	Mill	Mill 5	124.80	14.45	467.3	8.80	8.43	9.072	142.10	27.80	6.50	BDL
							Total Geomean			234.70			
Wet Weather	10/13/2010	Mill	Mill 5	42.00	4.03	540.0	17.20	7.26	N/A	1553.10	18.70	0.50	9.2000
Wet Weather	2/24/2011	Mill	Mill 5	90.60	10.13	412.9	10.20	7.86	122.050	16740.00	114.10	8.40	40.0000
Wet Weather	4/20/2011	Mill	Mill 5	101.80	9.84	448.3	16.80	8.11	49.192	307.60	4.20	N/A	2.7500
Wet Weather	4/26/2011	Mill	Mill 5	77.50	7.34	411.6	18.00	7.63	60.546	2790.00	6.20	N/A	12.0000
Wet Weather	6/27/2011	Mill	Mill 5	81.50	7.19	511.0	21.20	7.91	46.704	298.70	5.20	N/A	2.0000

Table 13A.1 – TMDL Monitoring Data Since 2010 (Continued)

Project Name	Date	Watershed	Site Name	DO %	DO mg/L	Cond	Temp C	pH	Flow	E coli	PCR All	PCR Huback	TSS
Dry Weather	3/8/2010	Mill	Mill 3	123.70	13.53	512.0	11.20	8.59	46.180	7.50	9.40	N/A	0.4000
Dry Weather	3/10/2010	Mill	Mill 3	95.10	10.31	504.0	11.80	8.28	61.820	106.70	7.00	N/A	2.6000
Dry Weather	3/17/2010	Mill	Mill 3	86.30	9.73	521.0	9.90	8.17	143.273	183.50	8.20	N/A	1.4000
Dry Weather	3/24/2010	Mill	Mill 3	92.30	10.11	499.7	11.20	8.13	207.680	307.60	11.10	0.40	3.2000
Dry Weather	3/31/2010	Mill	Mill 3	96.30	10.26	495.8	12.40	8.16	217.360	95.90	6.90	N/A	2.0000
Dry Weather	6/8/2010	Mill	Mill 3	65.80	5.48	554.0	24.60	7.82	26.247	129.60	5.60	N/A	12.8000
Dry Weather	6/15/2010	Mill	Mill 3	61.90	4.79	583.0	28.50	7.60	21.283	127.40	6.30	N/A	10.2000
Dry Weather	6/16/2010	Mill	Mill 3	64.30	5.00	597.0	28.20	7.79	19.837	156.50	4.40	N/A	10.2000
Dry Weather	6/22/2010	Mill	Mill 3	84.70	6.39	586.0	30.10	7.83	19.461	84.50	2.20	N/A	7.6000
Dry Weather	6/24/2010	Mill	Mill 3	55.80	4.24	589.0	28.60	7.61	18.079	166.40	5.00	N/A	8.4000
Dry Weather	9/20/2010	Mill	Mill 3	75.90	6.37	565.0	23.80	7.40	2.187	20.10	5.20	N/A	1.8000
Dry Weather	10/6/2010	Mill	Mill 3	95.50	9.45	602.0	15.50	7.91	2.186	20.10	12.70	2.00	1.6000
Dry Weather	12/8/2010	Mill	Mill 3	107.10	14.46	622.0	2.80	8.19	36.560	83.90	9.70	N/A	0.2000
Dry Weather	12/29/2010	Mill	Mill 3	114.70	15.46	596.0	2.90	8.18	32.596	29.50	12.40	1.90	2.0000
Dry Weather	2/14/2011	Mill	Mill 3	111.30	13.30	549.0	7.50	8.69	78.375	25.60	23.50	6.60	0.6000
Other	5/10/2010	Mill	Mill 3	89.40	8.89	527.0	15.50	8.11	N/A	123.60	40.20	1.10	3.0000
Other	5/12/2010	Mill	Mill 3	106.40	9.72	520.0	19.50	8.20	N/A	35.00	44.50	2.10	3.6400
Other	5/19/2010	Mill	Mill 3	91.40	8.64	520.0	18.30	8.04	N/A	517.20	34.30	4.00	N/A
Other	5/25/2010	Mill	Mill 3	90.40	7.51	548.0	24.70	8.11	N/A	137.60	5.70	BDL	N/A
Other	5/26/2010	Mill	Mill 3	89.70	7.50	542.0	24.30	8.03	N/A	290.90	18.00	0.40	N/A
								Total Geomean		84.70			
								Excluding Flood		69.24			
Wet Weather	10/13/2010	Mill	Mill 3	61.00	5.75	575.0	18.40	7.32	N/A	9.70	24.60	0.50	3.4000
Wet Weather	2/24/2011	Mill	Mill 3	82.20	8.97	450.6	11.00	7.81	281.600	1299.70	31.50	8.00	52.4000
Wet Weather	4/20/2011	Mill	Mill 3	83.30	7.85	473.7	18.00	7.85	153.000	285.10	7.50	N/A	3.5000
Wet Weather	4/26/2011	Mill	Mill 3	73.40	6.54	364.8	19.10	7.44	441.000	2160.00	5.20	N/A	28.2900
Wet Weather	6/27/2011	Mill	Mill 3	98.20	8.10	438.0	24.80	7.98	46.704	162.40	3.80	N/A	3.2000

Table 13A.1 – TMDL Monitoring Data Since 2010 (Continued)

Project Name	Date	Watershed	Site Name	DO %	DO mg/L	Cond	Temp C	pH	Flow	E coli	PCR All	PCR Huback	TSS
Dry Weather	3/8/2010	Mill	Mill 2	138.50	14.92	501.0	11.90	8.67	123.450	2.00	4.50	N/A	1.2000
Dry Weather	3/10/2010	Mill	Mill 2	95.10	10.13	513.0	12.20	8.21	131.170	30.50	3.50	N/A	3.0000
Dry Weather	3/17/2010	Mill	Mill 2	90.40	10.19	526.0	10.00	8.28	190.686	137.40	5.10	N/A	1.4000
Dry Weather	3/24/2010	Mill	Mill 2	102.30	11.13	507.0	11.60	8.25	224.018	261.30	6.60	N/A	2.9000
Dry Weather	3/31/2010	Mill	Mill 2	110.90	11.80	500.0	12.60	8.29	235.140	84.20	6.80	N/A	1.4000
Dry Weather	6/8/2010	Mill	Mill 2	65.50	5.42	525.0	24.60	7.92	65.586	2419.60	64.50	4.40	5.8000
Dry Weather	6/15/2010	Mill	Mill 2	65.30	5.12	529.0	27.70	7.81	101.546	435.20	15.00	1.70	7.0000
Dry Weather	6/16/2010	Mill	Mill 2	79.80	6.26	539.0	27.60	7.89	58.783	160.70	7.30	N/A	5.0000
Dry Weather	6/22/2010	Mill	Mill 2	82.50	6.41	542.0	27.90	7.87	83.722	185.00	19.90	0.50	9.2000
Dry Weather	6/24/2010	Mill	Mill 2	61.20	4.83	520.0	27.40	7.83	81.364	261.30	13.90	0.50	4.4000
Dry Weather	9/20/2010	Mill	Mill 2	68.40	5.78	472.5	23.00	7.49	43.902	146.70	3.40	N/A	5.8000
Dry Weather	10/6/2010	Mill	Mill 2	83.20	8.60	501.0	13.80	7.26	18.837	37.90	7.00	N/A	2.6000
Dry Weather	12/8/2010	Mill	Mill 2	104.40	14.10	599.0	2.80	8.51	93.060	1553.10	10.00	BDL	-1.4000
Dry Weather	1/6/2011	Mill	Mill 2	108.30	13.73	552.0	5.20	7.85	124.534	61.30	7.10	N/A	0.2000
Dry Weather	2/14/2011	Mill	Mill 2	107.00	12.77	566.0	7.60	8.17	177.520	21.30	15.70	5.00	1.0000
Other	5/11/2010	Mill	Mill 2	98.80	9.40	539.0	16.50	7.97	N/A	920.80	44.20	6.00	3.4000
Other	5/13/2010	Mill	Mill 2	100.10	9.04	522.0	20.30	8.15	N/A	410.00	67.30	5.70	0.4000
Other	5/19/2010	Mill	Mill 2	96.10	9.15	508.0	17.80	8.12	N/A	1553.10	36.30	8.40	0.0000
Other	5/25/2010	Mill	Mill 2	95.40	8.14	536.0	23.30	8.11	N/A	613.10	14.00	0.70	0.0000
Other	5/26/2010	Mill	Mill 2	94.80	8.22	540.0	23.30	8.09	N/A	410.60	22.50	1.10	0.0000
							Total Geomean			186.20			
							Excluding Flood			120.79			
Wet Weather	2/24/2011	Mill	Mill 2	83.30	9.25	450.3	10.90	7.92	316.000	579.40	27.40	1.80	36.0000
Wet Weather	4/26/2011	Mill	Mill 2	87.90	8.22	381.5	18.70	7.87	433.278	1986.30	7.30	N/A	16.5700
Wet Weather	4/20/2011	Mill	Mill 2	81.20	7.52	466.5	18.40	7.89	206.000	579.40	7.70	N/A	6.2500
Wet Weather	6/27/2011	Mill	Mill 2	106.30	8.89	455.9	24.10	8.05	106.964	365.40	4.00	N/A	3.2000

Table 13A.1 – TMDL Monitoring Data Since 2010 (Continued)

Project Name	Date	Watershed	Site Name	DO %	DO mg/L	Cond	Temp C	pH	Flow	E coli	PCR All	PCR Huback	TSS
Dry Weather	3/8/2010	Mill	Mill 1	85.20	9.56	523.0	10.30	8.27	N/A	24.60	6.00	0.70	9.4000
Dry Weather	3/10/2010	Mill	Mill 1	92.60	9.75	526.0	13.10	8.17	N/A	49.60	7.30	BDL	7.2000
Dry Weather	3/17/2010	Mill	Mill 1	N/A	N/A	N/A	N/A	N/A	N/A	98.40	11.50	0.50	0.0000
Dry Weather	3/24/2010	Mill	Mill 1	N/A	N/A	N/A	N/A	N/A	N/A	123.60	12.50	0.70	0.0000
Dry Weather	3/31/2010	Mill	Mill 1	N/A	N/A	N/A	N/A	N/A	N/A	33.20	9.50	BDL	0.0000
Dry Weather	6/8/2010	Mill	Mill 1	71.10	5.68	542.0	26.70	8.10	N/A	36.80	8.30	BDL	7.4000
Dry Weather	6/15/2010	Mill	Mill 1	68.90	5.34	552.0	29.00	7.89	N/A	135.40	9.70	BDL	12.8000
Dry Weather	6/16/2010	Mill	Mill 1	39.40	2.95	590.0	29.70	7.98	N/A	172.50	7.50	BDL	14.4000
Dry Weather	6/22/2010	Mill	Mill 1	83.80	6.18	554.0	31.30	7.95	N/A	2419.60	8.10	BDL	8.0000
Dry Weather	6/23/2010	Mill	Mill 1	63.60	4.91	541.0	28.40	7.77	N/A	209.80	2.50	BDL	16.0000
Dry Weather	9/20/2010	Mill	Mill 1	84.90	6.95	535.0	25.40	7.64	N/A	83.90	2.60	BDL	7.6000
Dry Weather	10/5/2010	Mill	Mill 1	98.70	9.81	561.0	15.50	7.72	N/A	90.50	13.00	1.10	49.5000
Dry Weather	12/7/2010	Mill	Mill 1	95.00	12.26	609.0	4.60	8.23	N/A	155.30	6.50	BDL	1.2000
Dry Weather	1/6/2011	Mill	Mill 1	92.70	11.48	562.0	6.00	7.63	N/A	36.90	5.50	BDL	0.0000
Dry Weather	1/28/2011	Mill	Mill 1	94.10	11.33	595.0	7.00	7.31	N/A	50.40	11.70	2.10	9.6000
Other	5/11/2010	Mill	Mill 1	92.00	8.97	552.0	16.00	8.05	N/A	686.70	47.00	2.10	6.4000
Other	5/13/2010	Mill	Mill 1	92.30	8.23	533.0	21.60	8.25	N/A	206.00	77.30	2.50	4.4000
Other	5/19/2010	Mill	Mill 1	84.20	7.62	492.8	20.10	8.05	N/A	292.40	37.90	0.60	0.0000
Other	5/25/2010	Mill	Mill 1	71.60	5.80	540.0	25.80	8.02	N/A	107.60	9.00	BDL	0.0000
Other	5/26/2010	Mill	Mill 1	81.40	6.85	545.0	23.00	7.96	N/A	547.50	36.10	1.60	0.0000
							Total Geomean			126.77			
							Excluding Flood			95.11			
Wet Weather	10/13/2010	Mill	Mill 1	68.70	6.38	503.0	18.40	7.79	0.000	2419.60	39.30	0.50	14.2000
Wet Weather	2/24/2011	Mill	Mill 1	88.90	9.37	447.4	11.40	7.19	0.000	1460.00	22.50	6.70	50.3300
Wet Weather	4/26/2011	Mill	Mill 1	82.00	7.78	355.1	19.60	7.92	0.000	1413.60	5.60	BDL	12.8600

Table 13A.1 – TMDL Monitoring Data Since 2010 (Continued)

Project Name	Date	Watershed	Site Name	DO %	DO mg/L	Cond	Temp C	pH	Flow	E coli	PCR All	PCR Huback	TSS
Dry Weather	4/2/2012	Manskers	Manskers 2	78.30	7.29	370.6	18.40	7.78	N/A	1046.20	N/A	N/A	N/A
Dry Weather	4/3/2012	Manskers	Manskers 2	117.10	8.77	375.4	17.70	7.49	N/A	123.40	N/A	N/A	N/A
Dry Weather	4/4/2012	Manskers	Manskers 2	98.60	8.88	326.8	19.40	7.89	1.591	93.40	N/A	N/A	N/A
Dry Weather	4/10/2012	Manskers	Manskers 2	96.10	10.25	351.3	12.60	8.02	N/A	185.00	N/A	N/A	N/A
Dry Weather	4/24/2012	Manskers	Manskers 2	88.30	9.49	388.5	11.90	7.91	N/A	920.80	N/A	N/A	N/A
Dry Weather	7/31/2012	Manskers	Manskers2	95.90	7.67	427.0	26.70	7.94	N/A	43.10	N/A	N/A	N/A
							Total Geomean			211.11			

Table 13A.1 – TMDL Monitoring Data Since 2010 (Continued)

Project Name	Date	Watershed	Site Name	DO %	DO mg/L	Cond	Temp C	pH	Flow	E coli	PCR All	PCR Huback	TSS
Dry Weather	4/2/2012	Manskers	Manskers 1	79.80	7.44	431.8	18.40	7.94	N/A	117.80	N/A	N/A	N/A
Dry Weather	4/3/2012	Manskers	Manskers 1	72.60	6.61	426.4	6.96	18.70	N/A	201.40	N/A	N/A	N/A
Dry Weather	4/4/2012	Manskers	Manskers 1	93.40	8.39	419.6	19.60	7.93	18.180	167.00	N/A	N/A	N/A
Dry Weather	4/10/2012	Manskers	Manskers 1	95.90	10.17	432.8	13.00	8.08	N/A	146.70	N/A	N/A	N/A
Dry Weather	4/24/2012	Manskers	Manskers 1	78.80	8.53	452.0	12.20	7.80	N/A	172.50	N/A	N/A	N/A
Dry Weather	7/31/2012	Manskers	Manskers 1	83.10	6.68	4.2	27.00	7.75	N/A	1046.20	N/A	N/A	N/A
Other	5/10/2010	Manskers	Manskers 1	97.70	10.46	367.5	12.10	8.33	N/A	387.30	N/A	N/A	N/A
Other	5/11/2010	Manskers	Manskers 1	95.50	9.77	438.9	14.50	8.14	N/A	178.20	N/A	N/A	N/A
Other	5/13/2010	Manskers	Manskers 1	100.50	8.97	447.6	19.80	8.21	N/A	547.00	N/A	N/A	N/A
Other	5/19/2010	Manskers	Manskers 1	94.00	8.93	366.6	17.10	8.10	N/A	218.70	N/A	N/A	N/A
Other	5/25/2010	Manskers	Manskers 1	99.40	9.18	405.3	19.00	8.13	N/A	410.60	N/A	N/A	N/A
							Total Geomean			259.25			
							Excluding Flood			217.17			

Table 13A.1 – TMDL Monitoring Data Since 2010 (Continued)

Project Name	Date	Watershed	Site Name	DO %	DO mg/L	Cond	Temp C	pH	Flow	E coli	PCR All	PCR Huback	TSS
Dry Weather	4/11/2011	Browns	M. Fork Browns	69.50	6.39	514.0	18.00	8.16	4.545	166.40	1.40	N/A	2.2000
Dry Weather	4/19/2011	Browns	M. Fork Browns	104.20	10.15	517.0	16.60	8.13	7.374	156.50	3.10	N/A	1.6000
Dry Weather	5/6/2011	Browns	M. Fork Browns	97.00	9.80	486.5	14.90	7.96	15.444	161.60	1.50	N/A	2.8000
Dry Weather	5/7/2011	Browns	M. Fork Browns	95.00	9.47	488.2	15.30	7.98	10.856	131.40	3.40	N/A	-0.4000
Dry Weather	5/9/2011	Browns	M. Fork Browns	103.00	10.06	495.7	16.60	7.96	N/A	275.50	7.50	N/A	2.8000
Dry Weather	7/11/2011	Browns	M. Fork Browns	87.20	7.19	584.0	24.80	8.06	0.686	365.40	3.60	N/A	3.2000
Dry Weather	7/12/2011	Browns	M. Fork Browns	89.30	7.21	523.0	26.10	8.12	N/A	980.40	2.00	N/A	8.4000
Dry Weather	7/14/2011	Browns	M. Fork Browns	90.20	6.40	548.0	26.00	7.97	2.160	2419.60	6.30	N/A	46.8000
Dry Weather	7/18/2011	Browns	M. Fork Browns	74.30	6.17	538.0	24.30	8.06	0.549	488.40	10.90	BDL	13.6000
Dry Weather	7/21/2011	Browns	M. Fork Browns	76.00	6.27	523.0	25.40	7.98	0.681	866.40	3.50	N/A	2.4000
Dry Weather	10/3/2011	Browns	M. Fork Browns	90.40	9.23	645.0	14.20	8.10	0.695	129.10	2.70	N/A	1.6000
Dry Weather	10/4/2011	Browns	M. Fork Browns	89.10	9.22	633.0	13.30	8.18	0.176	275.50	9.50	N/A	1.6000
Dry Weather	10/5/2011	Browns	M. Fork Browns	87.00	8.72	15.4	639.00	8.78	0.072	307.60	6.10	N/A	4.0000
Dry Weather	10/6/2011	Browns	M. Fork Browns	103.10	9.64	625.0	18.40	0.00	0.171	145.50	2.90	N/A	1.2000
Dry Weather	10/24/2011	Browns	M. Fork Browns	81.40	8.67	621.0	12.40	8.00	0.061	177.50	0.30	N/A	2.4000
Dry Weather	1/4/2012	Browns	M. Fork Browns	100.70	12.30	548.0	6.80	8.17	3.060	52.00	2.80	N/A	2.0000
Dry Weather	1/5/2012	Browns	M. Fork Browns	99.60	11.83	548.0	7.60	8.13	2.000	90.50	1.20	N/A	0.8000
Dry Weather	1/30/2012	Browns	M. Fork Browns	97.60	10.99	496.1	10.00	8.03	N/A	139.60	6.70	N/A	3.2000
Dry Weather	1/31/2012	Browns	M. Fork Browns	111.00	12.00	502.0	11.30	8.10	6.690	61.30	1.10	N/A	2.0000
Dry Weather	2/7/2012	Browns	M. Fork Browns	99.80	11.10	498.6	10.50	8.09	6.403	135.20	1.40	N/A	3.6000
							Total Geomean			222.19			
Wet Weather	5/24/2011	Browns	M. Fork Browns	73.40	6.78	401.6	18.80	7.79	3.330	920.80	3.10	N/A	3.2000
Wet Weather	6/27/2011	Browns	M. Fork Browns	88.10	7.78	507.0	21.40	8.54	1.800	686.70	3.00	N/A	2.0000
Wet Weather	9/15/2011	Browns	M. Fork Browns	76.90	6.92	591.0	19.20	0.00	0.924	2419.60	5.30	N/A	10.0000
Wet Weather	11/15/2011	Browns	M. Fork Browns	64.50	6.36	338.0	15.70	7.54	2.210	3410.00	11.50	0.60	0.0000
Wet Weather	1/11/2012	Browns	M. Fork Browns	92.60	9.91	313.8	12.20	6.30	32.350	1986.30	2.70	N/A	59.6000

Table 13A.1 – TMDL Monitoring Data Since 2010 (Continued)

Project Name	Date	Watershed	Site Name	DO %	DO mg/L	Cond	Temp C	pH	Flow	E coli	PCR All	PCR Huback	TSS
Dry Weather	4/2/2012	Manskers	Lumsley	98.10	9.40	401.2	16.90	8.29	4.504	488.40	N/A	N/A	N/A
Dry Weather	4/3/2012	Manskers	Lumsley	103.40	10.01	413.1	16.80	7.47	2.717	410.60	N/A	N/A	N/A
Dry Weather	4/4/2012	Manskers	Lumsley	119.60	11.12	394.3	18.60	8.44	3.815	435.20	N/A	N/A	N/A
Dry Weather	4/10/2012	Manskers	Lumsley	102.60	10.97	384.6	12.30	8.31	N/A	111.90	N/A	N/A	N/A
Dry Weather	4/24/2012	Manskers	Lumsley	107.60	11.48	405.8	12.40	8.26	N/A	139.60	N/A	N/A	N/A
Dry Weather	7/31/2012	Manskers	Lumsley	136.70	10.38	341.0	29.90	8.45	N/A	365.40	N/A	N/A	N/A
Other	5/10/2010	Manskers	Lumsley	92.10	9.77	367.5	12.10	8.33	N/A	224.70	N/A	N/A	N/A
Other	5/11/2010	Manskers	Lumsley	98.30	10.02	378.5	14.30	8.30	N/A	142.10	N/A	N/A	N/A
Other	5/13/2010	Manskers	Lumsley	106.50	9.95	387.6	18.60	8.42	N/A	214.00	N/A	N/A	N/A
Other	5/19/2010	Manskers	Lumsley	103.10	9.91	364.9	16.90	8.25	N/A	155.30	N/A	N/A	N/A
Other	5/25/2010	Manskers	Lumsley	108.20	10.09	310.3	18.70	8.43	N/A	307.60	N/A	N/A	N/A
							Total Geomean			241.45			
							Excluding Flood			281.55			

Table 13A.1 – TMDL Monitoring Data Since 2010 (Continued)

Project Name	Date	Watershed	Site Name	DO %	DO mg/L	Cond	Temp C	pH	Flow	E coli	PCR All	PCR Huback	TSS
Dry Weather	4/2/2012	Whites	Little	84.90	8.35	514.0	16.10	7.86	8.742	51.20	N/A	N/A	N/A
Dry Weather	4/3/2012	Whites	Little	95.00	9.05	17.6	508.00	7.77	5.836	95.90	N/A	N/A	N/A
Dry Weather	4/4/2012	Whites	Little	119.70	11.04	510.0	19.20	8.27	5.318	224.70	N/A	N/A	N/A
Dry Weather	4/10/2012	Whites	Little	117.90	12.27	489.0	13.50	8.23	N/A	118.70	N/A	N/A	N/A
Dry Weather	4/24/2012	Whites	Little	119.10	12.63	527.0	12.60	8.34	N/A	57.30	N/A	N/A	N/A
Dry Weather	7/31/2012	Whites	Little	90.00	6.81	589.0	28.30	7.98	N/A	648.80	N/A	N/A	N/A
							Total Geomean			130.19			

Table 13A.1 – TMDL Monitoring Data Since 2010 (Continued)

Project Name	Date	Watershed	Site Name	DO %	DO mg/L	Cond	Temp C	pH	Flow	E coli	PCR All	PCR Huback	TSS
Dry Weather	5/9/2011	Richland	Jocelyn Hollow	79.80	7.81	464.4	16.10	9.07	4.768	461.10	5.70	N/A	1.6000
Dry Weather	5/10/2011	Richland	Jocelyn Hollow	104.00	9.90	470.0	17.20	8.16	5.584	547.50	6.40	N/A	2.4000
Dry Weather	5/11/2011	Richland	Jocelyn Hollow	92.70	8.77	472.7	17.70	7.86	6.815	461.10	6.10	N/A	2.4000
Dry Weather	5/12/2011	Richland	Jocelyn Hollow	90.60	8.58	483.6	17.90	8.13	6.707	2419.60	1.20	N/A	1.6000
Dry Weather	5/18/2011	Richland	Jocelyn Hollow	100.00	10.38	487.5	13.70	8.14	5.776	261.30	0.40	N/A	1.6000
Dry Weather	7/11/2011	Richland	Jocelyn Hollow	47.80	3.92	579.0	25.60	8.00	1.220	1732.90	7.40	N/A	27.6000
Dry Weather	7/12/2011	Richland	Jocelyn Hollow	53.10	4.18	519.0	27.30	7.84	0.151	435.20	2.90	N/A	6.8000
Dry Weather	7/13/2011	Richland	Jocelyn Hollow	57.20	4.62	562.0	26.20	7.74	0.046	1986.30	15.40	2.50	5.6000
Dry Weather	7/14/2011	Richland	Jocelyn Hollow	56.00	4.51	473.9	26.50	7.82	BDL	613.10	8.90	N/A	4.4000
Dry Weather	7/21/2011	Richland	Jocelyn Hollow	35.10	2.86	406.7	27.20	7.60	BDL	488.40	2.60	N/A	15.2000
Dry Weather	10/3/2011	Richland	Jocelyn Hollow	89.60	9.56	624.0	12.40	8.07	0.483	105.40	5.20	N/A	0.8000
Dry Weather	10/4/2011	Richland	Jocelyn Hollow	102.30	10.57	619.0	14.90	8.16	1.970	307.60	1.40	N/A	0.4000
Dry Weather	10/5/2011	Richland	Jocelyn Hollow	98.90	9.79	631.0	15.10	8.08	1.200	248.10	0.80	N/A	0.8000
Dry Weather	10/6/2011	Richland	Jocelyn Hollow	91.20	9.09	645.0	15.70	7.92	0.731	166.40	2.90	N/A	1.2000
Dry Weather	10/24/2011	Richland	Jocelyn Hollow	N/A	N/A	N/A	N/A	N/A	0.857	365.40	0.90	N/A	2.4000
Dry Weather	1/4/2012	Richland	Jocelyn Hollow	108.10	13.18	509.0	6.00	8.14	4.590	272.30	0.40	N/A	BDL
Dry Weather	1/5/2012	Richland	Jocelyn Hollow	106.00	12.70	514.0	7.50	8.20	4.550	307.60	2.50	N/A	BDL
Dry Weather	1/31/2012	Richland	Jocelyn Hollow	98.80	11.17	464.6	9.80	8.02	5.720	36.40	0.60	N/A	0.4000
Dry Weather	2/6/2012	Richland	Jocelyn Hollow	111.40	12.03	452.7	10.90	8.03	12.560	47.30	0.60	N/A	0.8000
Dry Weather	2/7/2012	Richland	Jocelyn Hollow	104.20	12.14	462.3	8.60	8.07	8.730	118.70	0.70	N/A	0.4000
							Total Geomean			332.72			
Wet Weather	5/24/2011	Richland	Jocelyn Hollow	107.20	9.96	403.4	18.90	8.05	7.110	2419.60	4.40	N/A	5.6000
Wet Weather	6/27/2011	Richland	Jocelyn Hollow	110.50	8.82	538.0	24.20	8.48	1.230	365.40	1.50	N/A	1.2000
Wet Weather	9/15/2011	Richland	Jocelyn Hollow	71.30	6.65	597.0	18.70	7.65	2.860	488.40	9.50	N/A	2.0000
Wet Weather	11/15/2011	Richland	Jocelyn Hollow	70.40	6.98	572.0	15.50	7.78	0.955	1119.90	7.30	N/A	BDL
Wet Weather	1/11/2012	Richland	Jocelyn Hollow	133.40	14.36	285.6	11.80	7.47	28.960	7120.00	9.70	N/A	27.6000

Table 13A.1 – TMDL Monitoring Data Since 2010 (Continued)

Project Name	Date	Watershed	Site Name	DO %	DO mg/L	Cond	Temp C	pH	Flow	E coli	PCR All	PCR Huback	TSS
Dry Weather	8/16/2010	Mill	Indian	50.00	4.11	396.2	26.60	7.65	0.100	488.40	12.80	0.50	5.8000
Dry Weather	8/17/2010	Mill	Indian	64.10	5.13	417.4	26.60	7.81	0.100	325.50	5.80	BDL	6.8000
Dry Weather	8/24/2010	Mill	Indian	77.40	6.71	525.0	22.50	7.96	1.452	344.80	18.40	0.50	2.4000
Dry Weather	8/25/2010	Mill	Indian	93.00	7.96	525.0	22.80	8.03	2.681	157.60	19.10	0.50	7.2000
Dry Weather	11/10/2010	Mill	Indian	62.30	7.00	538.0	10.70	6.87	BDL	127.40	1.10	N/A	7.2000
Dry Weather	12/28/2010	Mill	Indian	95.80	13.46	268.8	1.60	7.94	3.353	228.20	6.30	BDL	2.0000
Dry Weather	2/23/2011	Mill	Indian	114.40	13.65	457.3	7.80	8.19	6.024	178.90	13.50	2.50	2.4000
							Total Geomean			239.30			
Wet Weather	2/24/2011	Mill	Indian	90.40	10.15	367.3	10.20	7.83	34.373	2419.60	17.80	3.30	96.4000
Wet Weather	4/20/2011	Mill	Indian	99.00	9.82	414.1	15.80	8.13	16.173	325.50	1.20	N/A	5.5000
Wet Weather	4/26/2011	Mill	Indian	92.70	9.12	297.5	16.00	7.77	61.380	2660.00	1.10	N/A	219.0000
Wet Weather	6/27/2011	Mill	Indian	83.00	7.29	459.1	21.40	7.91	1.730	228.20	4.60	N/A	2.8000

Table 13A.1 – TMDL Monitoring Data Since 2010 (Continued)

Project Name	Date	Watershed	Site Name	DO %	DO mg/L	Cond	Temp C	pH	Flow	E coli	PCR All	PCR Huback	TSS
Dry Weather	8/4/2010	Mill	Holt	70.20	5.96	656.0	23.50	7.44	1.855	121.10	30.30	0.50	2.0000
Dry Weather	8/16/2010	Mill	Holt	67.60	5.80	673.0	22.90	7.44	2.061	410.60	19.60	0.50	1.0000
Dry Weather	8/17/2010	Mill	Holt	70.90	6.11	677.0	22.60	7.48	1.251	920.80	9.40	N/A	1.6000
Dry Weather	8/24/2010	Mill	Holt	78.30	6.98	634.0	20.90	7.53	5.275	488.40	4.40	N/A	1.8000
Dry Weather	8/25/2010	Mill	Holt	82.20	7.29	632.0	21.00	7.61	6.854	238.20	3.40	N/A	1.6000
Dry Weather	9/22/2010	Mill	Holt	68.70	6.00	732.0	21.80	7.45	0.814	172.30	1.10	N/A	3.4000
Dry Weather	10/19/2010	Mill	Holt	56.30	5.71	780.0	14.50	7.55	0.996	60.90	2.50	N/A	0.2000
Dry Weather	11/10/2010	Mill	Holt	76.40	8.30	705.0	11.40	6.94	1.163	93.20	2.60	N/A	0.6000
Dry Weather	12/28/2010	Mill	Holt	100.70	13.40	641.0	3.40	7.86	4.773	35.00	2.20	N/A	0.2000
Dry Weather	2/23/2011	Mill	Holt	120.30	13.91	619.0	8.90	8.07	4.717	76.70	17.40	2.30	1.0000
							Total Geomean			163.89			
Wet Weather	10/13/2010	Mill	Holt	58.80	5.59	744.0	17.60	7.29	0.819	127.40	5.40	BDL	4.2000
Wet Weather	2/24/2011	Mill	Holt	86.70	9.64	464.9	10.80	7.75	15.480	1732.90	18.40	2.70	25.6000
Wet Weather	4/20/2011	Mill	Holt	94.40	9.44	505.0	15.80	7.57	15.398	178.90	2.30	N/A	1.7500
Wet Weather	4/26/2011	Mill	Holt	87.70	8.28	356.6	16.20	7.22	74.610	2460.00	3.40	N/A	9.3300
Wet Weather	6/27/2011	Mill	Holt	79.40	7.21	539.0	19.80	7.66	3.792	488.40	2.00	N/A	2.8000

Table 13A.1 – TMDL Monitoring Data Since 2010 (Continued)

Project Name	Date	Watershed	Site Name	DO %	DO mg/L	Cond	Temp C	pH	Flow	E coli	PCR All	PCR Huback	TSS
Dry Weather	4/2/2012	Gibson	Gibson	52.00	5.19	526.0	15.40	6.91	0.461	35.90	N/A	N/A	N/A
Dry Weather	4/3/2012	Gibson	Gibson	85.00	6.11	533.0	15.50	7.25	0.638	275.50	N/A	N/A	N/A
Dry Weather	4/4/2012	Gibson	Gibson	50.70	4.98	545.0	15.80	6.70	0.546	78.50	N/A	N/A	N/A
Dry Weather	4/10/2012	Gibson	Gibson	67.70	6.85	573.0	14.80	6.79	N/A	66.30	N/A	N/A	N/A
Dry Weather	4/24/2012	Gibson	Gibson	55.60	5.65	542.0	14.60	6.51	N/A	21.10	N/A	N/A	N/A
Dry Weather	7/31/2012	Gibson	Gibson	61.00	7.90	531.0	22.90	6.70	N/A	1986.30	N/A	N/A	N/A
Dry Weather	8/13/2012	Gibson	Gibson	44.80	3.97	617.0	21.50	6.81	N/A	76.80	N/A	N/A	N/A
Other	5/10/2010	Gibson	Gibson	84.60	8.44	608.0	14.50	7.99	N/A	67.00	N/A	N/A	N/A
Other	5/11/2010	Gibson	Gibson	96.70	9.76	484.1	14.90	8.20	N/A	51.20	N/A	N/A	N/A
Other	5/13/2010	Gibson	Gibson	57.20	5.62	623.0	16.20	7.25	N/A	108.00	N/A	N/A	N/A
Other	5/19/2010	Gibson	Gibson	14.50	6.93	618.0	18.70	7.51	N/A	178.20	N/A	N/A	N/A
Other	5/25/2010	Gibson	Gibson	83.10	7.82	617.0	18.10	7.37	N/A	73.80	N/A	N/A	N/A
							Total Geomean			97.99			
							Excluding Flood			107.48			

Table 13A.1 – TMDL Monitoring Data Since 2010 (Continued)

Project Name	Date	Watershed	Site Name	DO %	DO mg/L	Cond	Temp C	pH	Flow	E coli	PCR All	PCR Huback	TSS
Dry Weather	3/8/2010	Mill	Finley	133.20	13.75	439.4	13.80	8.85	0.640	9.70	0.60	0.00	0.6000
Dry Weather	3/10/2010	Mill	Finley	109.70	11.98	503.0	11.30	8.06	1.070	152.90	2.20	0.00	7.2000
Dry Weather	3/17/2010	Mill	Finley	84.70	9.49	566.0	9.90	7.99	0.852	517.20	0.60	0.00	0.6000
Dry Weather	3/24/2010	Mill	Finley	99.50	10.92	552.0	11.10	7.97	1.103	435.20	0.80	0.00	1.2000
Dry Weather	3/31/2010	Mill	Finley	105.10	11.25	546.0	12.40	8.10	0.991	126.70	4.90	0.00	1.8000
Dry Weather	6/8/2010	Mill	Finley	61.20	5.49	587.0	20.30	7.69	0.100	196.80	2.50	0.00	50.6000
Dry Weather	6/15/2010	Mill	Finley	67.60	5.89	548.0	21.70	7.56	0.100	410.60	6.30	0.00	25.2000
Dry Weather	6/16/2010	Mill	Finley	64.60	5.69	501.0	21.30	7.62	0.100	2419.60	5.30	0.00	4.4000
Dry Weather	6/22/2010	Mill	Finley	64.10	5.45	516.0	22.30	7.56	0.100	435.20	0.80	0.00	6.0000
Dry Weather	6/23/2010	Mill	Finley	65.10	5.66	597.0	22.10	7.58	0.100	547.50	2.40	0.00	29.6000
Dry Weather	9/20/2010	Mill	Finley	119.10	9.68	556.0	25.70	7.45	0.100	123.60	3.40	0.00	14.0000
Dry Weather	12/8/2010	Mill	Finley	91.00	10.54	573.0	9.30	7.04	0.744	21.60	1.70	0.00	3.8000
Dry Weather	1/6/2011	Mill	Finley	98.90	11.76	572.0	8.80	7.70	0.736	3.10	7.10	0.00	-0.8000
Dry Weather	2/3/2011	Mill	Finley	100.00	11.77	550.0	7.80	7.86	0.100	51.20	10.50	0.00	0.6000
Other	5/11/2010	Mill	Finley	86.00	8.57	529.0	15.80	7.86	N/A	124.60	6.40	0.00	2.0000
Other	5/13/2010	Mill	Finley	77.80	7.26	538.0	18.10	7.83	N/A	201.00	5.40	0.00	0.4000
Other	5/19/2010	Mill	Finley	78.90	7.54	538.0	16.90	7.85	N/A	461.10	23.00	16.40	0.0000
Other	5/25/2010	Mill	Finley	71.20	6.54	559.0	19.50	7.86	N/A	139.60	4.50	0.00	0.0000
Other	5/26/2010	Mill	Finley	74.50	6.70	563.0	19.20	7.79	N/A	167.00	3.30	0.00	0.0000
							Total Geomean			150.11			
							Excluding Flood			137.17			
Wet Weather	10/13/2010	Mill	Finley	50.50	4.64	475.0	19.00	7.12	0.000	1986.30	4.30	N/A	4.4000
Wet Weather	2/24/2011	Mill	Finley	90.40	9.99	244.3	11.00	7.87	13.696	1203.30	13.90	5.00	37.2000
Wet Weather	4/20/2011	Mill	Finley	83.70	8.20	445.4	16.00	7.74	2.574	248.10	1.80	N/A	1.7500
Wet Weather	6/27/2011	Mill	Finley	60.80	5.57	477.0	21.00	7.41	0.731	980.40	1.30	N/A	8.4000

Table 13A.1 – TMDL Monitoring Data Since 2010 (Continued)

Project Name	Date	Watershed	Site Name	DO %	DO mg/L	Cond	Temp C	pH	Flow	E coli	PCR All	PCR Huback	TSS
Dry Weather	4/2/2012	Whites	Ewing	61.40	5.72	633.0	18.60	7.65	7.753	90.80	N/A	N/A	N/A
Dry Weather	4/3/2012	Whites	Ewing	80.80	7.11	576.0	20.60	7.50	1.934	75.40	N/A	N/A	N/A
Dry Weather	4/4/2012	Whites	Ewing	99.00	8.81	510.0	20.90	7.98	7.546	88.20	N/A	N/A	N/A
Dry Weather	4/10/2012	Whites	Ewing	105.30	10.51	1002.0	15.30	7.98	0.000	178.50	N/A	N/A	N/A
Dry Weather	4/24/2012	Whites	Ewing	95.50	9.83	616.0	13.80	8.11	0.000	58.10	N/A	N/A	N/A
Dry Weather	7/31/2012	Whites	Ewing	60.00	5.84	669.0	27.00	7.44	0.000	88.20	N/A	N/A	N/A

Table 13A.1 – TMDL Monitoring Data Since 2010 (Continued)

Project Name	Date	Watershed	Site Name	DO %	DO mg/L	Cond	Temp C	pH	Flow	E coli	PCR All	PCR Huback	TSS
Dry Weather	4/2/2012	Whites	Eaton's Creek	84.60	8.09	467.2	17.70	7.69	6.840	218.70	N/A	N/A	N/A
Dry Weather	4/3/2012	Whites	Eaton's Creek	88.60	8.25	455.6	18.80	7.87	1.101	307.60	N/A	N/A	N/A
Dry Weather	4/4/2012	Whites	Eaton's Creek	85.30	7.96	471.4	18.20	7.19	3.940	248.90	N/A	N/A	N/A
Dry Weather	4/9/2012	Whites	Eaton's Creek	100.60	10.49	419.0	13.40	7.55	0.000	178.90	N/A	N/A	N/A
Dry Weather	4/24/2012	Whites	Eaton's Creek	102.50	10.34	484.8	14.90	7.72	0.000	178.50	N/A	N/A	N/A
Dry Weather	7/31/2012	Whites	Eaton's Creek	47.50	3.85	674.0	24.30	7.44	0.000	248.10	N/A	N/A	N/A
Dry Weather	8/9/2012	Whites	Eatons	57.50	5.02	669.0	23.90	7.43	0.000	920.80	N/A	N/A	N/A
Dry Weather	8/13/2012	Whites	Eaton's Creek	70.40	6.20	630.0	20.80	7.13	0.000	579.50	N/A	N/A	N/A
							Total Geomean			302.86			

Table 13A.1 – TMDL Monitoring Data Since 2010 (Continued)

Project Name	Date	Watershed	Site Name	DO %	DO mg/L	Cond	Temp C	pH	Flow	E coli	PCR All	PCR Huback	TSS
Dry Weather	4/11/2011	Browns	E. Fork Browns	87.70	7.80	518.0	20.60	8.09	15.008	272.30	5.70	N/A	25.5000
Dry Weather	4/19/2011	Browns	E. Fork Browns	102.00	9.73	612.0	17.50	8.11	8.656	78.90	1.80	N/A	14.4000
Dry Weather	5/6/2011	Browns	E. Fork Browns	100.70	10.06	533.0	15.50	7.99	11.406	195.60	2.10	N/A	2.4000
Dry Weather	5/7/2011	Browns	E. Fork Browns	92.10	8.97	525.0	16.70	8.05	10.264	58.30	1.30	N/A	3.6000
Dry Weather	5/9/2011	Browns	E. Fork Browns	101.30	9.69	608.0	18.10	8.03	N/A	272.30	5.20	N/A	6.4000
Dry Weather	7/11/2011	Browns	E. Fork Browns	100.50	8.64	578.0	22.90	8.08	2.140	261.30	3.50	N/A	2.0000
Dry Weather	7/12/2011	Browns	E. Fork Browns	103.30	8.77	480.2	23.50	8.16	N/A	547.50	1.00	N/A	2.0000
Dry Weather	7/14/2011	Browns	E. Fork Browns	85.70	7.11	579.0	24.90	8.03	0.566	488.40	2.10	N/A	2.8000
Dry Weather	7/18/2011	Browns	E. Fork Browns	85.20	7.13	579.0	22.80	8.05	0.619	248.10	2.70	N/A	3.6000
Dry Weather	7/21/2011	Browns	E. Fork Browns	91.40	7.77	591.0	23.10	8.01	3.200	579.40	1.70	N/A	3.6000
Dry Weather	10/3/2011	Browns	E. Fork Browns	99.00	9.96	623.0	14.80	8.14	1.300	101.70	1.60	N/A	1.2000
Dry Weather	10/4/2011	Browns	E. Fork Browns	92.80	9.36	621.0	15.00	8.14	3.120	88.20	6.50	N/A	3.6000
Dry Weather	10/5/2011	Browns	E. Fork Browns	99.20	9.71	611.0	16.40	8.19	0.923	91.00	0.90	N/A	2.0000
Dry Weather	10/6/2011	Browns	E. Fork Browns	116.10	10.83	601.0	18.40	8.27	3.350	90.80	1.40	N/A	2.0000
Dry Weather	10/24/2011	Browns	E. Fork Browns	97.90	10.05	572.0	1401.00	8.18	1.400	37.30	0.50	N/A	2.0000
Dry Weather	1/4/2012	Browns	E. Fork Browns	111.90	13.18	589.0	7.90	8.09	2.251	68.30	1.80	N/A	0.8000
Dry Weather	1/5/2012	Browns	E. Fork Browns	100.80	11.55	586.0	8.90	8.14	5.130	50.40	1.00	N/A	0.0000
Dry Weather	1/30/2012	Browns	E. Fork Browns	96.30	10.79	570.0	10.20	8.04	N/A	67.60	4.60	N/A	1.6000
Dry Weather	1/31/2012	Browns	E. Fork Browns	99.80	10.76	576.0	11.90	8.11	11.120	30.90	1.20	N/A	2.0000
Dry Weather	2/7/2012	Browns	E. Fork Browns	98.60	10.82	557.0	11.30	8.05	8.050	111.90	0.20	N/A	2.8000
							Total Geomean			128.43			
										68.35			
Wet Weather	5/24/2011	Browns	E. Fork Browns	83.00	7.63	369.9	19.40	7.69	8.720	1413.60	2.40	N/A	14.0000
Wet Weather	6/27/2011	Browns	E. Fork Browns	96.10	8.59	550.0	20.70	8.03	4.650	517.20	1.60	N/A	2.8000
Wet Weather	9/15/2011	Browns	E. Fork Browns	81.20	7.43	459.6	19.60	7.79	4.310	866.40	3.70	N/A	3.6000
Wet Weather	11/15/2011	Browns	E. Fork Browns	94.20	9.16	204.0	16.00	7.43	36.900	2419.60	10.20	0.70	0.0000
Wet Weather	1/11/2012	Browns	E. Fork Browns	91.10	9.30	365.1	13.30	7.64	25.680	1046.20	12.70	N/A	29.6000

Table 13A.1 – TMDL Monitoring Data Since 2010 (Continued)

Project Name	Date	Watershed	Site Name	DO %	DO mg/L	Cond	Temp C	pH	Flow	E coli	PCR All	PCR Huback	TSS
Dry Weather	4/2/2012	Dry	Dry Creek	82.70	7.99	526.0	16.50	7.92	6.235	261.30	N/A	N/A	N/A
Dry Weather	4/3/2012	Dry	Dry Creek	88.50	8.47	437.6	17.40	7.83	N/A	10.80	N/A	N/A	N/A
Dry Weather	4/4/2012	Dry	Dry Creek	102.10	9.58	506.0	18.10	8.05	N/A	135.40	N/A	N/A	N/A
Dry Weather	4/10/2012	Dry	Dry Creek	94.20	9.94	511.0	12.90	7.71	N/A	461.10	N/A	N/A	N/A
Dry Weather	4/24/2012	Dry	Dry Creek	91.00	9.75	546.0	12.20	7.78	N/A	285.10	N/A	N/A	N/A
Dry Weather	7/31/2012	Dry	Dry Creek	83.00	6.84	511.0	25.00	7.69	N/A	2419.60	N/A	N/A	N/A
Dry Weather	8/13/2012	Dry	Dry Creek	61.40	6.49	649.0	20.90	7.62	N/A	686.70	N/A	N/A	N/A
Other	5/10/2010	Dry	Dry	82.20	9.26	453.9	14.20	8.22	N/A	261.30	N/A	N/A	N/A
Other	5/11/2010	Dry	Dry	96.70	9.76	484.1	14.90	8.20	N/A	248.10	N/A	N/A	N/A
Other	5/13/2010	Dry	Dry	103.50	9.82	514.0	18.30	8.13	N/A	727.00	N/A	N/A	N/A
Other	5/19/2010	Dry	Dry	95.80	9.10	487.6	17.30	8.21	N/A	290.90	N/A	N/A	N/A
Other	5/25/2010	Dry	Dry	100.20	9.25	515.0	19.20	8.20	N/A	920.80	N/A	N/A	N/A
								Total Geomean			317.61		
								Excluding Flood			261.43		

Table 13A.1 – TMDL Monitoring Data Since 2010 (Continued)

Project Name	Date	Watershed	Site Name	DO %	DO mg/L	Cond	Temp C	pH	Flow	E coli	PCR All	PCR Huback	TSS
Dry Weather	4/2/2012	Whites	Drakes	88.50	8.50	542.0	17.30	7.80	0.795	290.90	N/A	N/A	N/A
Dry Weather	4/3/2012	Whites	Drakes	79.80	7.53	523.0	18.00	7.90	0.578	78.90	N/A	N/A	N/A
Dry Weather	4/4/2012	Whites	Drakes	88.00	8.39	532.0	17.60	7.90	0.463	980.40	N/A	N/A	N/A
Dry Weather	4/9/2012	Whites	Drakes	97.00	10.01	516.0	14.00	7.85	N/A	145.50	N/A	N/A	N/A
Dry Weather	4/24/2012	Whites	Drakes	66.20	6.83	548.0	13.10	7.92	N/A	307.60	N/A	N/A	N/A
Dry Weather	7/31/2012	Whites	Drakes	60.20	5.10	660.0	24.30	7.93	N/A	325.50	N/A	N/A	N/A
Dry Weather	8/9/2012	Whites	Drakes	72.00	6.06	644.0	23.60	7.82	N/A	579.40	N/A	N/A	N/A
Dry Weather	8/13/2012	Whites	Drakes	80.70	7.33	455.0	20.50	7.59	N/A	770.10	N/A	N/A	N/A
Other	5/10/2010	Whites	Drakes	78.80	0.00	564.0	13.40	8.06	N/A	307.60	N/A	N/A	N/A
Other	5/11/2010	Whites	Drakes	87.50	8.73	554.0	15.40	8.02	N/A	275.50	N/A	N/A	N/A
Other	5/13/2010	Whites	Drakes	83.80	7.84	560.0	19.90	7.99	N/A	307.00	N/A	N/A	N/A
Other	5/19/2010	Whites	Drakes	80.30	7.19	505.0	19.00	7.92	N/A	410.60	N/A	N/A	N/A
							Total Geomean			328.21			
							Excluding Flood			331.62			

Table 13A.1 – TMDL Monitoring Data Since 2010 (Continued)

Project Name	Date	Watershed	Site Name	DO %	DO mg/L	Cond	Temp C	pH	Flow	E coli	PCR All	PCR Huback	TSS
Dry Weather	4/19/2011	Davidson	Davidson	114.30	10.79	556.0	17.70	8.23	13.750	65.70	2.20	N/A	1.2000
Dry Weather	4/25/2011	Davidson	Davidson	85.40	8.17	587.0	17.50	7.81	3.692	115.30	0.80	N/A	1.6000
Dry Weather	5/6/2011	Davidson	Davidson	99.40	9.93	493.8	15.30	8.01	4.584	275.50	1.50	N/A	3.2000
Dry Weather	5/7/2011	Davidson	Davidson	88.90	8.81	514.0	15.60	8.06	6.013	178.90	0.90	N/A	3.2000
Dry Weather	5/9/2011	Davidson	Davidson	90.20	8.68	545.0	17.00	7.59	7.058	141.40	6.00	N/A	2.4000
Dry Weather	7/11/2011	Davidson	Davidson	84.20	6.91	618.0	22.30	7.38	0.189	159.70	0.30	N/A	24.0000
Dry Weather	7/12/2011	Davidson	Davidson	78.20	6.53	622.0	24.30	7.98	0.047	135.40	0.80	N/A	1.2000
Dry Weather	7/13/2011	Davidson	Davidson	97.50	8.36	645.0	23.00	7.86	0.080	101.90	8.80	N/A	6.4000
Dry Weather	7/14/2011	Davidson	Davidson	76.30	6.41	649.0	23.90	7.96	0.021	151.50	1.10	N/A	1.2000
Dry Weather	7/18/2011	Davidson	Davidson	75.30	6.59	667.0	22.40	7.91	0.182	1732.90	2.00	N/A	BDL
Dry Weather	10/3/2011	Davidson	Davidson	85.70	8.85	635.0	13.80	7.90	0.678	46.40	1.10	N/A	1.6000
Dry Weather	10/4/2011	Davidson	Davidson	85.20	8.23	17.9	645.00	7.94	0.273	49.50	1.90	N/A	2.4000
Dry Weather	10/5/2011	Davidson	Davidson	83.70	8.35	631.0	15.30	7.96	0.253	40.20	3.10	N/A	2.0000
Dry Weather	10/6/2011	Davidson	Davidson	78.60	7.52	654.0	17.80	7.99	0.112	93.20	0.50	N/A	2.4000
Dry Weather	10/24/2011	Davidson	Davidson	N/A	N/A	N/A	N/A	N/A	0.101	51.20	1.00	N/A	4.8000
Dry Weather	1/4/2012	Davidson	Davidson	101.40	11.71	583.0	9.00	8.11	2.800	325.50	1.20	N/A	BDL
Dry Weather	1/5/2012	Davidson	Davidson	98.50	11.64	588.0	8.00	8.50	2.750	56.50	0.40	N/A	BDL
Dry Weather	1/31/2012	Davidson	Davidson	100.00	11.01	539.0	11.20	8.09	6.130	133.30	0.90	N/A	2.8000
Dry Weather	2/6/2012	Davidson	Davidson	110.70	11.83	544.0	12.50	8.07	7.130	122.30	1.50	N/A	3.6000
Dry Weather	2/7/2012	Davidson	Davidson	95.10	10.82	532.0	9.70	7.74	6.630	193.50	2.80	N/A	4.0000
Dry Weather	5/17/2012	Davidson	Davidson	82.20	7.81	553.0	17.70	7.44	0.000	435.20	N/A	N/A	2.0000
Dry Weather	5/22/2012	Davidson	Davidson	79.60	7.48	560.0	18.30	7.48	0.000	178.50	N/A	N/A	2.0000
							Total Geomean			133.81			
Wet Weather	5/24/2011	Davidson	Davidson	88.60	7.96	415.7	20.10	8.05	6.690	2419.60	6.80	N/A	8.4000
Wet Weather	6/27/2011	Davidson	Davidson	90.80	7.87	540.0	22.80	8.02	0.160	1046.20	1.20	N/A	1.6000
Wet Weather	9/15/2011	Davidson	Davidson	75.60	7.06	574.0	18.50	7.81	2.680	365.40	2.40	N/A	2.0000
Wet Weather	11/15/2011	Davidson	Davidson	65.00	6.60	551.0	15.10	7.49	1.740	1553.10	2.80	N/A	BDL
Wet Weather	1/11/2012	Davidson	Davidson	97.70	10.48	350.2	12.20	7.74	35.800	1710.00	1.50	N/A	31.6000

Table 13A.1 – TMDL Monitoring Data Since 2010 (Continued)

Project Name	Date	Watershed	Site Name	DO %	DO mg/L	Cond	Temp C	pH	Flow	E coli	PCR All	PCR Huback	TSS
Dry Weather	4/2/2012	Cooper	Cooper	88.50	18.68	461.0	16.30	7.72	3.088	135.40	N/A	N/A	N/A
Dry Weather	4/3/2012	Cooper	Cooper	76.10	7.41	455.8	16.30	7.70	0.474	261.30	N/A	N/A	N/A
Dry Weather	4/4/2012	Cooper	Cooper	94.80	9.30	452.4	18.80	8.06	5.223	214.30	N/A	N/A	N/A
Dry Weather	4/10/2012	Cooper	Cooper	89.20	8.72	462.8	15.00	7.67	N/A	60.20	N/A	N/A	N/A
Dry Weather	4/24/2012	Cooper	Cooper	85.40	8.33	448.9	16.20	7.96	N/A	85.50	N/A	N/A	N/A
Dry Weather	7/31/2012	Cooper	Cooper	88.30	8.23	483.6	18.80	7.41	N/A	104.60	N/A	N/A	N/A
Dry Weather	8/13/2012	Cooper	Cooper	87.60	8.28	489.7	18.20	7.36	N/A	131.40	N/A	N/A	N/A
Other	5/10/2010	Cooper	Cooper	73.00	8.06	478.8	14.90	7.62	N/A	186.00	N/A	N/A	N/A
Other	5/11/2010	Cooper	Cooper	89.80	8.91	476.8	15.60	7.81	N/A	160.70	N/A	N/A	N/A
Other	5/13/2010	Cooper	Cooper	89.90	8.66	483.7	17.20	7.85	N/A	135.00	N/A	N/A	N/A
Other	5/19/2010	Cooper	Cooper	85.60	8.38	484.7	16.50	7.78	N/A	151.50	N/A	N/A	N/A
Other	5/25/2010	Cooper	Cooper	85.00	8.43	494.2	16.90	7.83	N/A	235.90	N/A	N/A	N/A
							Total Geomean			143.67			
							Excluding Flood			127.12			

Table 13A.1 – TMDL Monitoring Data Since 2010 (Continued)

Project Name	Date	Watershed	Site Name	DO %	DO mg/L	Cond	Temp C	pH	Flow	E coli	PCR All	PCR Huback	TSS
Dry Weather	8/4/2010	Mill	Collins	78.40	6.19	714.0	27.40	7.78	0.100	151.50	24.30	N/A	0.6000
Dry Weather	8/16/2010	Mill	Collins	89.00	7.35	681.0	24.70	7.86	0.100	187.20	5.30	N/A	2.4000
Dry Weather	8/17/2010	Mill	Collins	97.00	7.89	712.0	25.60	7.92	N/A	42.10	14.60	0.50	2.4000
Dry Weather	8/24/2010	Mill	Collins	91.00	7.77	663.0	22.70	7.91	2.969	101.40	1.40	N/A	1.6000
Dry Weather	8/25/2010	Mill	Collins	94.50	8.10	676.0	23.10	7.95	N/A	149.70	1.50	N/A	1.8000
Dry Weather	9/22/2010	Mill	Collins	73.30	6.15	741.0	23.80	7.67	N/A	26.20	3.30	N/A	2.0000
Dry Weather	10/19/2010	Mill	Collins	54.50	5.52	732.0	14.60	7.78	N/A	33.10	2.90	N/A	6.0000
Dry Weather	11/10/2010	Mill	Collins	93.10	9.93	711.0	12.10	7.40	N/A	13.10	2.50	N/A	2.2000
Dry Weather	12/28/2010	Mill	Collins	107.40	14.18	716.0	4.10	8.00	N/A	66.30	3.10	N/A	0.2000
Dry Weather	2/23/2011	Mill	Collins	104.70	12.08	726.0	9.00	8.06	0.866	165.80	17.40	3.20	0.8000
							Total Geomean			68.47			
Wet Weather	2/24/2011	Mill	Collins	88.60	9.62	415.0	11.60	7.64	30.085	547.50	11.20	4.20	19.6000
Wet Weather	4/20/2011	Mill	Collins	96.30	9.48	562.0	15.90	7.89	13.560	178.50	1.10	N/A	2.0000
Wet Weather	4/26/2011	Mill	Collins	91.30	8.68	323.0	17.30	7.47	99.003	3840.00	0.50	N/A	102.0000
Wet Weather	6/27/2011	Mill	Collins	86.10	7.73	598.0	20.70	7.77	1.365	435.20	1.40	N/A	2.0000

Table 13A.1 – TMDL Monitoring Data Since 2010 (Continued)

Project Name	Date	Watershed	Site Name	DO %	DO mg/L	Cond	Temp C	pH	Flow	E coli	PCR All	PCR Huback	TSS
Dry Weather	4/5/2010	Mill	Cathy Jo	102.80	9.85	513.0	17.40	7.76	3.218	579.40	2.10	N/A	BDT
Dry Weather	4/7/2010	Mill	Cathy Jo	105.30	10.21	517.0	16.80	7.79	2.057	387.30	2.80	N/A	BDT
Dry Weather	4/12/2010	Mill	Cathy Jo	91.90	9.25	495.4	15.10	8.03	3.432	52.90	3.50	N/A	0.4000
Dry Weather	4/19/2010	Mill	Cathy Jo	92.50	9.37	502.0	14.60	8.10	0.000	27.20	3.50	N/A	0.4000
Dry Weather	4/21/2010	Mill	Cathy Jo	92.20	9.07	499.0	15.40	8.11	2.681	40.40	4.10	N/A	0.4000
Dry Weather	7/6/2010	Mill	Cathy Jo	89.60	7.91	491.3	20.50	7.93	2.583	137.40	0.70	N/A	2.0000
Dry Weather	7/19/2010	Mill	Cathy Jo	89.70	8.04	495.1	20.70	8.01	0.000	186.00	1.50	N/A	1.0000
Dry Weather	7/20/2010	Mill	Cathy Jo	89.90	8.06	495.0	20.50	8.01	7.540	201.40	1.90	N/A	0.8000
Dry Weather	7/21/2010	Mill	Cathy Jo	94.20	8.43	497.5	20.70	7.98	6.488	178.50	1.30	N/A	0.6000
Dry Weather	7/29/2010	Mill	Cathy Jo	91.00	8.16	509.0	21.40	8.00	3.150	172.30	2.00	N/A	1.2000
Dry Weather	9/21/2010	Mill	Cathy Jo	89.10	8.08	520.0	20.40	7.81	3.223	325.50	3.10	N/A	0.8000
Dry Weather	10/19/2010	Mill	Cathy Jo	65.00	6.35	535.0	16.40	8.02	2.321	1413.60	2.10	N/A	1.0000
Dry Weather	11/29/2010	Mill	Cathy Jo	87.10	8.86	508.0	14.60	7.83	3.859	613.10	1.40	N/A	BDT
Dry Weather	12/29/2010	Mill	Cathy Jo	99.80	10.95	518.0	11.30	8.02	2.012	88.00	10.00	BDT	0.2000
Dry Weather	2/14/2011	Mill	Cathy Jo	105.10	11.01	550.0	13.10	8.20	4.224	95.90	9.60	BDT	0.2000
Other	5/10/2010	Mill	Cathy Jo	84.00	8.37	491.6	15.40	7.84	0.000	139.60	1.70	N/A	3.0000
Other	5/12/2010	Mill	Cathy Jo	89.20	8.43	489.5	18.20	7.92	0.000	45.00	1.70	N/A	1.6000
Other	5/19/2010	Mill	Cathy Jo	86.30	8.33	482.9	17.10	7.78	0.000	209.80	0.90	N/A	BDT
Other	5/25/2010	Mill	Cathy Jo	86.40	8.04	486.8	18.90	7.91	0.000	193.50	1.70	N/A	BDT
Other	5/26/2010	Mill	Cathy Jo	91.40	8.46	485.9	19.10	7.94	0.000	193.50	0.90	N/A	BDT
							Total Geomean			165.67			
							Excluding Flood			176.24			
Wet Weather	2/24/2011	Mill	Cathy Jo	91.50	9.72	222.4	12.70	7.75	33.250	1203.30	20.10	4.50	30.8000
Wet Weather	4/20/2011	Mill	Cathy Jo	90.40	8.82	472.8	16.50	7.80	9.102	214.30	2.20	N/A	1.7500
Wet Weather	4/26/2011	Mill	Cathy Jo	88.70	8.42	369.7	18.00	7.43	4.296	920.80	2.80	N/A	2.5700
Wet Weather	6/27/2011	Mill	Cathy Jo	90.60	8.16	422.3	20.40	7.95	11.801	488.40	1.40	N/A	1.6000

Table 13A.1 – TMDL Monitoring Data Since 2010 (Continued)

Project Name	Date	Watershed	Site Name	DO %	DO mg/L	Cond	Temp C	pH	Flow	E coli	PCR All	PCR Huback	TSS
Dry Weather	4/11/2011	Browns	Browns 2	104.60	9.91	541.0	18.00	8.29	26.196	150.00	3.70	N/A	1.6000
Dry Weather	4/19/2011	Browns	Browns 2	94.90	9.06	538.0	16.50	7.89	25.503	121.10	3.20	N/A	2.2000
Dry Weather	5/6/2011	Browns	Browns 2	98.40	9.93	521.0	14.90	7.97	44.888	307.60	3.50	N/A	1.6000
Dry Weather	5/7/2011	Browns	Browns 2	97.20	9.64	523.0	5.50	8.03	33.451	172.30	3.30	N/A	0.8000
Dry Weather	5/9/2011	Browns	Browns 2	105.20	10.14	535.0	16.50	7.99	0.000	272.30	4.30	N/A	2.0000
Dry Weather	7/11/2011	Browns	Browns 2	95.40	8.11	585.0	23.10	8.05	4.160	307.60	1.00	N/A	3.2000
Dry Weather	7/12/2011	Browns	Browns 2	88.10	7.41	593.0	24.20	8.18	0.000	248.90	7.40	N/A	3.2000
Dry Weather	7/18/2011	Browns	Browns 2	79.80	6.55	584.0	22.80	8.03	2.570	387.30	5.50	N/A	2.0000
Dry Weather	7/21/2011	Browns	Browns 2	85.50	7.27	570.0	23.40	8.02	6.140	260.30	5.70	N/A	2.8000
Dry Weather	7/14/2011	Browns	Browns 2	85.50	6.64	544.0	26.80	8.15	3.200	166.40	2.80	N/A	2.4000
Dry Weather	10/3/2011	Browns	Browns 2	88.00	9.07	626.0	14.40	8.09	13.500	48.00	3.30	N/A	0.4000
Dry Weather	10/4/2011	Browns	Browns 2	83.40	8.44	624.0	14.80	8.12	4.810	87.80	2.20	N/A	0.8000
Dry Weather	10/5/2011	Browns	Browns 2	88.80	8.77	628.0	15.90	8.14	11.230	56.50	9.70	N/A	1.6000
Dry Weather	10/6/2011	Browns	Browns 2	103.90	9.91	610.0	17.40	8.19	3.450	66.30	1.00	N/A	1.2000
Dry Weather	10/24/2011	Browns	Browns 2	81.90	8.51	611.0	13.40	8.10	6.860	42.80	1.40	N/A	N/A
Dry Weather	1/4/2012	Browns	Browns 2	105.60	12.39	565.0	8.40	7.87	12.000	28.50	3.90	N/A	2.4000
Dry Weather	1/5/2012	Browns	Browns 2	106.50	12.19	568.0	9.30	8.12	18.830	44.80	1.20	N/A	N/A
Dry Weather	1/30/2012	Browns	Browns 2	95.70	10.74	522.0	10.20	8.00	0.000	90.60	2.70	N/A	1.6000
Dry Weather	1/31/2012	Browns	Browns 2	95.90	10.41	529.0	11.80	8.60	30.250	68.90	1.50	N/A	0.8000
Dry Weather	2/7/2012	Browns	Browns 2	101.20	11.23	519.0	10.70	7.83	31.350	117.20	1.10	N/A	1.6000
							Total Geomean			116.51			
Wet Weather	5/24/2011	Browns	Browns 2	83.30	7.76	335.6	18.90	7.74	14.300	2419.60	3.50	N/A	5.2000
Wet Weather	6/27/2011	Browns	Browns 2	76.10	6.90	547.0	20.40	8.02	9.010	488.40	1.40	N/A	29.2000
Wet Weather	9/15/2011	Browns	Browns 2	72.80	6.61	448.3	19.70	7.69	10.500	1203.30	9.70	N/A	3.2000
Wet Weather	11/15/2011	Browns	Browns 2	92.00	8.72	166.6	16.10	7.47	39.880	3130.00	17.20	1.20	0.0000
Wet Weather	1/11/2012	Browns	Browns 2	91.60	9.78	299.3	12.30	7.59	249.000	10950.00	5.00	N/A	60.6700

Table 13A.1 – TMDL Monitoring Data Since 2010 (Continued)

Project Name	Date	Watershed	Site Name	DO %	DO mg/L	Cond	Temp C	pH	Flow	E coli	PCR All	PCR Huback	TSS
Dry Weather	4/11/2011	Browns	Browns 1	74.80	6.95	525.0	18.30	7.33	N/A	290.90	2.80	N/A	4.6000
Dry Weather	5/6/2011	Browns	Browns 1	93.00	9.33	526.0	15.00	7.79	88.045	185.00	1.80	N/A	2.0000
Dry Weather	5/7/2011	Browns	Browns 1	87.90	8.75	521.0	15.50	7.78	47.174	201.40	1.30	N/A	2.4000
Dry Weather	5/10/2011	Browns	Browns 1	77.00	7.22	535.0	18.40	7.37	N/A	686.70	13.30	1.40	7.2000
Dry Weather	5/9/2011	Browns	Browns 1	98.90	9.05	543.0	17.60	7.54	N/A	344.10	4.80	N/A	12.4000
Dry Weather	7/12/2011	Browns	Browns 1	74.40	6.20	560.0	24.40	7.63	N/A	1553.10	0.30	N/A	0.4000
Dry Weather	7/18/2011	Browns	Browns 1	64.00	5.44	543.0	23.40	7.49	5.230	290.90	16.40	3.60	2.4000
Dry Weather	7/21/2011	Browns	Browns 1	67.10	5.53	547.0	24.60	7.48	8.760	517.20	2.20	N/A	1.2000
Dry Weather	7/14/2011	Browns	Browns 1	104.70	8.33	542.0	27.40	7.64	3.290	1413.60	4.90	N/A	3.6000
Dry Weather	7/11/2011	Browns	Browns 1	68.50	5.76	541.0	23.50	7.50	6.230	866.40	2.00	N/A	0.8000
Dry Weather	10/3/2011	Browns	Browns 1	72.20	7.35	585.0	14.30	7.43	5.980	1413.60	3.10	N/A	1.6000
Dry Weather	10/4/2011	Browns	Browns 1	70.70	7.10	574.0	15.10	7.48	8.860	2419.60	7.70	N/A	0.4000
Dry Weather	10/5/2011	Browns	Browns 1	67.50	7.06	551.0	16.00	7.46	7.500	2419.60	13.90	3.30	0.8000
Dry Weather	10/6/2011	Browns	Browns 1	82.00	7.73	569.0	17.60	7.53	2.630	2419.60	3.40	3.30	1.6000
Dry Weather	10/24/2011	Browns	Browns 1	64.70	6.70	546.0	13.60	7.36	5.340	325.50	2.70	N/A	0.4000
Dry Weather	1/4/2012	Browns	Browns 1	88.10	10.57	561.0	7.50	7.44	N/A	137.60	3.50	N/A	2.0000
Dry Weather	1/5/2012	Browns	Browns 1	85.30	9.57	526.0	8.60	7.58	N/A	137.40	1.00	N/A	0.8000
Dry Weather	1/30/2012	Browns	Browns 1	92.10	10.29	527.0	10.30	7.72	N/A	117.80	1.30	N/A	4.8000
Dry Weather	1/31/2012	Browns	Browns 1	88.00	9.39	529.0	12.00	7.70	N/A	275.50	0.50	N/A	4.4000
Dry Weather	2/7/2012	Browns	Browns 1	87.30	9.77	516.0	10.30	7.08	51.560	344.80	1.70	N/A	2.4000
							Total Geomean			501.45			
Wet Weather	6/27/2011	Browns	Browns 1	66.20	5.87	467.3	20.60	7.13	0.000	2419.60	4.20	0.00	1.6000
Wet Weather	11/15/2011	Browns	Browns 1	89.20	8.65	138.2	16.40	7.34	62.450	6830.00	19.80	1.20	0.0000
Wet Weather	1/11/2012	Browns	Browns 1	91.20	9.66	215.8	12.40	7.31	0.000	9880.00	12.50	0.00	134.6670

Table 13A.2 - SWMP Quantifiable Statistics

Categories	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY12
Recycled Oil (tons)	16	9.1	17.82	20.27	26.88	35.38	36.4	35.32	36.52
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
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
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
# of Water Quality Complaints (non-construction) Investigations Initiated in Database	161	213	287	156	135	133	139	138	122
# of Construction Stormwater Related Inspections	4,708	5,509	5,721	6,552	6,327	6,160	5,079	5,457	5,843
# of Grading Permits Issued	270	271	252	239	165	109	121	135	142
Submitted to Stormwater Development and Review	868	1,562	1,427	1,505	1,970	1,600	1,367	1,319	1,525
# of Construction Plans Approved or Declared No Permit Needed by Stormwater Development and Review	387	449	507	619	871	687	506	559	1,174
# of Stormwater Enforcements (NOVs and SWOs)	228	197	283	190	342	188	123	148	94

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

Ambient Sampling Under Old Permit Requirements																							
Site Name	**Date**	**Time**	**Temp**	**pH**	**TKN**	**BOD5**	**COD**	**Lead**	**Nickel**	**Copper**	**Zinc**	**TSS**	**Nitrate+Nitrite**	**Tot Ammonia Nitrogen**	**TDS**	**Tot Phos.**	**Diss. Phos.**	**Chrom.**	**Total N**	**E-coli**	**Fecal Coliform**	**Fecal Strep**	**Fl**	**Entero.**
Units			**˚C**		**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**colony/100 ml**	**colony/100 ml**	**colony/100 ml**	**mg/L**	**colony/100 ml**
Trip Blank	8/3/11	9:15	---	---	0.15	<2	<10	<0.001	<0.001	<0.001	<0.001	<1	<0.2	<0.1	15	0.11	0.11	<0.001	<0.35	<1	<1	<10	<0.2	<10
Trip Blank	10/12/2011	6:15	---	---	<0.1	<2	<10	<0.001	<0.001	<0.001	0.003	<1	<0.2	<0.1	80	0.07	0.07	<0.001	---	<1	<1	<1	<.2	<1
Trip Blank	12/7/2011	7:00	---	---	0.12	<2	<10	<0.001	<0.001	<0.001	<.001	<1	<0.2	<0.1	<1	0.02	0.02	<0.001	<0.32	<1	<1	<10	<0.2	<10
Field Blank	8/3/2011	8:00	---	---	<0.1	<2	<10	<0.001	<0.001	0.001	<0.001	<1	<0.2	<0.1	<1	0.06	0.06	<0.001	---	<1	<1	<10	<0.2	<10
Field Blank	10/12/2011	6:45	---	---	<0.1	<2	22	<0.001	<0.001	<0.001	0.002	<1	<0.2	<0.1	81	0.074	0.074	<0.001	---	<1	<1	<1	<.2	<1
Field Blank	12/7/2011	8:50	---	---	<0.1	<2	<10	<0.001	<0.001	<0.001	0.002	<1	<0.2	<0.1	<1	0.0	0.0	<0.001	---	<1	<1	<10	<0.2	<10
Ewing	8/10/11	8:55	23.5	6.83	0.39	<2	<10	<0.001	<0.001	<0.001	<0.001	4	<0.2	<0.1	409	0.84	0.84	<0.001	<0.59	350	460	500	0.34	370
Ewing	10/19/2011	8:45	13.5	7.73	0.23	<2	10	<0.001	<0.001	<0.001	0.001	<1	<0.2	<0.1	607	1.57	1.57	<0.001	<0.43	71	540	1200	0.34	1900
Ewing	12/14/2011	8:25	10.4	7.87	0.23	<2	<10	<0.001	<0.001	<0.001	<.001	<1	0.6	<0.1	471	0.55	0.55	<0.001	0.8	13000	22000	490	0.31	420
Ewing, North	8/10/2011	8:30	23.2	7.95	0.31	<2	11	<0.001	<0.001	<0.001	<0.001	4	0.282	<0.1	399	0.93	0.93	<0.001	0.6	160	180	520	0.33	420
Ewing, North	10/19/2011	9:00	13.3	7.85	0.36	<2	<10	<0.001	<0.001	<0.001	0.001	<1	<0.2	<0.1	526	0.797	0.797	<0.001	<0.56	140	170	1000	0.31	2000
Ewing, North	12/14/2011	8:40	10.3	8.1	0.16	<2	<10	<0.001	<0.001	<0.001	<.001	1	0.7	<0.1	453	0.3	0.3	<0.001	0.8	120	170	260	0.31	180
Ewing, South	8/10/11	8:35	22.8	7.91	0.28	<2	<10	<0.001	<0.001	<0.001	<0.001	<1	0.5	<0.1	494	0.78	0.78	<0.001	0.7	270	500	680	0.38	1200
Ewing, South	10/19/2011	9:05	13.2	7.67	0.3	<2	18	<0.001	<0.001	<0.001	0.002	1	<0.2	<0.1	672	0.94	0.94	<0.001	<0.5	70	820	59	0.39	500
Ewing, South	12/14/2011	8:50	10.9	8.15	0.13	<2	<10	<0.001	<0.001	<0.001	0.003	1	0.7	<0.1	593	0.03	0.03	<0.001	0.8	150	240	690	0.36	510
Sevenmile	12/21/11	9:25	13.8	8.31	0.25	<2	<10	<0.001	<0.001	<0.001	0.0030	<1	1.0	<0.1	275	0.35	0.35	<0.001	1.2	540	1300	1100	0.34	1300
Sevenmile	8/17/2011	8:45	14.3	7.92	0.51	<2	14	<0.001	<0.001	<0.001	<0.001	5	0.7	<0.1	360	0.89	0.89	<0.001	1.2	490	490	1500	0.48	1100
Sevenmile	10/26/2011	9:40	14.4	7.92	0.16	<2	20	<0.001	<0.001	<0.001	0.001	<1	0.3	<0.1	597	1.18	1.18	<0.001	0.5	10	10	99	0.33	210
Sevenmile, East	12/21/2011	8:45	13.8	7.62	<0.1	<2	<10	<0.001	<0.001	<0.001	0.005	<1	0.94	<0.1	270	0.29	0.29	<0.001	<1.04	390	640	3800	0.31	1600
Sevenmile, East	8/17/2011	8:15	14.4	7.88	0.31	<2	13	<0.001	<0.001	<0.001	<0.001	9	0.556	<0.1	430	1.1	1.1	<0.001	0.9	130	180	380	0.55	460
Sevenmile, East	10/26/2011	9:00	14.4	7.88	0.14	<2	11	<0.001	<0.001	<0.001	<.001	<1	0.2	<0.1	577	1.0	1.0	<0.001	0.4	117	135	200	0.34	140
Sevenmile, West	12/21/11	8:55	13	7.94	0.12	<2	<10	<0.001	<0.001	<0.001	0.0130	3	0.9	<0.1	330	0.01	0.01	<0.001	1.0	310	310	1200	0.41	1100
Sevenmile, West	8/17/2011	8:10	12.1	7.85	0.38	<2	19	<0.001	<0.001	<0.001	<0.001	8	0.4	<0.1	451	1.16	1.16	<0.001	0.8	350	450	520	0.38	520
Sevenmile, West	10/26/2011	9:05	12.1	7.85	0.21	<2	<10	<0.001	0.003	0.001	0.009	2	<0.2	<0.1	611	0.95	0.95	<0.001	<0.41	60	70	170	0.34	200
Sugartree	8/3/2011	8:45	23.5	7.27	0.32	2	<10	<0.001	<0.001	0.004	<0.001	2	0.791	<0.1	353	0.94	0.94	<0.001	1.1	240	590	1400	0.41	1200
Sugartree	10/12/2011	6:45	18.2	6.77	0.1	<2	14	<0.001	<0.001	<0.001	0.001	<1	0.746	<0.1	447	0.902	0.902	<0.001	0.8	150	370	500	0.42	560
Sugartree	12/7/2011	9:50	11.5	7.65	0.28	<2	<10	<0.001	<0.001	<0.001	0.001	<1	2.2	<0.1	347	0.9	0.9	<0.001	2.5	100	266	670	0.33	410
Sugartree, South	8/3/11	9:30	24.7	7.91	0.3	<2	13	<0.001	<0.001	0.002	<0.001	<1	0.3	<0.1	381	0.69	0.69	<0.001	0.6	360	1000	1100	0.44	2200
Sugartree, South	10/12/2011	7:00	18.0	7.68	0.16	<2	<10	<0.001	<0.001	0.002	0.002	<1	0.2	<0.1	389	0.50	0.50	<0.001	0.4	3000	3700	1600	0.42	2400
Sugartree, South	12/7/2011	9:20	11.3	7.80	0.2	13	<10	<0.001	<0.001	<0.001	0.003	<1	1.5	<0.1	350	0.67	0.67	<0.001	1.7	290	330	1400	0.32	440
Sugartree-dup	8/3/2011	8:45	23.5	7.29	0.18	<2	<10	<0.001	<0.001	0.001	<0.001	2	0.738	<0.1	370	0.95	0.95	<0.001	0.9	490	600	1500	0.4	2900
Sugartree-dup	10/12/2011	6:45	17.8	6.84	<0.1	<2	<10	<0.001	<0.001	<0.001	0.001	<1	0.774	<0.1	441	0.71	0.71	<0.001	<0.874	82	180	420	0.45	540
Sugartree-dup	12/7/2011	8:50	11.5	7.65	0.23	<2	<10	<0.001	<0.001	<0.001	0.001	<1	2.3	<0.1	336	0.756	0.756	<0.001	2.5	260	280	570	0.34	460

Ambient Sampling Under New Permit Requirements																							
Site Name	**Date**	**Time**	**Temp**	**pH**	**TKN**	**BOD5**	**COD**	**Lead**	**Nickel**	**Copper**	**Zinc**	**TSS**	**Nitrate+Nitrite**	**Tot Ammonia Nitrogen**	**TDS**	**Tot Phos.**	**Diss. Phos.**	**Chrom.**	**Total N**	**E-coli**	**Flow**	**Oil and Grease**	**Diss. O_2**	**Conductivity**
Units			**˚C**		**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**colony/100 ml**	**ft^3/Sec**	**mg/L**	**mg/L**	**µS**
Trip Blank	2/28/2012	7:00	---	---	<0.10	2	<10	0.001	0.001	0.006	0.011	<1	<0.2	<0.1	10	<0.12	<0.12	<0.001	<0.3	<1	---	<5	---	---
Field Blank	3/6/2012	8:15	---	---	<0.10	<2	<10	<0.001	<0.001	<0.001	<0.001	<1	<0.2	<0.1	15	<0.12	<0.12	<0.001	<0.3	<1	---	<5	---	---
Browns 2	2/28/2012	9:20	11.7	8.25	<0.10	<2	<10	<0.001	<0.001	<0.001	0.002	9	1.6	<0.1	349	0.748	0.715	0.002	<1.681	648.80	16.18	<5	12.43	532
Browns 2	3/6/2012	9:10	10.7	8.20	<0.10	<2	<10	<0.001	<0.001	<0.001	<0.001	1	1.6	<0.1	336	0.732	0.841	<0.001	<1.708	61.30	13.72	<5	11.01	529
Browns 2	5/17/2012	9:20	18.0	7.94	<0.10	<2	<10	<0.001	<0.001	<0.001	0.002	4	1.7	<0.1	337	0.796	0.703	<0.001	<1.798	344.10	7.90	<5	7.54	556
Browns 2	5/22/2012	9:50	18.6	8.03	0.16	<2	<10	<0.001	<0.001	<0.001	0.002	4	1.7	<0.1	337	0.700	0.800	<0.001	1.860	387.30	6.50	<5	8.25	560
Davidson	2/28/2012	8:15	10.0	7.43	0.14	<2	<10	<0.001	<0.001	<0.001	<0.001	4	0.2	<0.1	390	0.521	0.454	<0.001	0.340	42.00	4.40	<5	10.56	565
Davidson	3/6/2012	8:15	9.7	7.85	<0.10	<2	<10	<0.001	<0.001	<0.001	<0.001	3	0.3	<0.1	348	0.589	0.580	<0.001	<0.435	201.40	6.80	<5	10.10	560
Davidson	5/17/2012	8:45	17.7	7.44	0.31	<2	<10	<0.001	<0.001	<0.001	<0.001	2	0.2	<0.1	334	0.610	0.695	<0.001	0.556	435.20	2.56	<5	7.81	553
Davidson	5/22/2012	9:00	18.3	7.48	0.40	<2	<10	<0.001	<0.001	<0.001	<0.001	2	0.2	<0.1	343	0.593	0.669	<0.001	0.605	178.50	0.46	<5	7.48	560
Richland 2	2/28/2012	8:55	11.0	7.89	0.16	<2	<10	<0.001	<0.001	<0.001	0.003	5	1.0	<0.1	362	0.540	0.487	<0.001	1.129	2419.60	18.00	<5	9.88	520
Richland 2	3/6/2012	8:35	10.2	7.90	<0.10	<2	<10	<0.001	<0.001	<0.001	0.003	2	1.4	<0.1	349	0.579	0.605	<0.001	<1.481	102.20	23.00	<5	9.60	525
Richland 2	5/17/2012	8:55	17.7	7.76	0.18	<2	<10	0.002	0.002	<0.001	0.009	1	1.3	<0.1	344	0.601	0.720	<0.001	1.439	135.40	12.00	<5	7.12	510
Richland 2	5/22/2012	9:20	19.9	7.80	0.22	<2	<10	<0.001	0.002	<0.001	0.009	1	0.3	<0.1	344	0.720	0.600	<0.001	0.480	159.70	7.50	<5	7.53	533

Note: The Ambient Monitoring Program changed when the new permit became effective.

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

Date	Time	Site Name	Flow	E. Coli	BOD5	COD	NH3	TKN	NO3/NO2	Total N	Diss P	P	Pb	Zn	Cr	Cu	Ni	Oil and Grease	Suspended Solids	Dissolved Solids
			ft3/sec.	MPN	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L	mg/L
4/16/2012	1835	Comm FF	3.685	1986	62	321	1	2	0	3	0	1	4	286	3	34	6	6	80	180
4/16/2012	1935	Comm 1HR	0.080	411	19	102	0	0	0	0	1	1	2	105	2	18	0	0	21	91
5/31/2012	2005	Comm FF	3.124	>2419.6	67	***	1	3	1	3	0	1	14	1300	7	60	7	14	174	152
5/31/2012	2105	Comm 1HR	0.351	365	31	***	0	1	0	1	0	0	2	120	0	13	0	5	31	72
5/31/2012	2100	Ind FF	0.010	1300	20	***	1	3	2	5	0	0	3	102	2	22	6	0	12	222
5/31/2012	2039	Trans FF	0.018	>2419.6	23	***	1	3	2	5	1	1	4	112	4	24	5	8	46	179
5/31/2012	2145	Trans 1HR	0.004	>2419.6	3	***	0	1	0	1	0	0	0	17	2	6	0	0	0	93

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

Stream Name	Biological Score
Fall of 2011 (Old Permit Requirements)	
Sevenmile	0.62
Browns	0.43
Spring of 2012 (New Permit Requirements)	
Browns	0.57
Richland	0.57

Note: All future biological assessments will be performed on streams based on the a rotating schedule that coincides with the Ambient Monitoring Plan. Biological Assessments are performed using the Quality System Standard Operating Procedure.

4.0 Required MS4 Program Reports and Permit Modifications

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

Nashville's MS4 Program Evaluation Report on Protected Species

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

Permit Year 1
(Period 02/01/12 – 06/31/12)

Completed:
October 1, 2012

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 species that have known to occur or have historically occurred within Davidson County.

Only 5 of the 19 rare 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.

Nashville's MS4 Program Evaluation Report on Protected Species (Continued)

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

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

Nashville's MS4 Program Evaluation Report on Protected Species (Continued)

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 all 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 controls.

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 devices that are designed to treat both the volume and quality of runoff from the property.

Nashville's MS4 Program Evaluation Report on Protected Species (Continued)

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 Davidson County. Development activities that have 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 necessary TDEC Aquatic Resource Alteration Permits (ARAPs) or Section 404 permits from the U.S. Army Corps of Engineers (USACOE) are obtained, which can not 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 other aquatic resources:

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

Nashville's MS4 Program Evaluation Report on Protected Species (Continued)

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 groundwaters;
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.

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

Nashville's MS4 Program Evaluation Report on Protected Species (Continued)

- 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

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

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

MWS Stormwater NPDES performs intense monitoring of 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 input 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 Davidson County. By virtue of protecting the Nashville's water resources, critical habitat required for aquatic species has also been preserved. During the first 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.

Nashville's MS4 Program Public Information/Education Plan

(Note: This plan is subject to change at any time the program deems necessary)

Metro Nashville Municipal Separate Storm Sewer System Permit
Public Information & Education Plan
August 2012

1.0 INTRODUCTION:

With issuance of the third cycle of Metro Nashville's Municipal Separate Storm Sewer System (MS4) permit, there is an increased emphasis on the amount of public education and outreach Metro Water Services (MWS) will be responsible for overseeing. The first major undertaking will involve developing a detailed public information and education (PIE) plan. The PIE plan will outline the stormwater educational strategies, identify targeted educational approaches, and list specific yearly goals and accomplishments. A majority of MS4 permit items are coordinated and overseen by the MWS Stormwater NPDES Division, however, development and implementation of the PIE plan will be a joint effort between the NPDES Division and MWS Public Information Division.

In the new permit, Stormwater is required to target specific "hot areas", which are defined in the permit as: *"an area where land use or activities generate highly contaminated runoff, with concentrations of pollutants in excess of those typically found in stormwater. Examples might include operations producing concrete or asphalt, auto repair shops, auto supply shops, large commercial parking areas and restaurants."* The main goals of stormwater education activities will be to increase public awareness for purposes of eliminating illicit discharges and improper disposals, reducing nonpoint source pollutants through better land management practices (i.e. fertilizer, sediment, oil, etc), reducing overall runoff quantities through innovative development strategies, and ultimately improving water quality of receiving streams. In some of Nashville's sub-watersheds, public education will be the primary Best Management Practice (BMP) implemented for improving stormwater runoff quality, therefore, improving receiving water quality. For example, watersheds that are specifically listed as being impaired for nutrients (i.e. phosphorus and nitrogen) will be targeted for public education campaigns aimed at reducing non-point source runoff from fertilizer, pet waste, etc.

1.1 RESPONSIBLE PERSONNEL:

While the entire NPDES Division and MWS Public Relations Division will be contributing to implementing PIE plan objectives, specific personnel within each department have been identified to oversee certain aspects of the plan. Table 1 depicts general PIE plan objectives and responsible personnel.

Nashville's MS4 Program Public Information/Education Plan (Continued)

Table 1 – PIE Plan Responsible Party

Personnel	PIE Plan Responsibility	Contact Information
Michael Hunt	⁘ Reviews/Oversees PIE Plan objectives to be consistent MS4 permit requirements.	615-880-2420 michael.hunt@nasville.gov
Sonia Harvat	⁘ Reviews/Approves all distribution of public information/education materials. ⁘ Coordinates targeted mail-outs and outbound calling public education activities.	615-862-4494 sonia.harvat@nasvhille.gov
Julie Berbiglia	⁘ Oversees school-specific education programs. ⁘ Oversees/coordinates all major public education events. ⁘ Oversees development of public educational materials	615-862-4506 julie.berbiglia@nashville.gov
Josh Hayes	⁘ Coordinates MS4 permit specific educational activities (industrial, commercial, construction education) ⁘ Assists with coordinating and participating in major public education events. ⁘ Documents public education events and activities for Annual Report submittals. ⁘ Assists in development of public education materials. ⁘ Assists in performing targeted mail-outs and outbound calling public education activities	615-880-2420 josh.hayes@nashville.gov

1.2 PIE PLAN GOALS AND TIMEFRAMES:

Goals for the PIE plan will be broken up into the following three main categories:

- Goal 1: Meet and/or exceed MS4 permit requirements
- Goal 2: Increase the fundamental understanding of water pollution for Nashville students, residents, businesses and municipal employees.
- Goal 3: Encourage use of better management practices that result in improved water quality of runoff from MS4 and private facilities within Metro's MS4 jurisdiction.

Measuring the success of each goal will involve different evaluation procedures. Goal 1 will be, perhaps, the easiest objective to measure. While some of the MS4 permit language is vague, there are some identified milestones and deadlines that can be assessed in each MS4 annual report for completeness. Table 2 depicts some of the major permit requirements and their desired timeframes. Assessing the effectiveness of the PIE plan in accomplishing Goals 2 and 3 will be more difficult and are discussed in greater detail in Section 5 of this document.

Nashville's MS4 Program Public Information/Education Plan (Continued)

Table 2 – Goal 1 (MS4 Permit Required Education) Objectives and Timeframes.

MS4 Permit Objectives	Completion Deadlines
Develop PIE Plan as part of overall Stormwater Management Plan	December, 2012
Perform adequate stormwater training for all pertinent Metro maintenance staff.	July, 2013
Implement educational programs at a minimum of 6 large public events per calendar year	Annually 2012 - 2017
Track and maintain records of public education and outreach activities	Annually 2012 - 2017
Assess the change in public awareness	January, 2017
Implement public notice programs for volunteer programs (i.e. tree plantings, stream clean-ups, illicit discharge detection identification & elimination, etc.)	Annually 2012 - 2017
Implement public notices for large Metro projects	July, 2013
Provide specific maintenance education to stormwater BMP owners	February, 2017
Hold a public meeting to go over each Annual Report	Annually 2012 - 2017

Note: Some of the deadlines are internal to NPDES Division, as actual MS4 permit deadlines are vague.

2.0 Targeted Audience Groups:

In order to accomplish the PIE plan objectives, the first step is to identify targeted audiences for which education delivery methods will be tailored towards. The targeted audience will be determined based on a variety of factors, some of which will include general land use, business/community types, geographical areas, previous complaints, and perceived educational needs.

2.1 School Groups/Youth Camps

School children and youth are perhaps one of the most important demographics to target for stormwater education, as they will shape the future of water quality within the county. In order to convey one consistent water quality message, the MWS Public Relations Division will lead all academic based education efforts. MWS will target 4th grade for primary distribution of stormwater educational activities.

Nashville's MS4 Program Public Information/Education Plan (Continued)

2.2 Geographical "Hot Areas" within the County

As discussed in Section 1, the new MS4 permit requires Metro to target "hot areas" as we designate. MWS NPDES will utilize its vast monitoring data, general knowledge from field investigations, and TDEC-designated watershed impairment status to aid in determining geographic "hot areas". Geographic "hot areas" will be delineated into three main categories based on overall land use associated pollutants of concern. Table 3 refers to the typical pollutants expected in runoff from each major urban land use category. For purposes of public education, the three major urban land use categories have been identified to target specific messages: Residential, Commercial, and Industrial.

Table 3 – Typical Pollutant Runoff form Major Land Use Categories

Major Land Use	Typical Pollutants	Typical Source	Resulting Water Quality Degradation to Target in Educational Messages
Residential	1. Nutrients	1. Over-fertilization, Pet Waste, Human Waste and Detergents from failing septic systems.	1. Increased algal blooms, depleted dissolved oxygen levels from decaying algae.
	2. Sediment	2. Grading areas without controls. Removing stream bank vegetation.	2. Reduced water clarity for aquatic plants, smothers aquatic life, transports other pollutants.
	3. Pathogens	3. Failing septic systems, illegal cross-connections of sanitary and stormwater, and pet waste.	3. Potentially harmful to human health.
	4. Organics	4. Dumping of leaves/grass clippings in conveyances	4. Decomposition depletes dissolved oxygen levels within streams.
Light Commercial	1. Hydrocarbons (Oil & Grease)	1. High-traffic parking lot areas, leaking storage tanks, etc.	1. Toxic to aquatic life and impact drinking water supplies.
	2. Trash	2. Poor grounds upkeep, especially in parking areas and around dumpsters.	2. Aesthetically displeasing, can block drainage pipes causing erosion, can be harmful to wildlife.
	3. Nutrients	3. Landscaping/golf courses.	3. Increased algal blooms, depleted dissolved oxygen levels from decaying algae.
	4. Sediment	4. Grading/developing without controls. Removing stream bank vegetation.	4. Reduced water clarity for aquatic plants, smothers aquatic life, transports other pollutants.
Industrial/ Heavy Commercial	1. Metals	1. Exposed industrial processes/improper disposal.	1. Acute or chronic toxic impacts to aquatic wildlife.
	2. Sediment	2. Exposed industrial processes/improper disposal. Gravel parking lots with heavy truck traffic.	2. Reduced water clarity for aquatic plants, smothers aquatic life, transports other pollutants.
	3. Hydrocarbons (Oil & Grease)	3. Equipment leakage, leaking storage containers, high-traffic pervious areas.	3. Toxic to aquatic life and impact drinking water supplies.

Table 4, below, provides a description of the designated geographic "hot areas" that have been identified thus far. The geographic "hot areas" will receive an increased amount of location/pollutant of concern-specific education. Figure 1 depicts the overall locations of the geographical-designated "Hot Areas". Individual maps of each geographic "hot area" can be found in Appendix A.

Nashville's MS4 Program Public Information/Education Plan (Continued)

Table 4 – Geographical-Designated Hot Areas for Targeted Education

Area Name	Watershed	Land Use	Size (Acres)
Area 1	Browns Creek	Industrial/Heavy Commercial	2290
Area 2	Browns Creek	Residential	2294
Area 3	McCrory Creek	Residential	2068
Area 4	Harpeth River	Residential	497
Area 5	Harpeth River	Residential	4059
Area 6	Sugartree Creek	Residential	1486
Area 7	Bosley Springs Branch	Residential	1170
Area 8	Richland Creek	Industrial/Heavy Commercial	926
Area 9	Richland Creek	Light Commercial	731
Area 10	Mill Creek	Industrial/Heavy Commercial	1986
Area 11	Mill Creek	Industrial/Heavy Commercial	1460
Area 12	Sevenmile	Industrial/Heavy Commercial	207
Area 14	Hurricane Creek	Industrial/Heavy Commercial	1859
Area 15	W. Branch Hurricane Creek	Residential	717
Area 13	Mill Creek Upper	Light Commercial	810
Area 16	Whites Creek	Residential	1843
Area 17	Manskers Creek	Residential	2289
Area 18	Gibson and Dry Creek	Light Commercial	1211

2.3 Business Type/Community "Hot Areas"

There are certain types of businesses scattered throughout the county (not bound by geographic boundaries) in which MWS NPDES have found to have a high potential for polluted runoff. While some of the business-designated "hot areas" may overlap with the geographically-designated "hot areas", MWS will conduct additional targeted educational campaigns towards theses respective businesses. Business types that will be recipients of targeted education will include:

- Ready Mix Concrete Plants – focus on sediment runoff;
- Asphalt Mixing Plants – focus on sediment and oil & grease runoff;
- Recycling Centers – focus on sediment, metals, and trash runoff;
- Automotive Salvage Yards – focus on sediment and automotive fluid runoff;
- Large Automotive Repair Shops – focus on automotive fluid runoff; and
- Landscaping companies – focus on sediment runoff and application of pesticides, herbicides, fertilizers, and fungicides.

Nashville's MS4 Program Public Information/Education Plan (Continued)

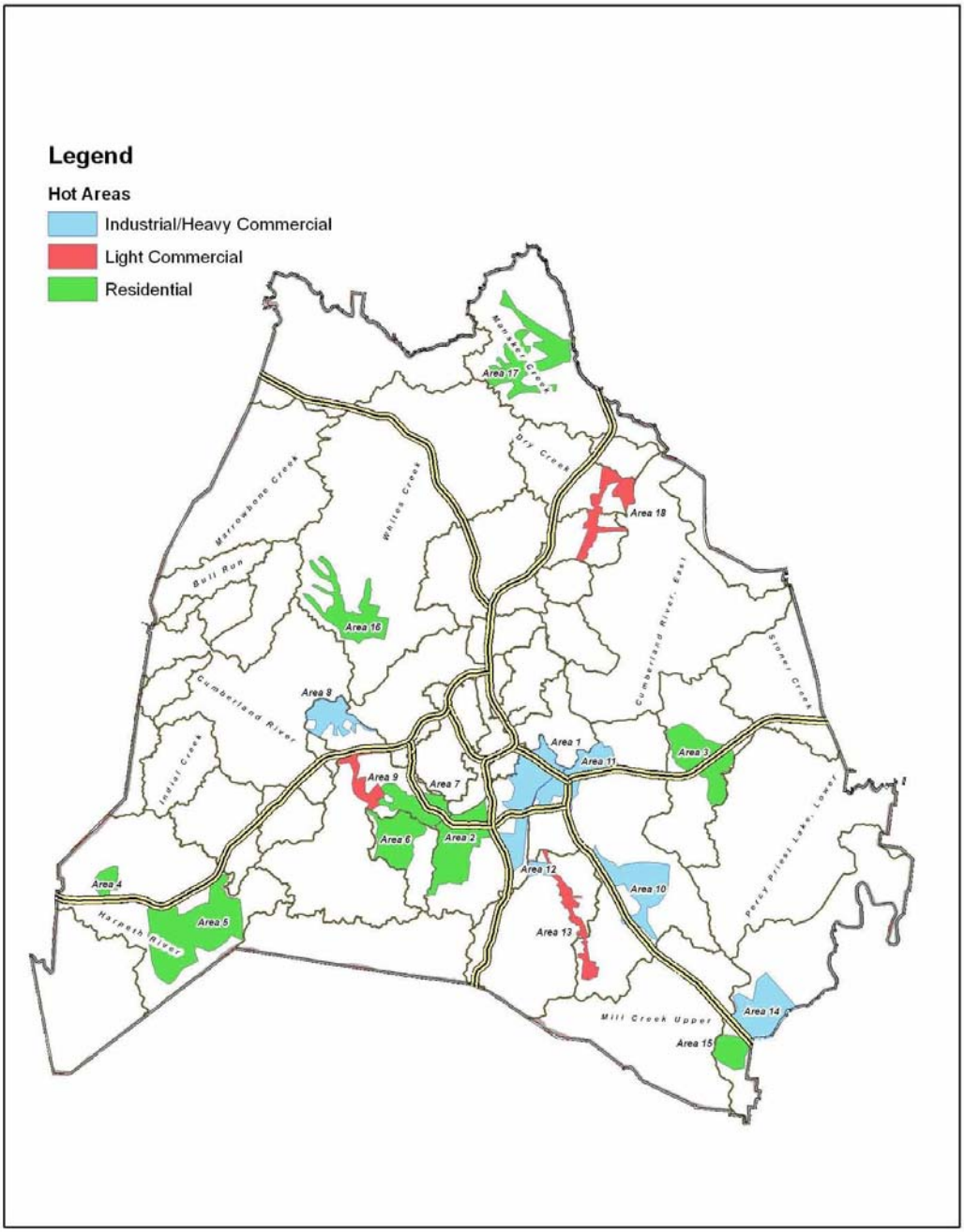


Figure 1 – Geographic-designated Hot Areas to Receive Extra Targeted Education

Nashville's MS4 Program Public Information/Education Plan (Continued)

2.4 High Citizen Complaint Zones

MWS receives numerous complaints about a variety of issues throughout the county. Complaints range from people dumping materials in storm ditches (leaves, limbs, trash, etc.) to people discharging illegal substances to the storm system. Upon analysis of complaints, MWS may choose to target certain areas that may not be part of the above-defined geographic "hot areas" for problem-specific, localized education. This type of education will performed on a case by case basis.

2.5 Large Civic Educational Events

As prescribed in the MS4 permit, Metro is required to perform stormwater education at a minimum of six large public events per calendar year. MWS Stormwater will satisfy this requirement by participating in large community events that relate to environmental awareness. The following large civic events have been preliminarily identified for Metro to participate with a stormwater education component:

1. Lawn and Garden Show
2. Earth Day
3. Catfish Rodeo
4. Adventure Science Center CHOMP event
5. Dragon Boat Races
6. Zoo Docents Meeting or Master Gardener Class

2.6 Post Construction Treatment Devices (BMP) Owners

Developing sites that meet certain thresholds within the county are required to install permanent stormwater treatment devices, otherwise referred to as Best Management Practices (BMPs), that are usually designed to treat stormwater runoff for water quality and quantity purposes. Once the site is completely developed, the property owner becomes responsible for permanent maintenance of BMPs. Metro will specifically target owners of BMPs to achieve proper maintenance.

2.7 Grading Contractors/Development Community

The development community, including land developers and grading contractors, will be the target of specific educational outreach. Education geared toward the development community will be focused on the impacts of sediment runoff during construction and general pollutant runoff from pervious surfaces after construction is completed.

2.8 Municipal Maintenance Employees

All Metro departments with field maintenance staff will be a key target audience for distributing stormwater education materials. As prescribed in the MS4 permit, municipal maintenance employees shall be trained on potential stormwater impacts that could result from maintenance activities. In addition, municipal field staff shall be trained on identifying and reporting occurrences of illicit discharges.

2.9 General Metro Residency

Perhaps the most important constituency within Metro to educate for stormwater quality purposes is the general residents within the county. While there may exist overlap within the above-described target areas, Metro will also implement techniques to try to reach the masses on more general terms.

Nashville's MS4 Program Public Information/Education Plan (Continued)

3.0 Education Techniques for Targeted Audiences:

MWS will utilize a variety of tools to perform stormwater education. Education delivery methods will be designed to achieve maximum distribution to the targeted audiences. For example, educational efforts for the above-described "hot areas" will include mail-outs, outbound calling, coordinating with local non-profit watershed groups, and possibly holding community meetings. Table 5 matches the potential educational technique to the specific targeted audiences. As the MS4 public information plan proceeds, new techniques may be utilized for specific targeted audiences and the PIE Plan will be updated accordingly.

Table 5 – Educational Delivery Methods For Each Targeted Audience Group

Targeted Audience Group	Public Education/Outreach Technique
School Groups /Youth Camps	In-person presentations/demonstrations Distribution of educational materials designed for youth. (i.e. games, puzzles, tests, etc.)
Geographic-Designated "Hot Areas"`	Mail-outs (area-specific) Outbound calling (area-specific) Soliciting help from local non-profit watershed groups in distributing educational materials Co-host community meetings with local non-profit watershed groups
Community/Business Type "Hot Areas"	Mail-outs (business-specific) Handing out materials Hosting workshops
High Citizen Complaint Zones	Mail-outs (problem/complaint-specific) Outbound calling (problem/complaint specific)
Large Community Events	Manning stormwater educational booths Performing stormwater demonstrations Handing out educational materials
Post Construction BMP Owners	Mail-outs Handing out materials/Drop in visits by NPDES
Grading Contractors/Development Community	Face to face during Grading Permit process Participate in TDEC's Level 1 EPSC Workshop
Municipal Maintenance Employees	In-person presentations Handing out materials
General Metro Residency (General Stormwater Education)	Channel 3 Public Service Announcements (PSAs) Public signage (vehicle decals, billboards, etc.)

4.0 Education Implementation Timeframe:

PIE Plan implementation will be based, first and foremost, on MS4 Permit deadlines. In order to keep track of stormwater education deadlines and responsibilities, a Public Education Matrix Table has been developed that will be the blueprint for yearly public education activities. The Matrix Table incorporates at least one type of education activity geared toward each Targeted Audience Group.

Nashville's MS4 Program Public Information/Education Plan (Continued)

Table 6 – Public Education Individual Task Matrix

Task	Public Education Activity	Education Deadline	Lead Staff
1	Complete PIE Plan	December 2012	Josh Hayes Julie Berbiglia
2	Give presentations at least 150 schools	Annually by June 31st (Starting in Permit Year 2)	Julie Berbiglia
3	Send mail-outs, perform outbound calling, work with local non-profit watershed groups to distribute educational materials, or host community meetings for at least 4 geographic "hot areas" focused on the issues important to those areas. (i.e. pet waste, fertilizer application education to residential areas)	Annually by June 31st (Starting in Permit Year 2)	Josh Hayes Julie Berbiglia
4	Send Mail-outs to or personally visit to drop off educational materials to at least 25 designated Business Type/Community designated "hot areas". At least one of the years shall be directed towards applicators/distributors of pesticides, fertilizers, etc.	Annually by June 31st (Starting in Permit Year 2)	Sonya Erickson
5	Co-host an industrial stormwater workshop with TDEC for all current TMSP sites.	By June 31, 2013	Josh Hayes
6	Send Mail-outs or perform outbound calling to high complaint zones as determined necessary	As Deemed Necessary	Sonia Harvat Josh Hayes
7	Participate in or host at least 6 large community/civic events	Annually by June 31st (Starting in Permit Year 2)	Julie Berbiglia Mary Bruce
8	Send Mail-outs to all known post-construction BMP owners that were installed as per Metro's grading permit requirements to treat water quality and water quantity runoff.	February 2017	Josh Hayes Rebecca Dohn
9	Give out stormwater educational materials at every pre-construction meeting for Grading Permits.	Annually by June 31st (Starting in Permit Year 1)	Dale Binder
10	Distribute stormwater educational materials to building permit applicants for single family homes	Annually by June 31st (Starting in Permit Year 1)	Kimberly Hayes
11	Present at all TDEC Level 1 EPSC workshops in Nashville.	As scheduled by TDEC	Dale Binder
12	Perform in-person training or provide maintenance personnel with stormwater educational materials	At least one Metro maintenance department per day. All Metro maintenance departments by February 2017.	Josh Hayes Michael Hunt
13	Air at least 6 PSAs on Metro's Channel 3	Annually by June 31st (Starting in Permit Year 2)	Josh Hayes Julie Berbiglia
14	Air at least 2 pollutant specific slideshows	Annually by June 31st (Starting in Permit Year 2)	Josh Hayes Julie Berbiglia
15	Provide opportunity for public participation/involvement for stormwater awareness projects (i.e. stream clean-ups, tree plantings, etc.)	Annually by June 31st (Starting in Permit Year 2)	Sonia Harvat
16	Provide public notice for all large Metro construction projects (possibly web-site postings)	Annually by June 31st (Starting in Permit Year 2)	Michael Hunt Anna Kuoppamaki
17	Make updates to the stormwater website to reflect latest regulations, technology, etc.	Annually by June 31st (Starting in Permit Year 1)	Michael Hunt Anna Kuoppamaki
18	Present each Annual Report to a public forum (i.e. Stormwater Management Committee or Stormwater Advisory Committee may suffice.	Annually by December 31st (Starting in Permit Year 1)	Michael Hunt Josh Hayes

Nashville's MS4 Program Public Information/Education Plan (Continued)

PIE Task	06/31/12	12/31/12	06/31/13	12/31/13	06/31/14	12/31/14	06/31/15	12/31/15	06/31/16	12/31/16
1. Complete PIE Plan										
2. Give presentations at least 150 schools classes PY 1&2										
PY3										
PY4										
PY5										
3. Distribute educational materials to at least 4 geographic "hot areas" PY1&2										
PY3										
PY4										
PY5										
4. Send Mail-outs or personally visit at least 25 business "hot areas" PY1&2										
PY3										
PY4										
PY5										
5. Co-host an industrial stormwater workshop with TDEC for all current TMSP sites.										
6. Send Mail-outs or perform outbound calling to high complaint zones as determined necessary										
7. Participate in or host at least 6 large community/civic events PY1&2										
PY3										
PY4										
PY5										
8. Send Mail-outs to all known post-construction BMP owners										
9. Give out stormwater educational materials at every pre-construction meeting for Grading Permits.										
10 Distribute stormwater educational materials to building permit applicants for single family homes										
11. Present at all TDEC Level 1 EPSC workshops in Nashville.										
12. Perform stormwater training or provide maintenance personnel										
13. Air at least 6 PSAs on Metro's Channel 3 PY1 &2										
PY3										
PY4										
PY5										
14. Air at least 2 pollutant specific slideshows PY1&2										
PY3										
PY4										
PY5										
15. Provide opportunity for public participation/involvement for stormwater awareness projects										
16. Provide public notice for all large Metro construction projects (possibly web-site postings)										
17. Make updates to the stormwater website to reflect latest regulations, technology, etc.										
18. Present each Annual Report to a public forum PY1&2										
PY3										
PY4										
PY5										

Note: PY = Permit Year

Color Key	Sonia Harvat	Julie Berbiglia	Michal Hunt	Josh Hayes	Dale Binder	Sonya Erickson	Kimberly Hayes

Nashville's MS4 Program Public Information/Education Plan (Continued)

5.0 PIE Plan Effectiveness Assessment:

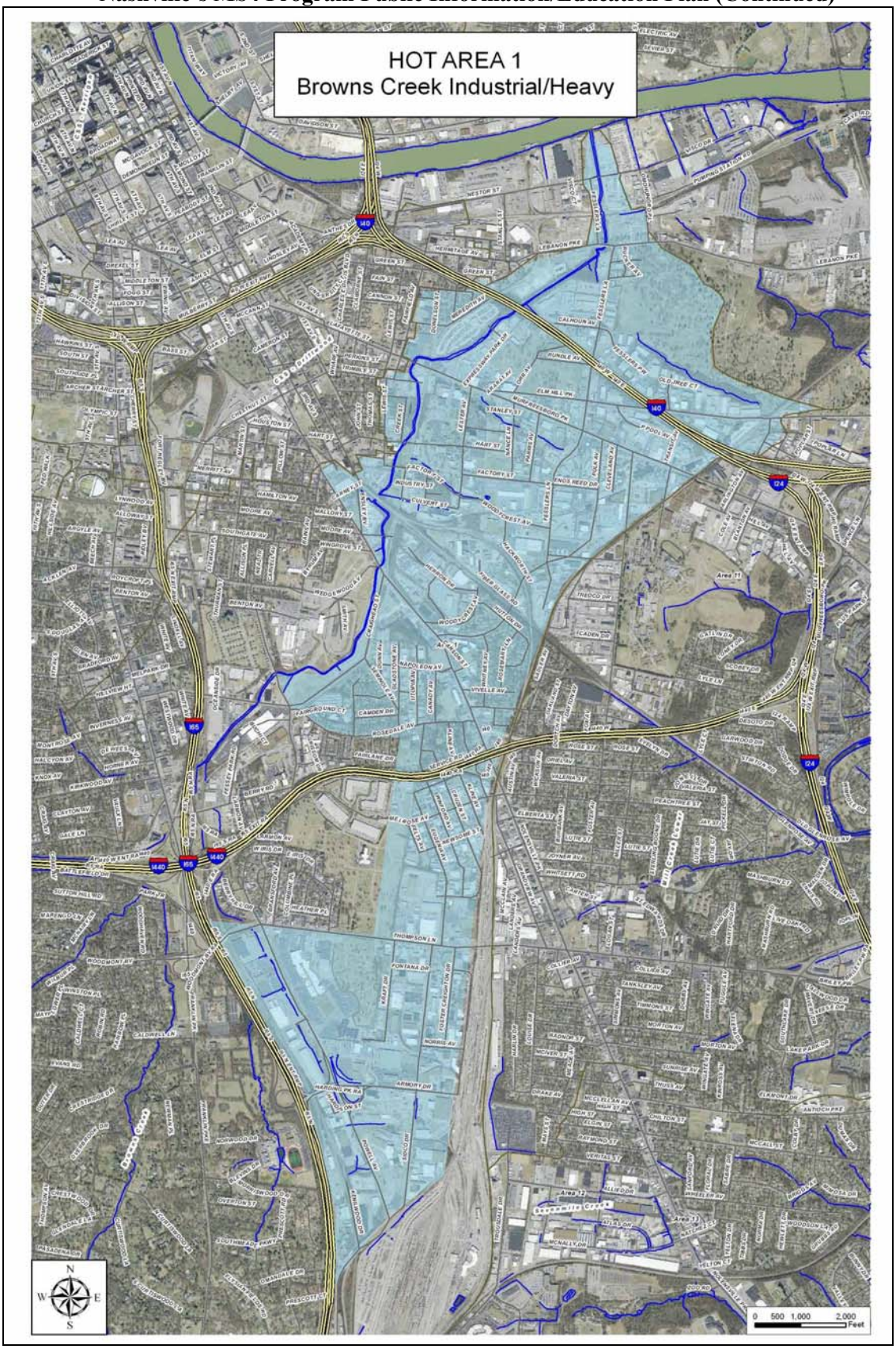
Throughout implementation of the PIE Plan, MWS will attempt to assess the effectiveness of the educational messages. Some potential assessment methods may include performing surveys to certain target audiences during presentations and analyzing monitoring data before and after targeted education has been performed.

Nashville's MS4 Program Public Information/Education Plan (Continued)

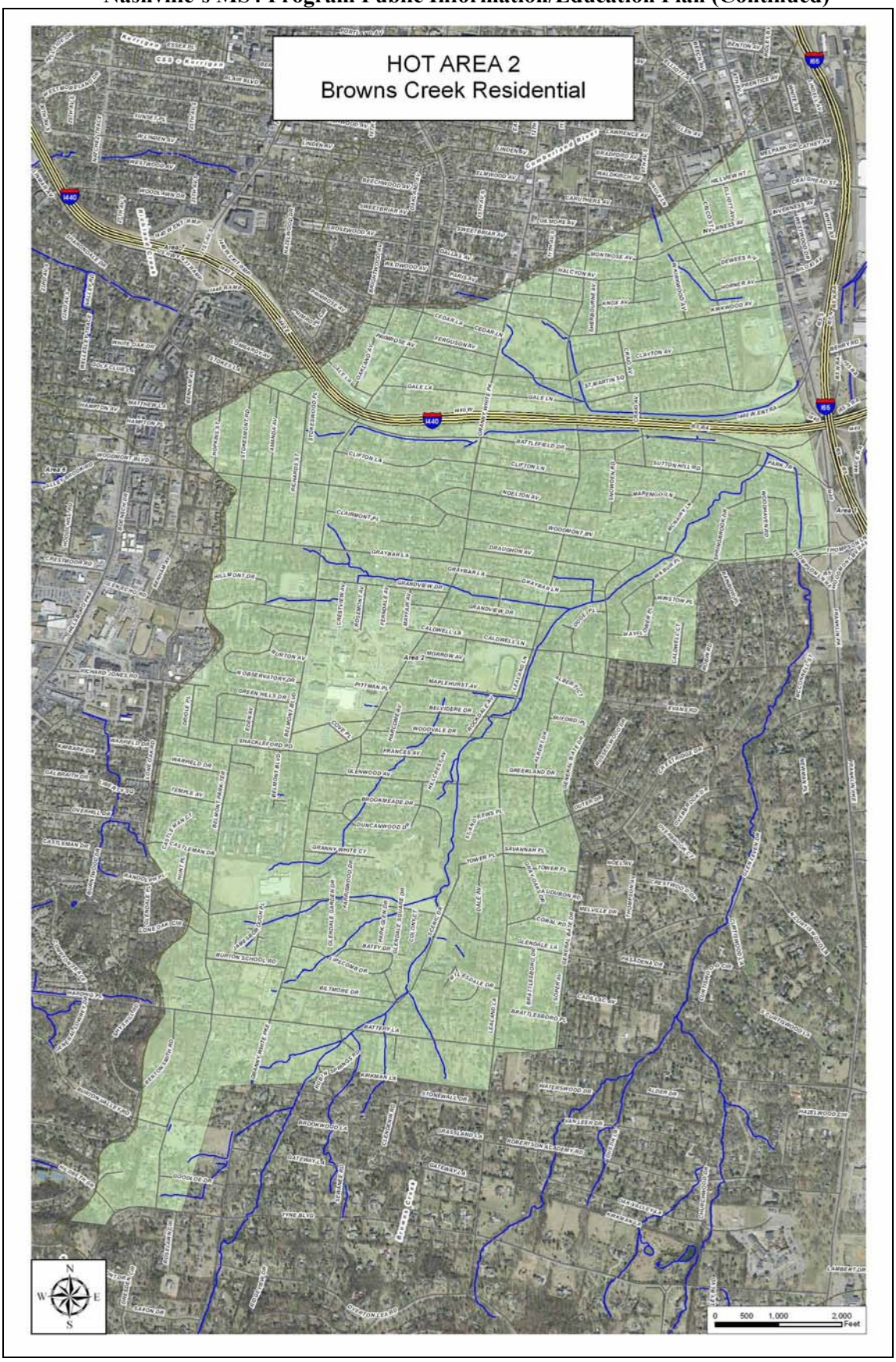
Appendix A

Individual Geographic "Hot Areas" Maps

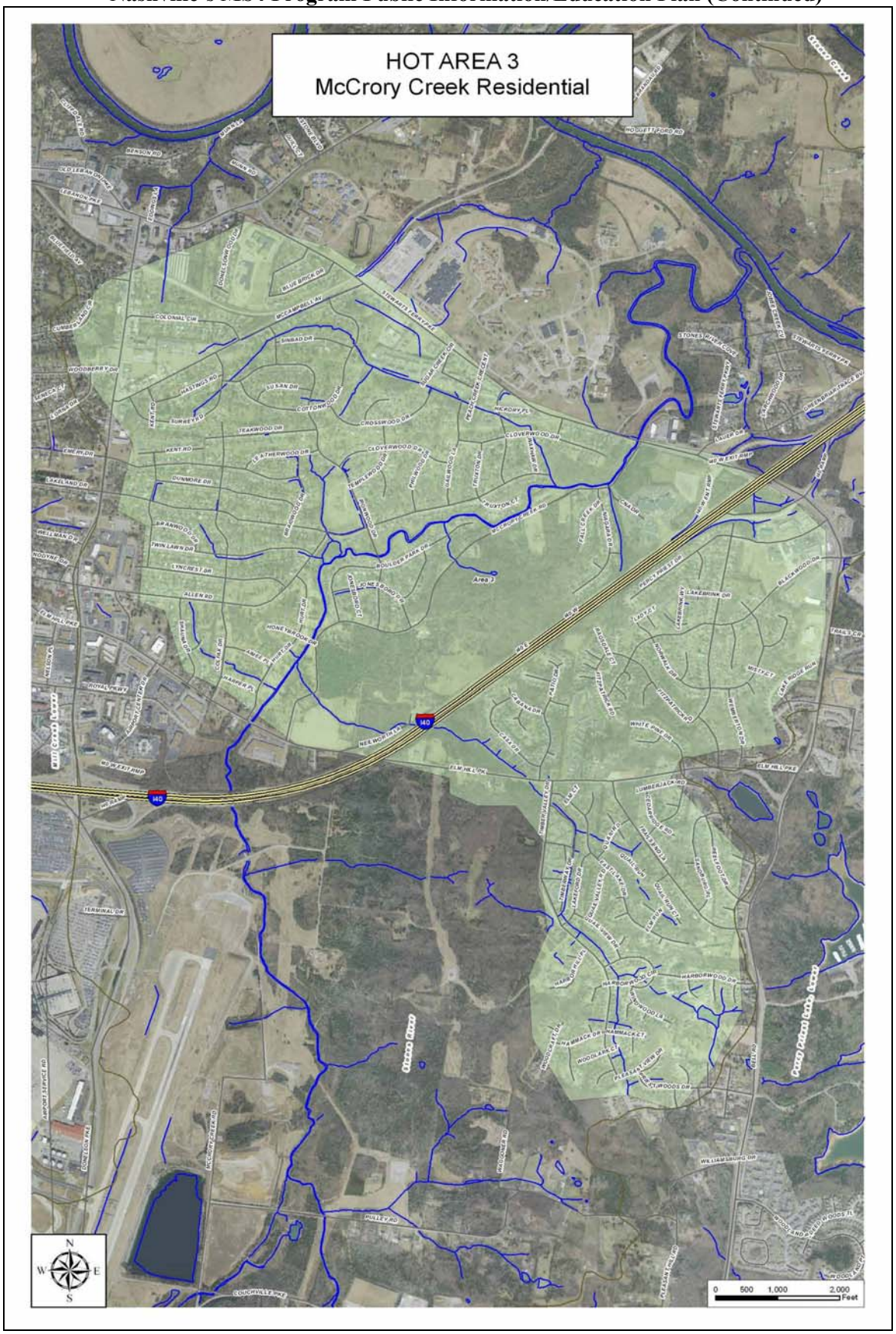
Nashville's MS4 Program Public Information/Education Plan (Continued)



Nashville's MS4 Program Public Information/Education Plan (Continued)



Nashville's MS4 Program Public Information/Education Plan (Continued)



Nashville's MS4 Program Public Information/Education Plan (Continued)

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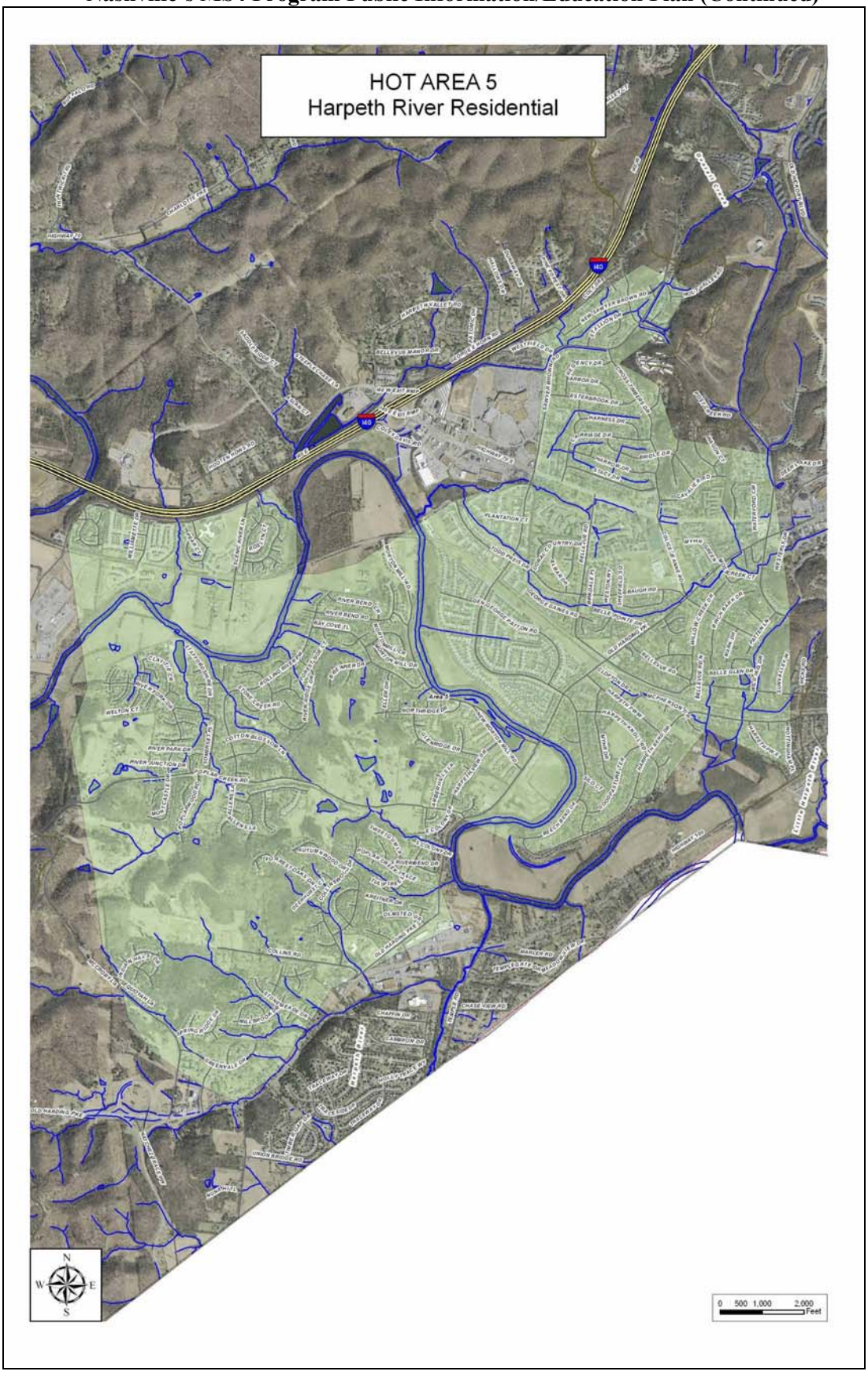
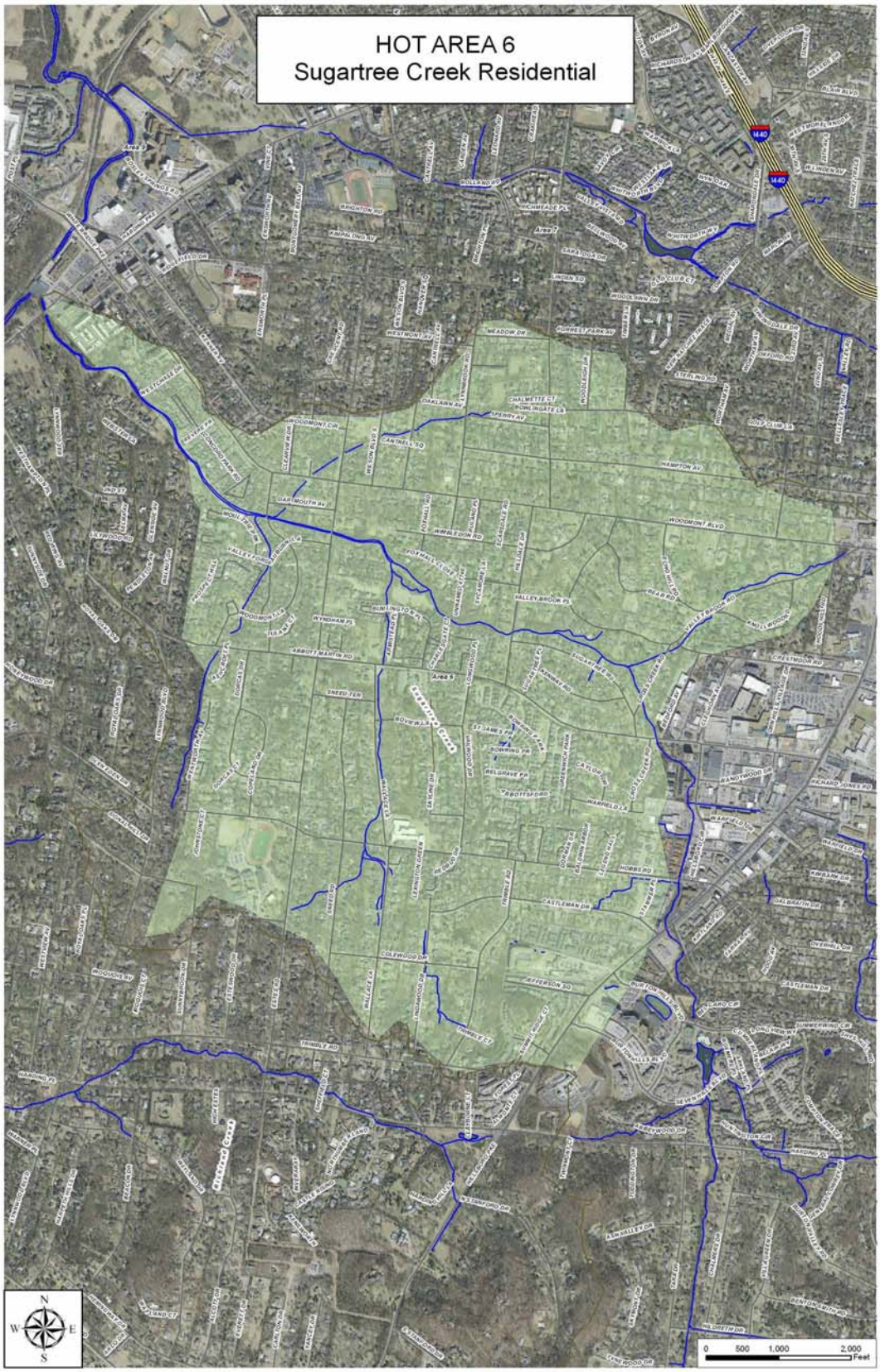


Nashville's MS4 Program Public Information/Education Plan (Continued)



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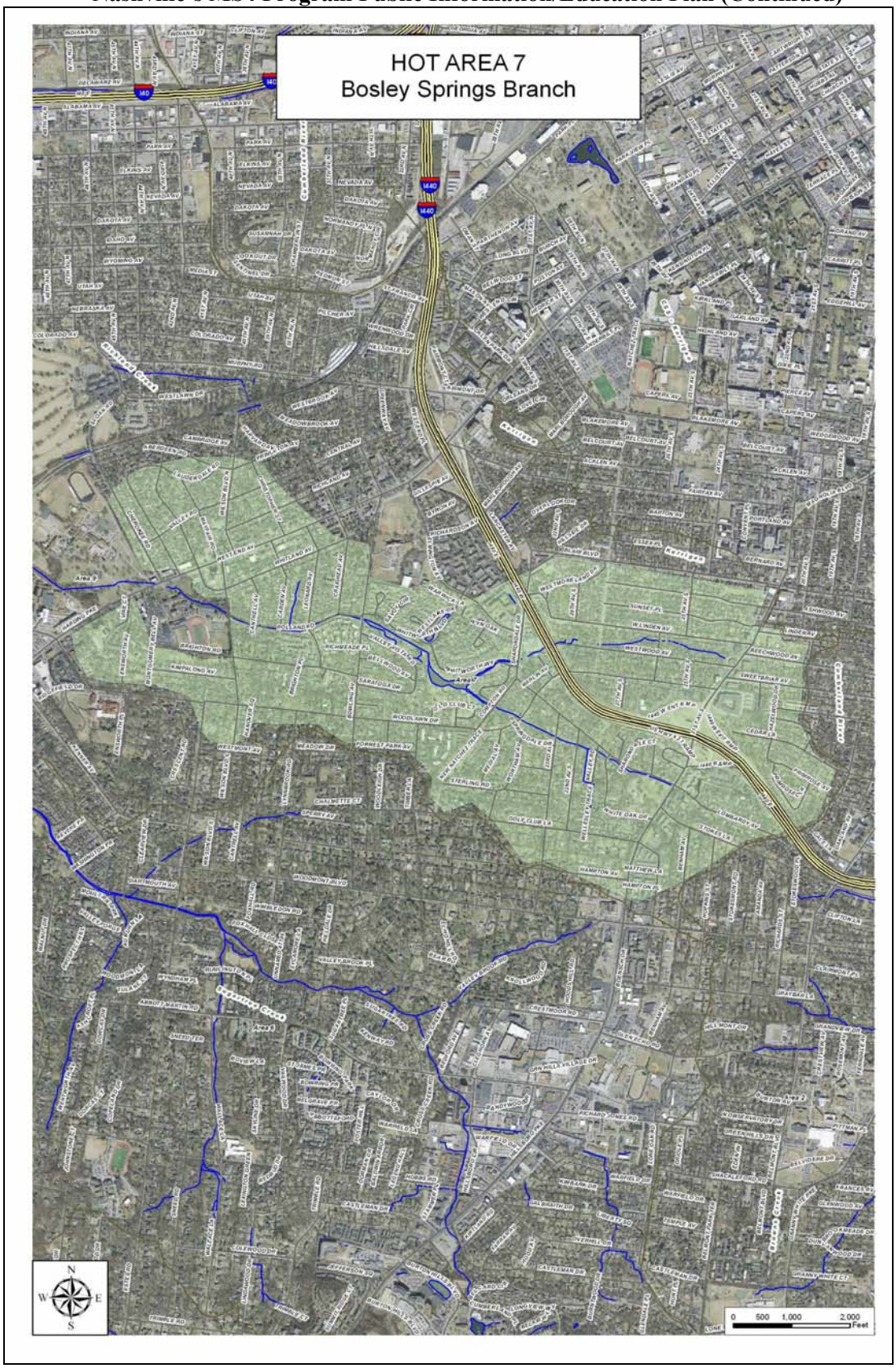

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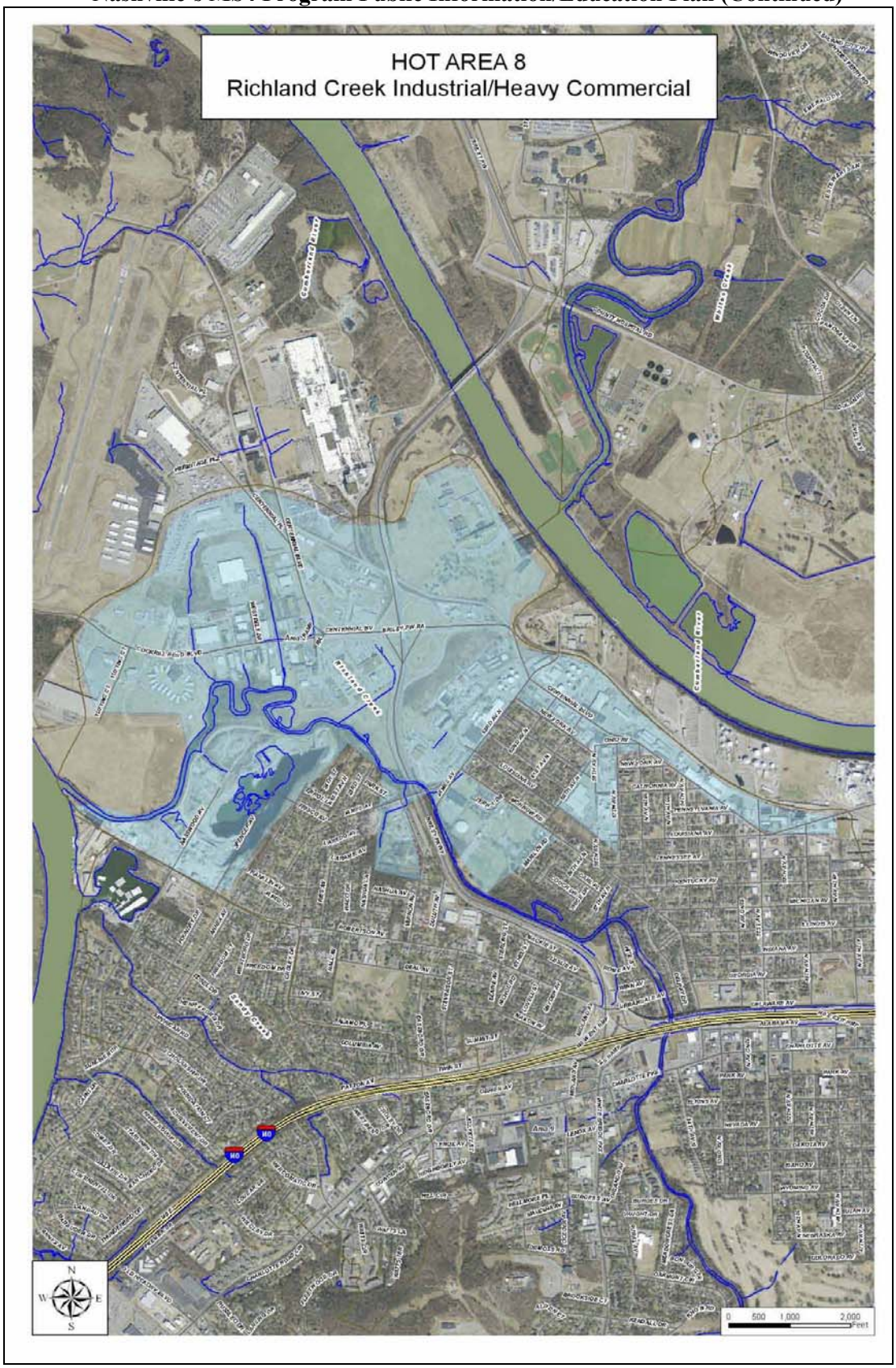

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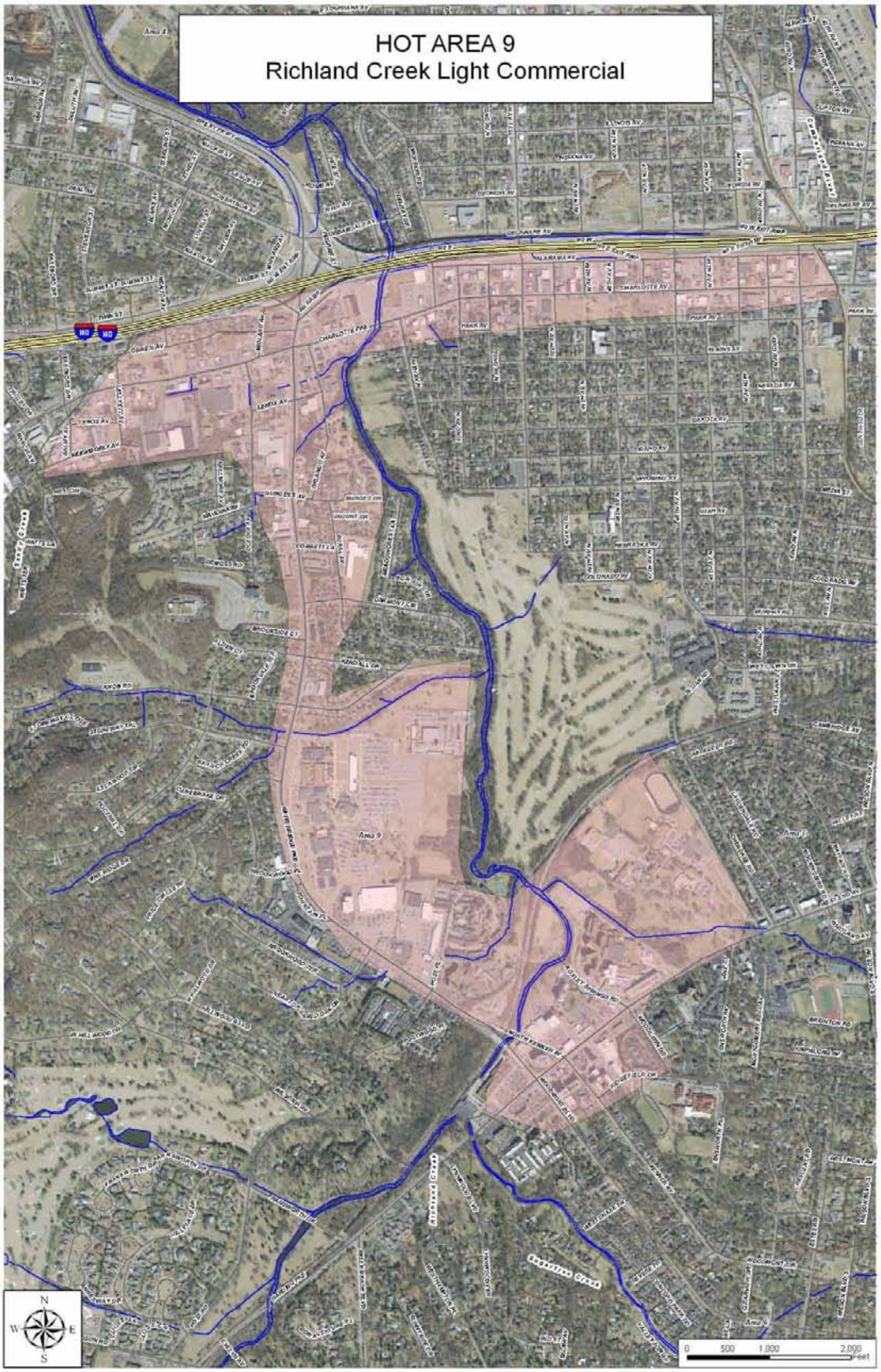

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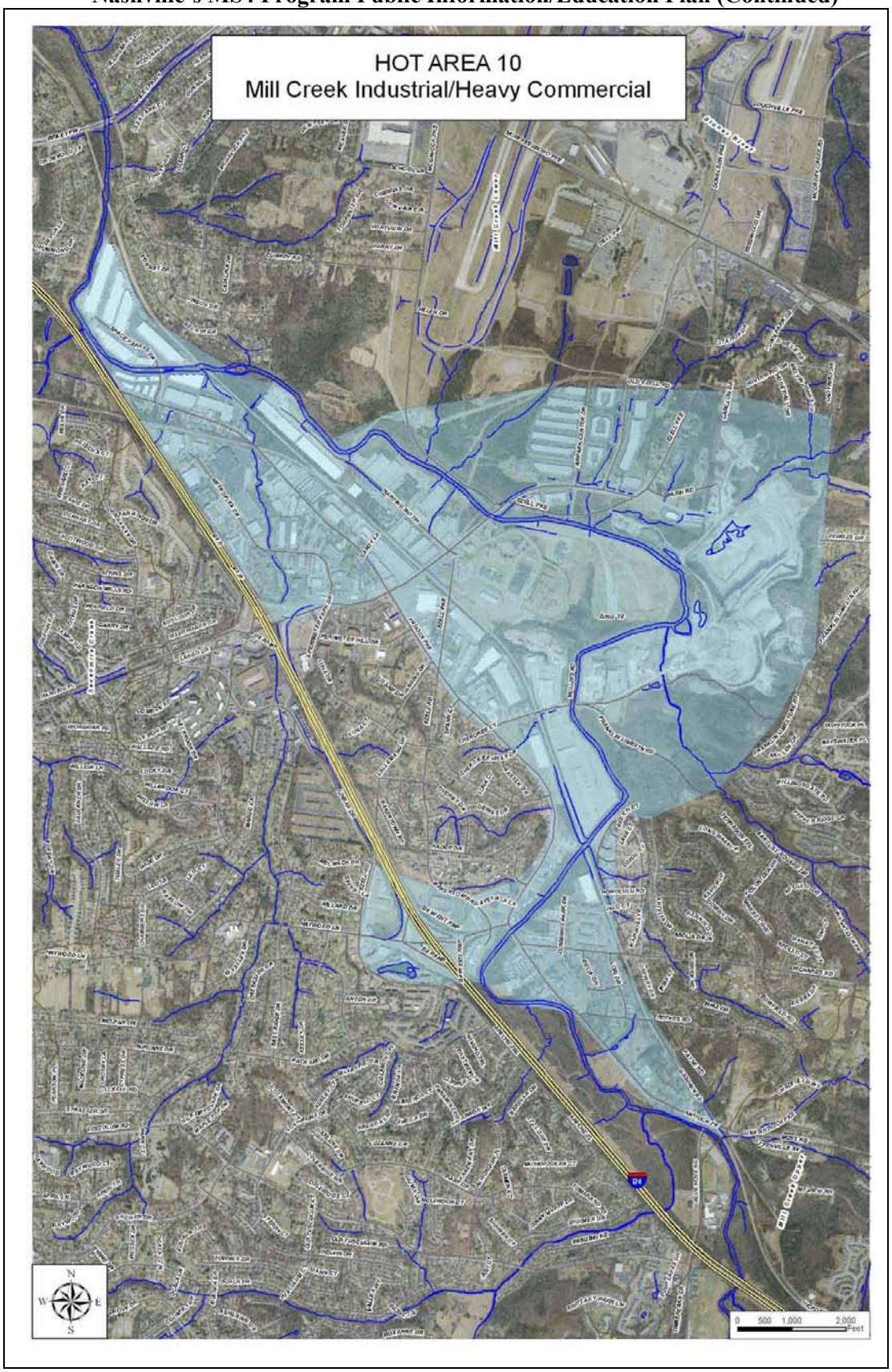

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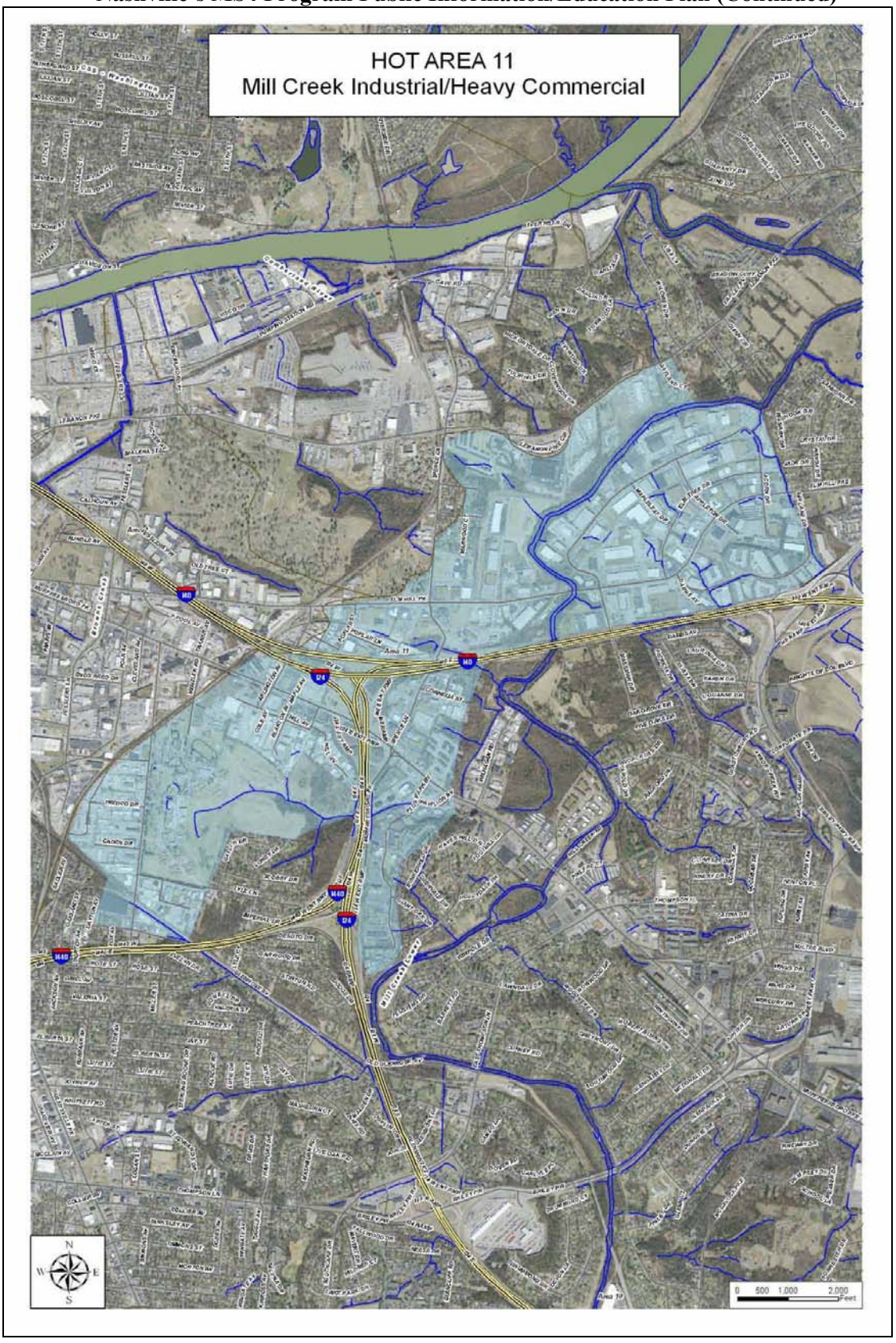

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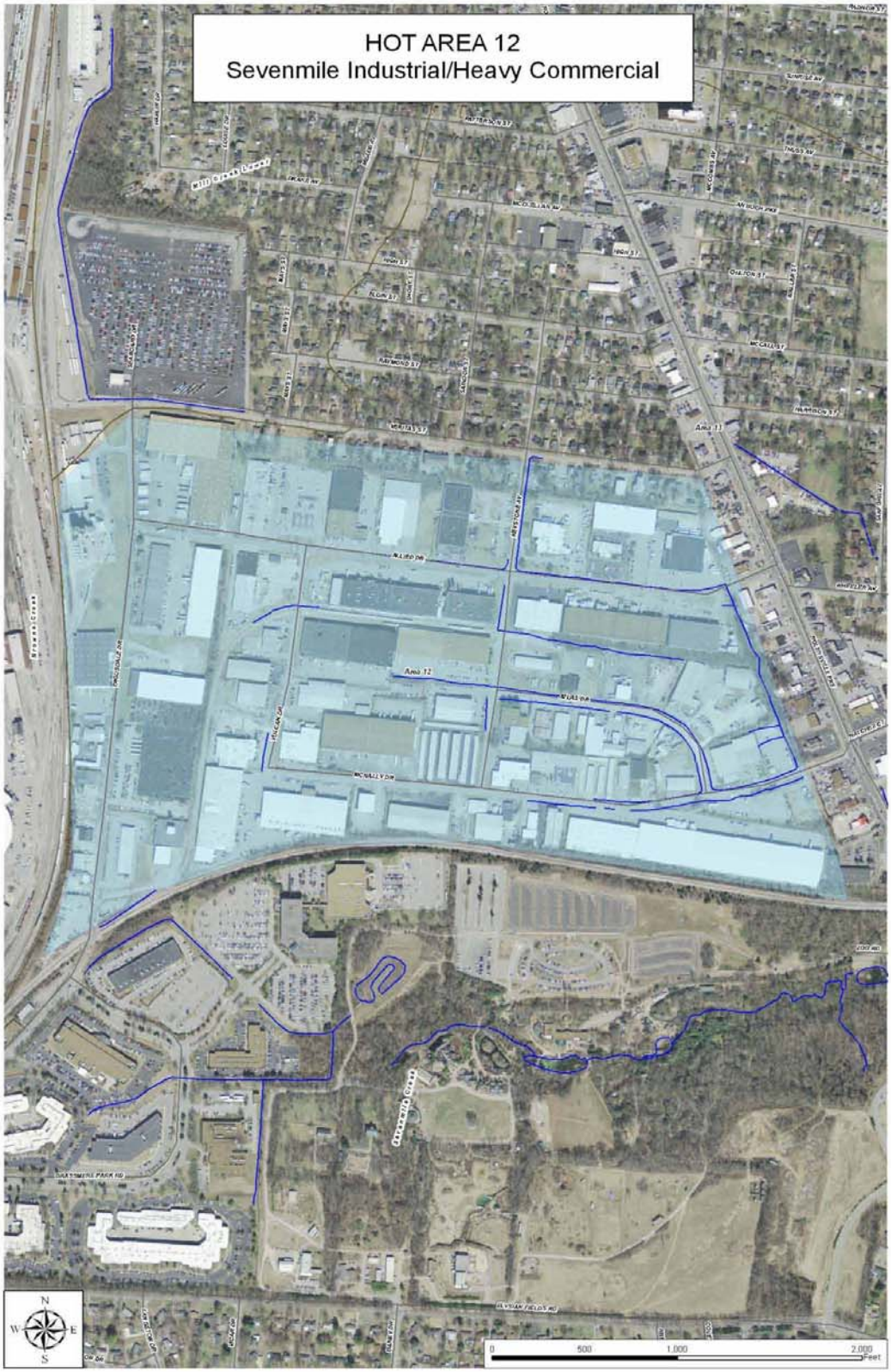

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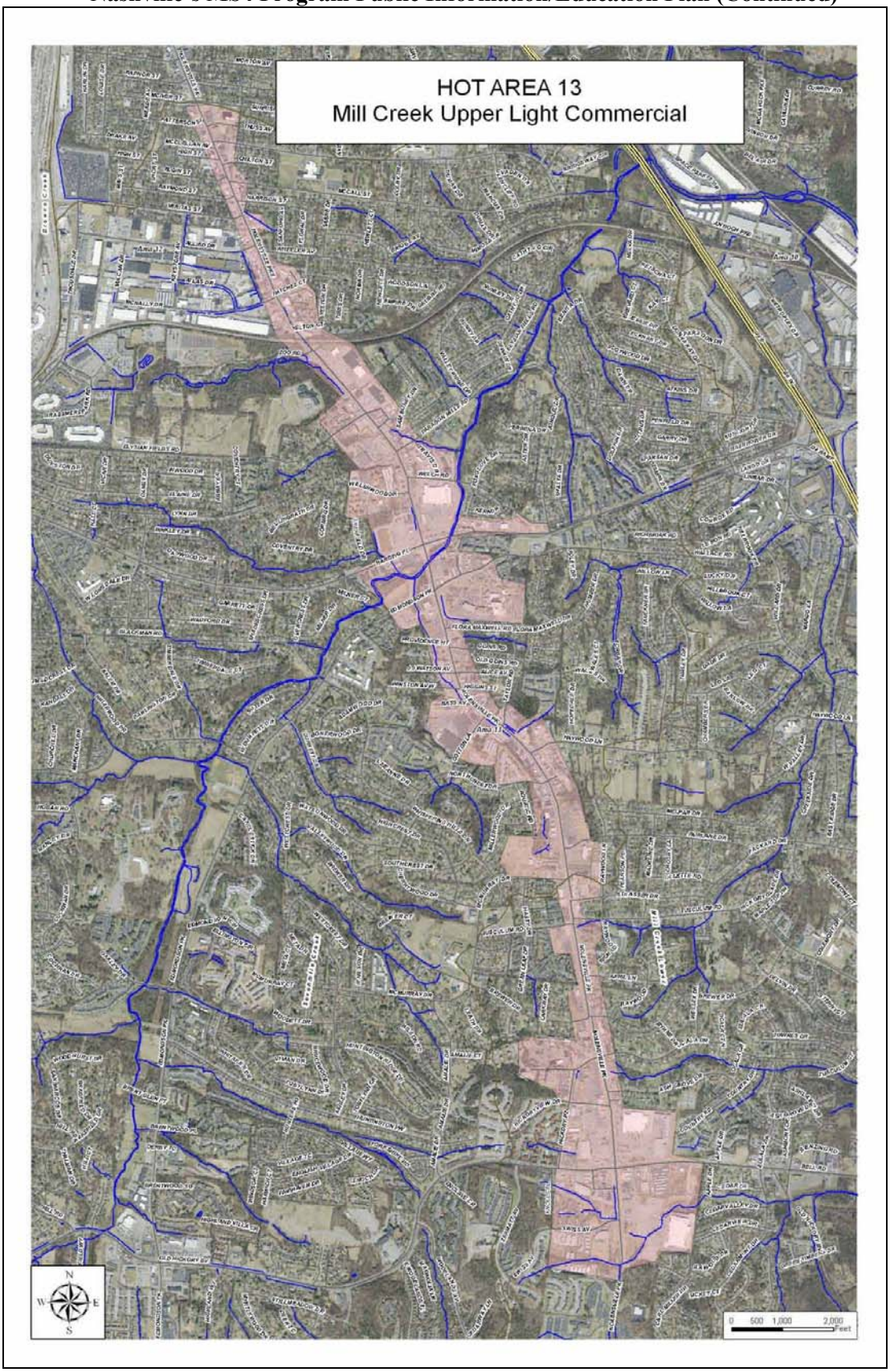

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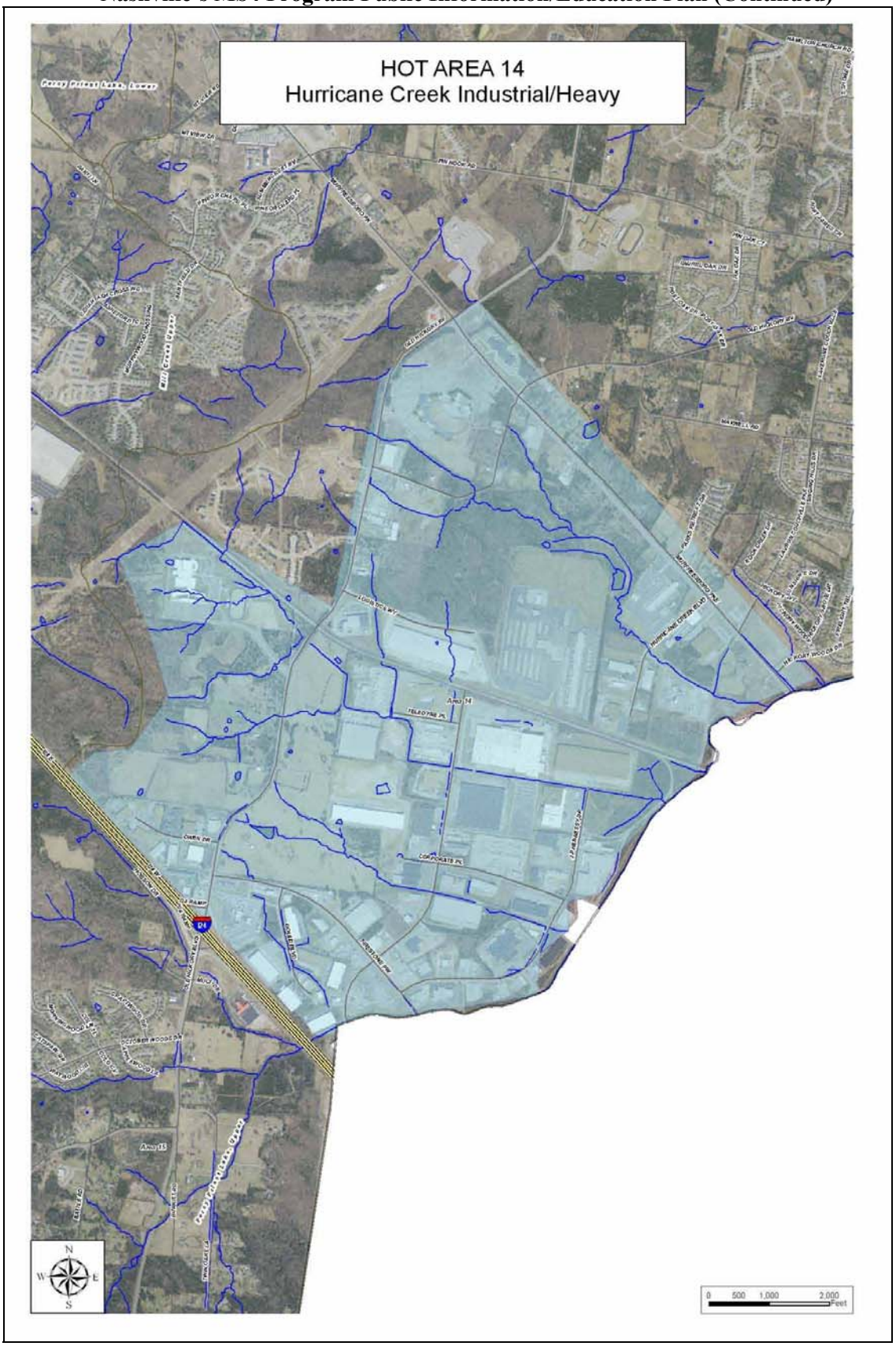

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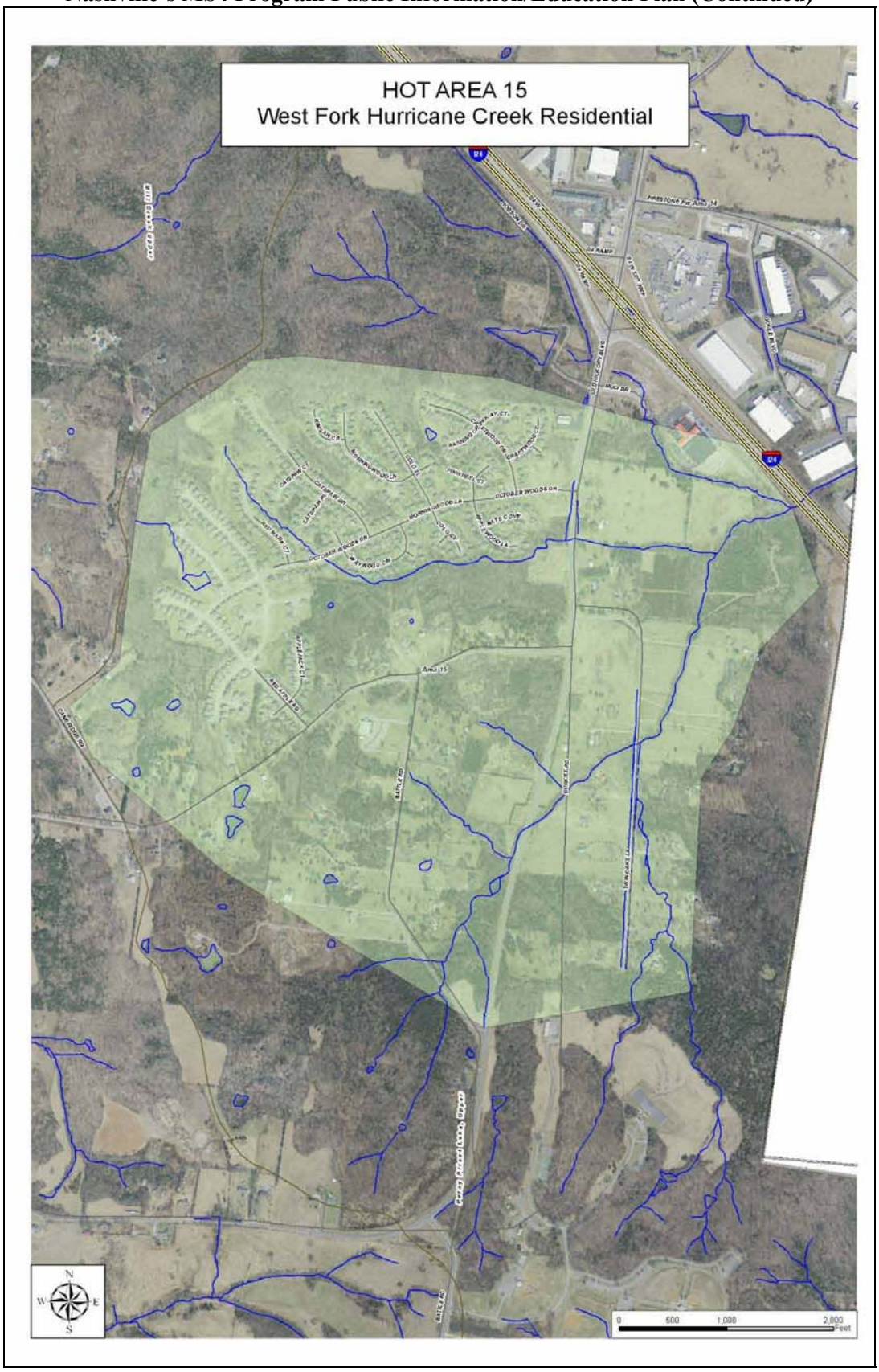

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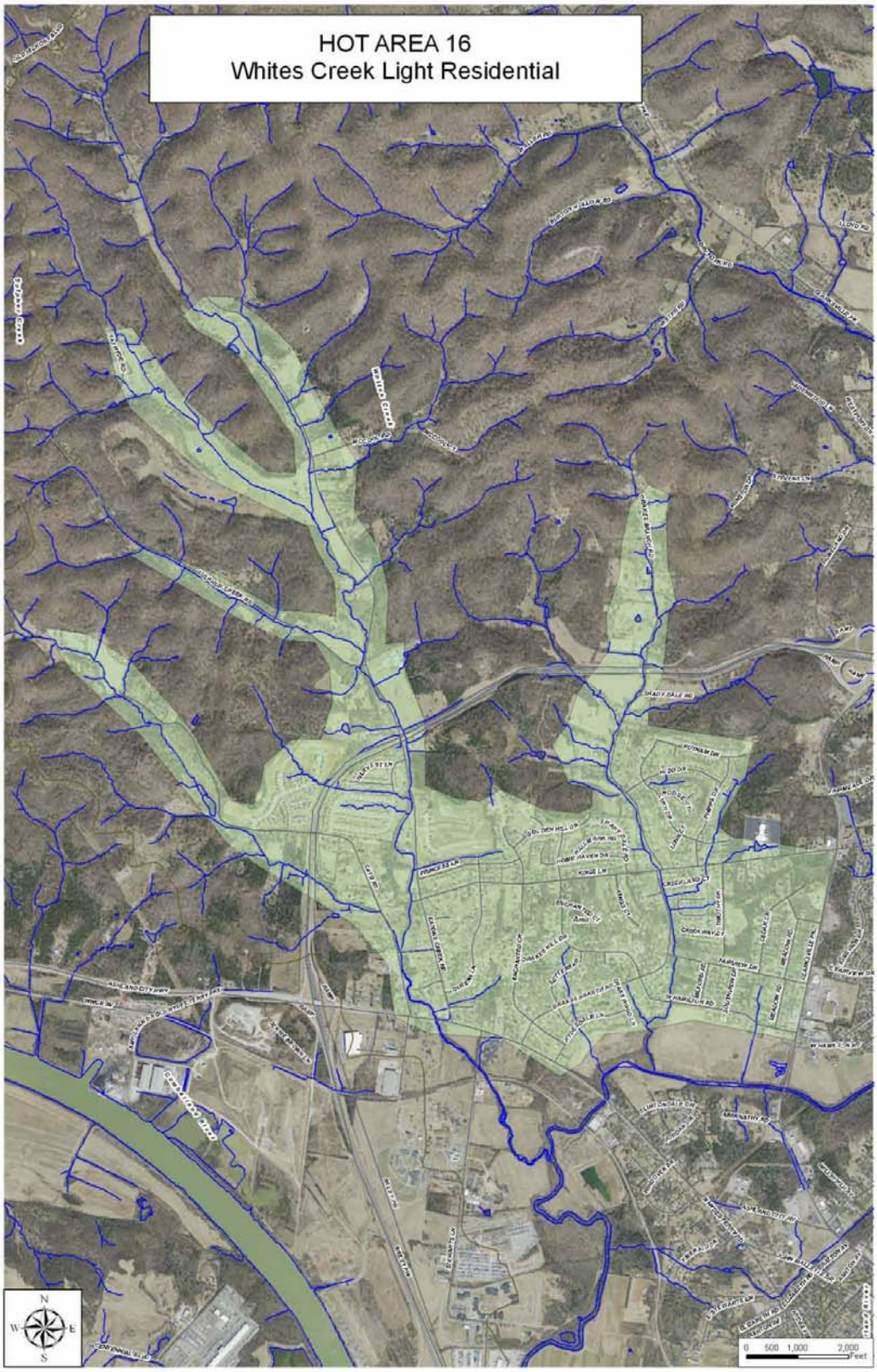

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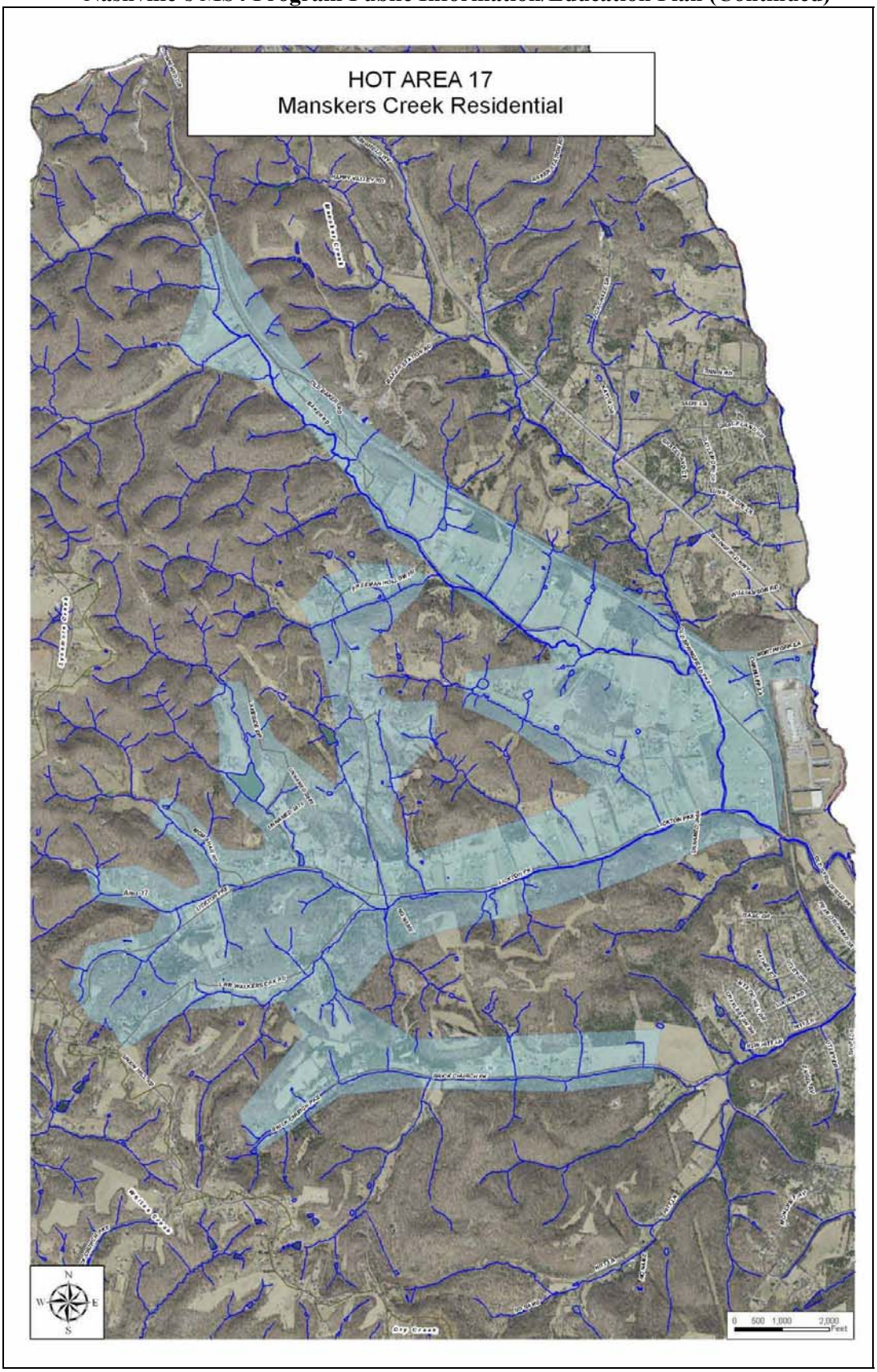
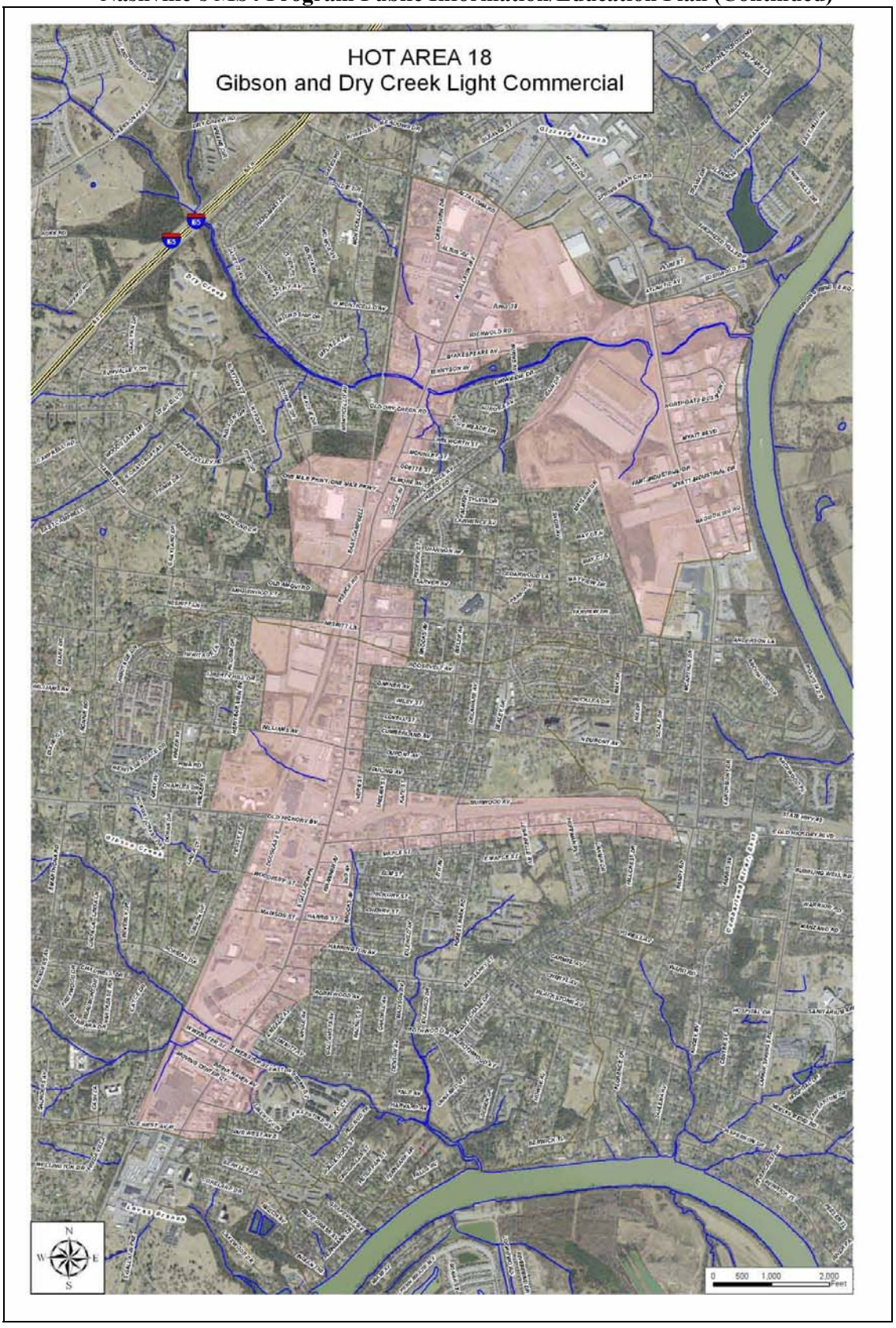


Nashville's MS4 Program Public Information/Education Plan (Continued)



Nashville's MS4 Program Enforcement Response Plan

(Note: This plan is subject to change at any time the program deems necessary)

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

Finalized:
August, 2012

Implemented by the:
MWS, Stormwater NPDES Office
1607 County Hospital Road
Nashville, TN 37218

Nashville's MS4 Program Enforcement Response Plan (Continued)

Introduction:

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

Section 1: Construction Related Violations:

1.1 NPDES Office EPSC Summary:

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

1.2 General:

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

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

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

1.3 Enforcement:

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

While weather (ongoing rain) is understood to impact some types of EPSC maintenance activities (i.e. heavy equipment use), it should not be considered to preclude all/interim smaller scale EPSC maintenance efforts (such as using manpower to improve controls etc.).

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

Nashville's MS4 Program Enforcement Response Plan (Continued)

1.4 Enforcement Tools:

Metro Code 15.64.020 grants the regulatory authority for the establishment of the SWMM. Under Metro Code 15.64.220(A), any violation of Chapter 15.64 regarding Stormwater Management, including a violation of the SWMM, is punishable by a civil penalty not to exceed $500.00 dollars. Each day of violation may constitute a separate violation (such as failure to maintain EPSC, illicit discharge and grading without a permit). In certain instances, where construction site activities lead to a significant discharge of sediment to a stream, the illicit discharge penalty formula in Section 2 of the ERP can be used to calculate penalties up to $5,000.

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

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

The processing of stormwater bonds and grading U&O signoffs will be held until the site is in compliance. Additional grading permits will not be issued for other phases of the project if a portion of the site is in non-compliance.

All NOV/SWO's may be appealed by the person or entity in which it was served to. A hearing must be requested in writing to the issuing Director within ten (10) days of service of the NOV.

If conditions under which a Stormwater Management Committee (SWMC) variance was approved are not met, a SWO may be issued. The SWO shall have a compliance deadline. If compliance is not achieved by the deadline, the matter will be taken to the SWMC for discussion. The committee may rehear the variance with the possibility of revocation.

1.5 Documentation:

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

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

1.6 Enforcement Categories:

Official Warnings (verbal or written): should be issued to EPSC professionals, Owners, Contractors, and Developers verbally, via e-mail, phone, and/or fax and should include the compliance deadline (that should take into consideration the next predicted rain event if the matter relates to possible sediment loss). These can be irrespective of when the last rain event occurred at the site. Official warnings are given for issues not rising to the level of enforcements outlined below. All warnings must stipulate the nature of the violation / potential violation and the required corrective action to include any deadlines. All correspondence should be documented in the appropriate database and any written document saved in the appropriate

Nashville's MS4 Program Enforcement Response Plan (Continued)

network file. It is not mandatory to give official warnings in advance of other categories of enforcements below. It is however suggested that the site be given as much notice as possible of any potential future site issues.

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

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

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

Stop Work Order (SWO) (no penalty): issued to all sites found to be grading without a permit and to sites not adhering to the NOV with penalty deadlines (past due). A SWO may also be issued to a site if the conditions of a SWMC variance are not met.

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

Environmental Court: If an offender refuses to accept a certified NOV/SWO letter or enforcement and/or is generally unresponsive to our requirements and deadlines despite our best efforts, the matter should be taken to Metro Environmental Court.

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

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

Nashville's MS4 Program Enforcement Response Plan (Continued)

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

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

Nashville's MS4 Program Enforcement Response Plan (Continued)

Table 1 – Grading Permit Violation Itemized Penalty Worksheet

Itemized Penalty Worksheet

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

Nashville's MS4 Program Enforcement Response Plan (Continued)

Section 2 : Illicit Discharge Violations:

2.1 NPDES Office Illicit Discharge Summary:

Metro's Non-Stormwater Discharge Code (15.64.205) specifically prohibits all non-stormwater discharges (except those exempted in the code) into community waters, into the waters of the state, or into the municipal separate storm sewer system of the metropolitan government are prohibited and are declared to be unlawful. Additionally, the MS4 permit obligates Metro (per State and Federal statutes) to implement programs, including enforcement, that eliminate such discharges to streams and rivers. This section of the ERP details standard protocol to be followed for enforcement for violations to Metro's Non-Stormwater Discharge Code.

2.2 General:

The NPDES Office discovers illicit discharges to the MS4 system utilizing a variety of methods such as routine inspections, citizen complaints, proactive reconnaissance, etc. Some of the more typical illicit discharges include: wash water, sewage, industrial process discharges and contaminated runoff, paint, sediment, etc. Once discovered, the NPDES Office implements the below enforcement measures in order to gain compliance. The below enforcement steps do not have to be used in sequence, rather the mode of enforcement shall be chosen based on the type of violation.

2.3 Enforcement Proceedings:

Calculation of the monetary penalties associated with illicit discharges can be assessed up to $5,000 per day, per Metro code. For the most part construction site violations are to be calculated using the penalty calculation in Table 1; however, in significant sediment loss situations, the penalty calculation found in Table 2 below can be used. Enforcement can range from simple verbal warnings to environmental court proceedings.

2.4 Enforcement Categories/Steps

Official Warnings (verbal or written): to be issued in the event of minor/negligible discharges to the MS4/community waters especially when the discharge is unintentional (i.e. spill, sewer line break, etc.). In some instances, NPDES staff will observe a non-stormwater discharge on private property in which either no amount or small amounts of the discharge has reached the MS4 or community waters. In this case, the biggest threat to water quality is the potential for contaminated runoff during rain events, which makes it extremely important to issue immediate warnings to the site to expedite compliance. The warning can be either verbal or written and should include specific deadlines and compliance measures to be performed by the responsible party. Some examples of illicit discharge violations subject to official warnings include:

- Pressure washing with small amounts of wash water discharges;
- Private sewer service line break or missing clean-out cap;
- Accidental spills with minor amounts of material reaching the MS4 or community waters;
- Materials exposed to stormwater runoff (messy dumpster pads, fats or grease on ground, open containers of oil, etc.).

Nashville's MS4 Program Enforcement Response Plan (Continued)

Notice of Violation (NOV) (with penalty): to be issued in the event that a more than minor/negligible amount of non-stormwater is discharged to the MS4 or community waters. Every NOV issued will be accompanied with a completed penalty assessment worksheet. All intentional discharges that are more than minor/negligible will result in monetary penalties based on various factors delineated in Table 2. For purposes of this document, "intentional" is defined as an act that was deliberately carried out that led to the discharge of non-stormwater material. A written violation shall clearly state the required remediation for the violation and timeframe for compliance. In most cases, the carbon copy NOV ticket shall be utilized; however, in some cases a formal letter can serve as the NOV. Some examples of illicit discharges that will be subject to a formal NOV include the following:

;

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

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

Environmental Court: If an offender refuses to accept a certified NOV/SWO letter or enforcement and/or is generally unresponsive to our requirements and deadlines despite our best efforts, the matter should be taken to Metro Environmental Court. **Injunction**

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

Nashville's MS4 Program Enforcement Response Plan (Continued)

2.5 Documentation:

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


County Hospital Road, 1607 (paint dumping)

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

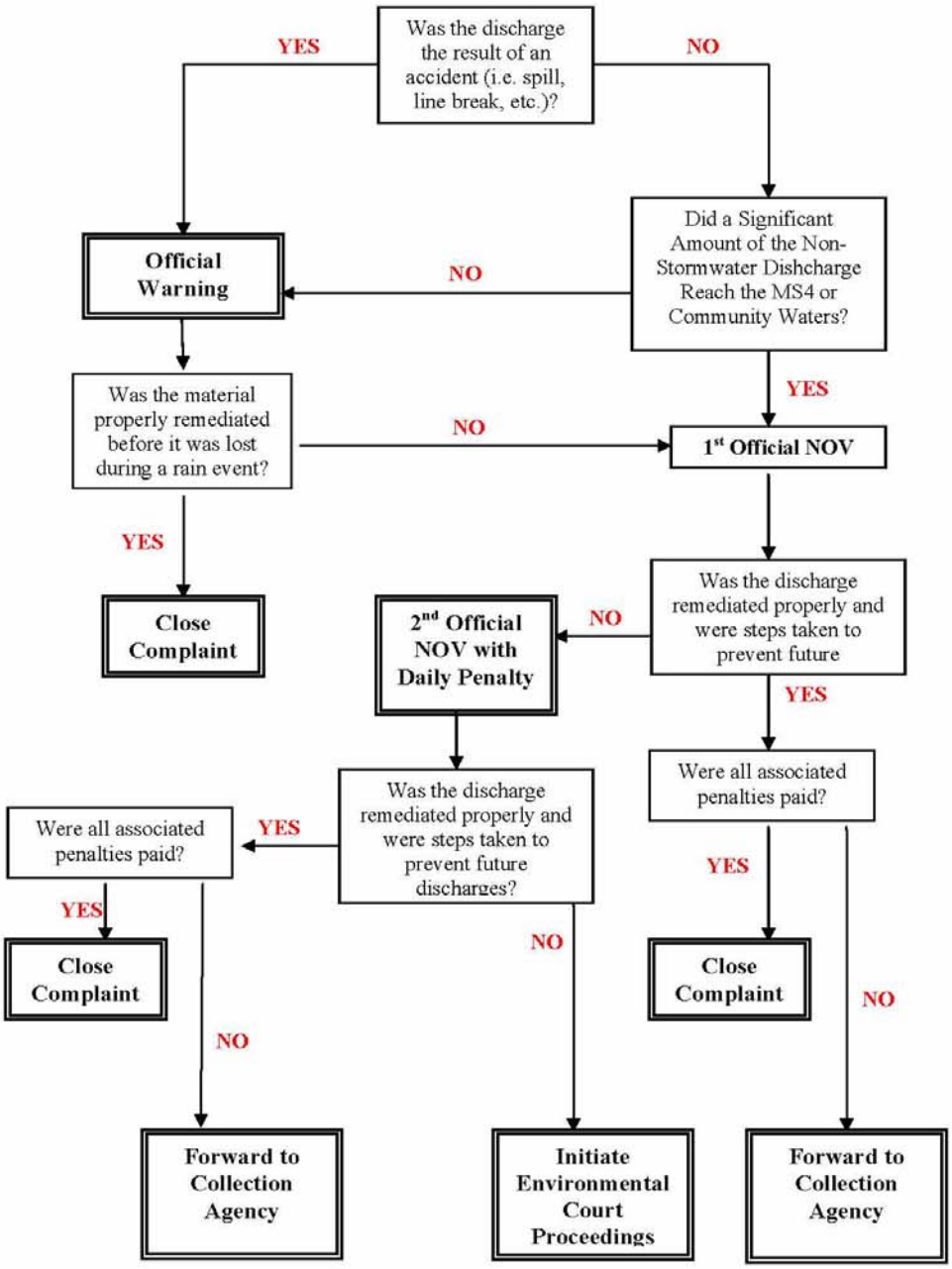
Nashville's MS4 Program Enforcement Response Plan (Continued)

Table 2 – Illicit Discharge Penalty Calculation Worksheet

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

Nashville's MS4 Program Enforcement Response Plan (Continued)

Illicit Discharge Enforcement Flow Chart



Nashville's MS4 Program Enforcement Response Plan (Continued)

Section 3 : NPDES Office Post Construction BMP Maintenance Enforcement Response Plan

NPDES Office Post Construction BMP Maintenance Enforcement Response Plan

General Considerations

Maintenance is required to ensure that post construction stormwater BMPs continue to function as designed. The cleaning and/or repair of a BMP are the ultimate responsibility of the property owner. In some cases, management companies and HOAs perform the work or contract it out.

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

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

Enforcement Categories

Enforcements for post construction BMP maintenance will fall into two general categories:

1. Enforcements for BMPs that were inspected by NPDES staff and a deficiency was noted
2. Enforcements for sites that have not submitted their annual inspection and maintenance reports

BMP Deficiency Enforcement:
Notice of Violation (NOV, no penalty) – issued to sites where a BMP needs repair or cleaning. The NOV will list the deficiency and give a timeline for compliance. If a site cannot meet their compliance deadline for a legitimate reason (e.g. weather, hardship), they may request an extension.

Notice of Violation (NOV, penalty) – issued to sites that are not in compliance with the timeline on their NOV. The penalty will typically be $100 unless continued non-compliance is creating a water quality problem (e.g. sediment discharge) or a public health nuisance (e.g. mosquitoes). In these cases, the penalty can be increased.

Nashville's MS4 Program Enforcement Response Plan (Continued)

If an offender refuses to accept a certified NOV letter or is generally unresponsive to the requirements and deadlines stipulated in their NOV, the following options can be pursued:

- Environmental Court
- Maintenance/repair of the BMP by Metro or a Metro contractor and cost recovery by Metro from the property owner/responsible party.

Failure to Submit Annual Report:

Notice of Violation (NOV, no penalty) – will be issued to sites that do not submit their annual report by July 1st. The NOV will be accompanied by a letter that explains the annual reporting requirement and lists the recording number of the site's Maintenance Document. The deadline for the report submittal is one month, unless an extension is requested for a legitimate reason. Failure to submit the report may result in penalties or environmental court. MWS may inspect the site to determine if the BMP(s) requires maintenance or repair. If deficiencies are noted, another NOV may be issued (see BMP Deficiency Enforcement above). If a site fails to submit their annual report in two different years while under the same ownership and receives a NOV without penalty each year, the third failure will result in an immediate penalty.

Nashville's MS4 Program BMP Inspection/Maintenance Plan as Submitted to TDEC

KARL F. DEAN
MAYOR

METROPOLITAN GOVERNMENT OF NASHVILLE AND DAVIDSON COUNTY

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

July 27, 2012

Mr. Bill Duffel
Tennessee Department of Environment and Conservation
Division of Water Pollution Control
Nashville Environmental Field Office
711 R.S. Gass Blvd.,
Nashville, TN 37216

Subject: NPDES Permit No. TNS068047
Nashville/Davidson County MS4
Nashville, Davidson County, Tennessee

Dear Mr. Duffel:

The Metropolitan Government of Nashville and Davidson County's (Metro's) new Municipal Separate Storm Sewer System (MS4) permit requires the MWS Stormwater NPDES office to submit a plan detailing the activities they will perform to verify post construction stormwater quality best management practices (BMP) maintenance. This plan is included below for your review.

Post Construction BMP Inspection and Maintenance Plan

Metro's plan to ensure inspection and maintenance of post construction stormwater quality BMPs is described below. It will apply to all sites that receive final approval of their stormwater BMP construction after TDEC has approved the plan or 30 days has transpired since the plan's submittal on July 30th, 2012.

BMP Tracking:

New development and significant redevelopment projects require a Metro Grading Permit (GP). The Grading Permit process is tracked and documented in a metro-wide database called KIVA. This database includes owner, developer, designer, and site information. It records the plan review and approval

Nashville's MS4 Program BMP Inspection/Maintenance Plan (Continued)

process, and also serves to track the issuance of Grading Permits and all of the GP-related compliance inspections. KIVA will eventually transition into a new database named Accela that will track the same information.

After the post construction stormwater BMP as-built is approved by staff, its information is recorded in a Metro Water Services (Stormwater Division)-maintained GIS feature class called STOBMP. STOBMP includes the following information about the BMP:

- GIS_X – longitude coordinate value
- GIS_Y – latitude coordinate value
- OUTFALLTO- the FACILITYID of the closest outfall this BMP drains to
- DRAINAREA – the calculated drainage area for this BMP
- TYPE – the type of BMP based on identification from our BMP Manual

Completed projects are also entered into an Access database maintained by NPDES. This database includes fields to track basic information including Grading Permit number, BMP type, Maintenance Document recording number, Permit issuance and completion dates, and occupancy type. There are also fields to track all post construction related inspections, correspondence, and Notices of Violation. This additional database allows for easier querying and tracking of BMP information than is afforded by the KIVA database.

Private Inspection and Maintenance:

BMP Maintenance Document

A Maintenance Document must be submitted with the Grading Permit application and must include the following:

1. Either an Inspection and Maintenance (I&M) Agreement, which includes an easement requirement, or a Declaration of Restrictions and Covenants, whichever is appropriate as determined by Stormwater staff
2. A long-term maintenance plan prepared by the design engineer. The maintenance plan must include a description of the stormwater system and its components, inspection priorities and inspection schedule for each component, and BMP schematics for each BMP, signed by the current owner.
3. A system location map to enable MWS to locate BMPs.

The Maintenance Document must be recorded with the Register of Deeds prior to final Grading Permit approval. This attaches the Maintenance Document to the parcel and will transfer it to subsequent owners. The Recording Number for the Maintenance Document is tracked both in KIVA and the NPDES BMP Database. The Please see Appendix C of Metro's Stormwater Management Manual (http://www.nashville.gov/stormwater/docs/SWMM/2012/Volume1.pdf) for copies of the documents and inspection checklists.

Nashville's MS4 Program BMP Inspection/Maintenance Plan (Continued)

Inspection and Maintenance Responsibilities

The long term maintenance plan within the Maintenance Document contains the inspection priorities and schedule for the stormwater system components and BMPs. The BMP owner is responsible for inspecting the stormwater system, including BMPs, according to the schedule and annually submitting completed inspection reports to MWS to document that inspections have been completed and necessary maintenance has been performed. Failure to file annual inspection reports and perform required BMP maintenance could result in enforcement action as outlined in the Enforcement Response Plan.

Once every five years, an owner/operator is required to have their stormwater BMPs inspected by a professional engineer, a landscape architect, or a qualified professional approved by Metro. This condition will apply to all sites that submit Grading Permit applications after the 2013 revisions to the Stormwater Management Manual (SWMM) become effective. The 2013 revision is needed to add this particular stipulation to our SWMM.

Metro Inspection and Maintenance:

Metro Owned BMPs

BMPs located on properties owned by Metro Departments must be inspected and maintained. These sites will also be tracked in KIVA and in the NPDES BMP Database. The Metro Department responsible for each BMP will submit reports annually to NPDES.

Additionally, Metro will randomly inspect 30 BMP sites per year to verify compliance with maintenance requirements. This number equates to over 25% of the Grading Permit sites that were signed off in the previous year. These sites will be prioritized based on receiving stream's 303(d) status.

We appreciate your consideration of this matter. If you have any questions, please feel free to contact myself or Michael Hunt at (615) 880-2420.

Sincerely,

Rebecca Dohn

Rebecca Dohn

cc: Wade Murphy - TDEC, Division of Water Pollution Control
Vojin Janjic - TDEC, Division of Water Pollution Control
Joey Holland -TDEC, Division of Water Pollution Control-Environmental Field Office
Ann Morbitt - TDEC, Division of Water Pollution Control-Environmental Field Office

Nashville's MS4 Monitoring program Changes Approved by TDEC

TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
NASHVILLE ENVIRONMENTAL FIELD OFFICE
711 R. S. GASS BOULEVARD
NASHVILLE, TENNESSEE 37243
PHONE (615) 687-7000 STATEWIDE 1-888-891-8332 FAX (615) 687-7078

April 19, 2012

Mr. Michael Hunt
Metro Nashville Department of Water and Sewerage Services
Stormwater Division NPDES Office
1607 County Hospital Road
Nashville, TN 37218

Re: NPDES Permit No. TNS068047
Stormwater Management Program Update
Approval of Proposed Monitoring Changes

Dear Mr. Hunt:

On February 23, 2012, I received your letter requesting changes to the sample locations and schedules for Wet Weather and In-Stream Ambient Monitoring required by Metro Nashville's Municipal Separate Storm Sewer System (MS4) Permit TNS068047. After reviewing this information and subsequent discussions with your office, a set of revised tables listing the proposed monitoring changes was submitted on March 29, 2012.

Enclosed with this letter is a copy of the two tables submitted on March 29, 2012, showing the second set of changes in the wet weather sampling locations for each land use type (Table 1) and the schedule for in-stream Ambient monitoring (Table 3) which will replace Table 1 Section 3.3.1 and Table 3 Section 3.3.3.2 in your permit.

Nashville's MS4 Monitoring program Changes Approved by TDEC (Continued)

We appreciate Metro Nashville MS4 Program's attention to this issue and believe the MS4 program does make a contribution toward improving the quality of state waters. If you have any questions, please contact me at 615 687-7106 or email at Bill.Duffel@tn.gov .

Sincerely,

Bill Duffel

Bill Duffel
Division of Water Pollution Control

enclosure

Cc: Mr. Vojin Janjic, WPC, Permit Section
Mr. Wade Murphy, WPC, Permit Section
Mr. Josh Hayes, Metro Water Services Stormwater Division

Nashville's MS4 Monitoring program Changes Approved by TDEC (Continued)

Mr. Michael Hunt
April 19, 2012
Page 3 of 4

Table 1 Wet Weather Monitoring

Type	Location	Coordinates	Waterbody	Frequency
Residential	Downstream of a culverted crossdrain under Drakes Branch Road	-86.8509808 36.21100166	Whites Creek	3 storm events occurring at different seasons during each permit year
Commercial	Behind the Bellemeade Kroger Shopping Plaza	-86.85033132 36.12449873	Richland Creek	3 storm events occurring at different seasons during each permit year
Industrial	Intersection of Cockrill Bend Bvld. and West Belt Drive.	-86.87703781 36.17095549	Richland Creek	3 storm events occurring at different seasons during each permit year
Transportation	On the north side of Ashland City Highway near the address of 4882 Ashland City Highway	-86.9069884 36.21046404	Cumberland River	3 storm events occurring at different seasons during each permit year
Open/Undeveloped	On the west side of Eaton's Creek Road near the address of 5111 Eaton's Creek Road	-86.88221501 36.25191644	Whites Creek	3 storm events occurring at different seasons during each permit year

Nashville's MS4 Monitoring program Changes Approved by TDEC (Continued)

Mr. Michael Hunt
April 19, 2012
Page 4 of 4

Table 3. Watersheds and respective sampling years.

Year	Waterbody	Location	Frequency
1	Browns Creek Richland Creek Davidson	At least one sampling point within the main stem of the Creek.	4 dry weather sampling events per year
2	Whites Creek Mansker's Creek	At least one sampling point within the main stem of each Creek.	4 dry weather sampling events per year
3	Gibson Neeley's Dry Creek	At least one sampling point within the main stem of the Creek.	4 dry weather sampling events per year
4	Pages Branch Cooper Creek Harpeth River	At least one sampling point within the main stem of each river.	4 dry weather sampling events per year
5	Mill Creek Stones River	At least one sampling point within the main stem of each Creek.	4 dry weather sampling events per year

ATTACHMENT A – SUPPLEMENTAL PROGRAM DATA

MWS PIO Public Education Program Activities during FY12

Metro Water Services Programs & Activities

Report Dates: From 7/1/11 to 6/30/12

497 Programs/Activities 10660 Students 634 Adults

ActivityType: Classroom Activity 195 Programs/Activities

TOTAL Teacher Led Activity 195 Programs/Activities 4253 Students 8 Adults

The Journey of Your Water Video 195 Programs/Activities 4253 Students 8 Adults

9/7/2011	Shwab Elem.	3	60	4th grade	
9/8/2011	Amqui Elementary	3	75	4th grade	
9/9/2011	Amqui Elementary	3	75	4th grade	
9/14/2011	Crieve Hall Elementary	1	28	4th grade	
9/15/2011	Crieve Hall Elementary	2	48	4th grade	
9/16/2011	Cumberland Elementary	3	72	4th grade	
9/20/2011	Shayne Elem.	5	115	4th & 3rd grade	
9/21/2011	Binkley, Norman Elementary	4	82	4th grade	
9/21/2011	Shayne Elem.	4	92	3rd & 4th grade	
9/23/2011	Granbery Elementary	5	143	4th grade	
9/26/2011	Hickman Elementary	3	66	4th grade	
9/27/2011	Hickman Elementary	2	44	4th grade	
9/28/2011	Glenn Elementary Enhanced Option	2	33	4th grade	
9/29/2011	Tom Joy Elem.	3	62	4th grade	
9/30/2011	Tom Joy Elem.	2	50	4th grade	
10/3/2011	Ross Elem.	2	41	4th grade	
10/6/2011	Maxwell Elementary School	5	110	4th grade	
10/12/2011	University School of Nashville at WCWWTP field Trip	3	80	7th grade	8
10/25/2011	Goodlettsville Elementary	3	75	4th grade	
10/26/2011	Dodson Elementary	5	96	4th grade	
10/31/2011	Green, Julia Elementary	4	90	4th grade	
11/4/2011	Jones Elem. Paideia Magnet	2	40	4th grade	
11/8/2011	Rosebank Elem.	2	40	4th grade	
11/10/2011	Cockrill Elementary	4	68	5th grade	
11/15/2011	Pennington Elem.	2	40	4th grade	
11/16/2011	David Lipscomb Elementary School	2	50	3rd grade	

Tuesday, October 23, 2012 **Page 1 of 9**

MWS PIO Public Education Program Activities during FY12 (Continued)

11/17/2011	Pennington Elem.	2	40	4th grade
11/18/2011	Rosebank Elem.	2	40	4th grade
11/28/2011	Stanford Elem. Montessori Design Ctr.	3	57	4th grade
12/9/2011	Kirkpatrick Elem. Enhanced Option	3	43	4th grade
12/12/2011	Ruby Major Elem.	3	63	4th grade
12/13/2011	Ruby Major Elem.	2	42	4th grade
12/14/2011	Napier Elem. Enhanced Option	4	50	4th grade
1/20/2012	Haywood Elementary	6	120	4th grade
1/24/2012	Cole Elementary	3	60	4th grade
1/25/2012	Cole Elementary	3	60	4th grade
1/27/2012	Inglewood Elementary	3	73	4th grade
2/6/2012	Gower Elementary	5	110	4th grade
2/8/2012	Sylvan Park Elem. Paideia Design Ctr.	2	40	4h grade
2/10/2012	Sylvan Park Elem. Paideia Design Ctr.	2	40	4th grade
2/17/2012	Eakin Elementary	2	44	4th grade
2/21/2012	Percy Priest Elem.	5	110	4th grade
2/27/2012	Eakin Elementary	3	65	4th grade
2/29/2012	Glendale Elementary	2	52	4th grade
2/29/2012	Joelton Elementary	2	52	4th grade
3/6/2012	Warner Elem. Enhanced Option	3	45	4th grade
3/7/2012	Stratton Elem.	4	96	4th grade
3/8/2012	Stratton Elem.	2	48	4th grade
3/12/2012	Kelley, A.Z. Elementary	4	84	4th grade
3/15/2012	Westmeade Elem.	2	50	4th grade
3/16/2012	Westmeade Elem.	2	50	4th grade
3/19/2012	Robert E. Lillard Elem. @ Kings Lane	4	86	3rd grade
3/20/2012	Bellshire Elementary Design Center	4	100	4th grade
3/20/2012	Chadwell Elementary	1	25	4th grade
3/22/2012	Chadwell Elementary	2	40	4th grade
3/26/2012	Tusculum Elem.	4	100	4th grade
3/27/2012	Joelton Elementary	3	57	3rd grade
3/29/2012	Jackson, Andrew Elementary	4	92	4th grade
4/10/2012	Carter-Lawrence Elementary Magnet	3	69	4th grade

MWS PIO Public Education Program Activities during FY12 (Continued)

4/11/2012	Green, Alex Elementary	3	75	4th grade
4/19/2012	Green, Julia Elementary	5	104	3rd grade
4/25/2012	Donelson Christian Academy	3	46	4th grade
5/10/2012	Harpeth Valley Elementary	6	150	4th grade
ActivityType:	**Classroom Program**		**227**	**Programs/Activities**
TOTAL	**Classroom Program**	**227 Programs/Activities**	**5639 Students**	**4 Adults**
Career Fair		**16 Programs/Activities**	**604 Students**	**Adults**
5/11/2012	Head Middle Magnet Enviroscape Demonstration	16	604	5th - 8th grade
The Journey of Your Water & Enviroscape		**1 Programs/Activities**	**25 Students**	**Adults**
8/4/2011	Special Group West End UMC Church Summer Camp	1	25	2nd - 6th grade
The Water Cycle & Me		**183 Programs/Activities**	**4326 Students**	**Adults**
9/6/2011	Our Savior Lutheran Academy	1	9	4th grade
9/7/2011	Shwab Elem.	3	60	4th grade
9/8/2011	Amqui Elementary	3	75	4th grade
9/9/2011	Amqui Elementary	3	75	4th grade
9/14/2011	Crieve Hall Elementary	1	28	4th grade
9/15/2011	Crieve Hall Elementary 2 classes	1	48	4th grade
9/16/2011	Cumberland Elementary	3	72	4th grade
9/20/2011	Shayne Elem.	5	115	4th & 3rd grade
9/21/2011	Shayne Elem.	4	92	3rd & 4th grade
9/22/2011	Binkley, Norman Elementary	4	82	4th grade
9/23/2011	Granbery Elementary	4	143	4th grade
9/26/2011	Hickman Elementary	3	66	4th grade
9/27/2011	Hickman Elementary	2	44	4th grade
9/28/2011	Glenn Elementary Enhanced Option	2	33	4th grade
9/29/2011	Tom Joy Elem.	3	62	4th grade
9/30/2011	Tom Joy Elem.	2	50	4th grade
10/3/2011	Ross Elem.	2	41	4th grade
10/6/2011	Maxwell Elementary School	5	110	4th grade
10/25/2011	Goodlettsville Elementary	3	75	4th grade
10/26/2011	Dodson Elementary	5	96	4th grade

MWS PIO Public Education Program Activities during FY12 (Continued)

10/31/2011	Green, Julia Elementary	2	90	4th grade
11/4/2011	Jones Elem. Paideia Magnet	2	40	4th grade
11/8/2011	Rosebank Elem.	2	40	4th grade
11/10/2011	Cockrill Elementary	4	68	5th grade
11/14/2011	David Lipscomb Elementary School	3	60	3rd grade
11/15/2011	Pennington Elem.	2	40	4th grade
11/17/2011	Pennington Elem.	2	40	4th grade
11/18/2011	Rosebank Elem.	2	40	4th grade
11/28/2011	Stanford Elem. Montessori Design Ctr.	3	57	4th grade
12/9/2011	Kirkpatrick Elem. Enhanced Option	2	43	4th grade
12/12/2011	Ruby Major Elem.	3	63	4th grade
12/13/2011	Ruby Major Elem.	2	42	4th grade
12/14/2011	Napier Elem. Enhanced Option	4	50	4th grade
1/20/2012	Haywood Elementary	2	120	4th grade
1/23/2012	Akiva School	1	12	5th grade
1/24/2012	Cole Elementary	3	60	4th grade
1/25/2012	Cole Elementary	3	60	4th grade
1/27/2012	Inglewood Elementary	3	73	4th grade
2/6/2012	Gower Elementary	5	110	4th grade
2/8/2012	Sylvan Park Elem. Paideia Design Ctr.	2	40	4th grade
2/10/2012	Sylvan Park Elem. Paideia Design Ctr.	2	40	4th grade
2/17/2012	Eakin Elementary	2	44	4th grade
2/21/2012	Percy Priest Elem.	5	110	4th grade
2/27/2012	Eakin Elementary	3	65	4th grade
2/29/2012	Glendale Elementary	2	52	4th grade
3/5/2012	Joelton Elementary	2	49	4th grade
3/6/2012	Warner Elem. Enhanced Option	3	45	4th grade
3/7/2012	Stratton Elem.	2	96	4th grade
3/8/2012	Stratton Elem.	1	48	4th grade
3/12/2012	Kelley, A.Z. Elementary	4	84	4th grade
3/15/2012	Westmeade Elem.	2	50	4th grade
3/16/2012	Westmeade Elem.	2	50	4th grade
3/19/2012	Robert E. Lillard Elem. @ Kings Lane	4	86	3rd grade

MWS PIO Public Education Program Activities during FY12 (Continued)

3/20/2012	Bellshire Elementary Design Center	4	100	4th grade	
3/20/2012	Chadwell Elementary	1	25	4th grade	
3/22/2012	Chadwell Elementary	2	40	4th grade	
3/26/2012	Tusculum Elem.	4	100	4th grade	
3/27/2012	Joelton Elementary	3	57	3rd grade	
3/29/2012	Jackson, Andrew Elementary	4	92	4th grade	
4/10/2012	Carter-Lawrence Elementary Magnet	3	69	4th grade	
4/11/2012	Green, Alex Elementary	3	75	4th grade	
4/19/2012	Green, Julia Elementary	4	104	3rd grade	
4/20/2012	Glenview Elementary School Earth Day Celebration Activity	4	125	3rd grade	
4/25/2012	Donelson Christian Academy	3	46	4th grade	
5/10/2012	Harpeth Valley Elementary	3	150	4th grade	
Water Fun & Games	**4 Programs/Activities**		**120 Students**		**4 Adults**
7/6/2011	Library: Hadley Park Water use around the world, story and game	1	15	1st - 2nd grade	4
6/14/2012	Library: Green Hills		25	school age	
6/20/2012	Library: Hadley Park	1	20	6-11 years old	
6/25/2012	Library: Old Hickory	1	40	5-10 years old	
6/27/2012	Library: Hadley Park	1	20	kindergarten	
Water Quality & You (Enviroscape)	**23 Programs/Activities**		**564 Students**		**Adults**
7/12/2011	Special Group Girls STEM summer camp	2	44	high school	
9/12/2011	J.T. Moore Middle	5	145	7th & 8th grade	
10/24/2011	Academy at Hickory Hollow	1	8	12th grade	
12/6/2011	Hume Fogg High Magnet	2	45	9th Grade Biology	
12/7/2011	Hume Fogg High Magnet	2	45	9th grade Biology	
12/8/2011	Hume Fogg High Magnet	5	125	9thBiology & APES	
2/9/2012	Hume Fogg High Magnet AP Environmental Science	1	16	11th & 12th Grade	
3/13/2012	Antioch Middle	4	112	7th grade	
6/18/2012	Jr. Master Gardeners Runoff pollution and backflow prevention	1	24	8-11 years old	
ActivityType: Community Outreach Event			**15 Programs/Activities**		
TOTAL Booth	**1 Programs/Activities**		**Students**		**Adults**

MWS PIO Public Education Program Activities during FY12 (Continued)

Booth/Table		**1 Programs/Activities**		**Students**	**Adults**
3/1/2012	Nashville Lawn and Garden Show Rain barrels, backflow prevention	1			
TOTAL Community Outreach Event		1 Programs/Activities		Students	Adults
Water & Booth		**1 Programs/Activities**		**Students**	**Adults**
6/9/2012	Catfish Rodeo Enviroscape & BMPS	1			
TOTAL Provide Water		13 Programs/Activities		Students	Adults
Water Fountain		**7 Programs/Activities**		**Students**	**Adults**
7/30/2011	Brewers Festival	1			
9/8/2011	Live on the Green Concerts	1			
9/15/2011	Live on the Green Concerts	1			
9/22/2011	Live on the Green Concerts	1			
9/24/2011	Wine on the River	1			
9/29/2011	Live on the Green Concerts	1			
10/6/2011	Live on the Green Concerts	1			
Water Wagon		**6 Programs/Activities**		**Students**	**Adults**
7/4/2011	Hot Chicken Festival	1			
7/9/2011	Mayor's 100 Mile Walk Shelby Greenway	1			
9/9/2011	State Fair 10 day event	1			
11/13/2011	Mayors Challenge 5K	1			
12/10/2011	Special Event Winter Warmer in Sevier Park	1			
6/2/2012	Taste of Music City	1			
ActivityType:	**Community Presentation**		**19 Programs/Activities**		
TOTAL Presentation		19 Programs/Activities		15 Students	485 Adults
MWS Information		**1 Programs/Activities**		**Students**	**35 Adults**
8/27/2011	Special Group Glenn Mizell presentation to Brentwood New Neighbors Group	1			35
Rain Barrels		**3 Programs/Activities**		**15 Students**	**15 Adults**
7/11/2011	Library: Green Hills	1			10
7/28/2011	Library: Green Hills	1	15	school age	
6/19/2012	Library: Green Hills Watershed pollution prevention and rain barrels	1			5
Special Presentation		**7 Programs/Activities**		**Students**	**165 Adults**

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MWS PIO Public Education Program Activities during FY12 (Continued)

8/9/2011	MNPS ALL SCHOOLS In Service - School Gardens Panel	2			50
1/19/2012	Special Group Watershed Protection/Pesticides - Middle TN Landscape Short Course	1			20
3/28/2012	Special Group Vanderbilt Green Zbag Luncheon - Watershed Protection	1			50
6/12/2012	Special Group United South & Eastern Tribes, Agriculture and Pesticides Workshop	1			15
6/28/2012	Special Group School Gardens Training, Watering Workshop	2			30
Tennessee Yards & Neighborhoods		**1 Programs/Activities**		**Students**	**5 Adults**
11/5/2011	Community	1			5
Water Treatment & Quality		**6 Programs/Activities**		**Students**	**215 Adults**
7/19/2011	National Business College Environmental Science and other classes	1			60
7/20/2011	National Business College Environmental Science class	1			30
7/22/2011	National Business College Environmental Science Class	1			30
11/3/2011	National Business College	1		College/Adult	45
1/18/2012	National Business College Environmental Science Class	1			25
1/26/2012	National Business College Environmental Science Class	1			25
Water Wise Gardening		**1 Programs/Activities**		**Students**	**50 Adults**
2/23/2012	Master Gardeners Irrigation, backflow prevention	1			50
ActivityType: Tour				**41 Programs/Activities**	
TOTAL Tour		**1 Programs/Activities**		**Students**	**8 Adults**
Special Tour		**1 Programs/Activities**		**Students**	**8 Adults**
6/26/2012	Special Group TDEC Directors	1			8
TOTAL Tour: Biosolids		**4 Programs/Activities**		**100 Students**	**2 Adults**
Biosolids Facility Tour: Students		**4 Programs/Activities**		**100 Students**	**2 Adults**
9/13/2011	Academy at Hickory Hollow	1	17	High School Seniors	2
2/21/2012	Stratford High	1	28	11th & 12th grade	
4/9/2012	Vanderbilt School of Science & Math (High Scho	1	25	9th grade	
4/11/2012	Martin Luther King Magnet	1	30	11th &12th grade	

MWS PIO Public Education Program Activities during FY12 (Continued)

TOTAL Tour: WTP	**13 Programs/Activities**		**255 Students**		**47 Adults**
K.R. Harrington Tour: Adults	**2 Programs/Activities**		**Students**		**20 Adults**
8/18/2011	Special Group McKendree Village Seniors Group	1			15
4/16/2012	University: TSU Environmental Health Class	1			5
K.R. Harrington Tour: Students	**10 Programs/Activities**		**255 Students**		**2 Adults**
10/4/2011	Currey Ingram Academy	1	22	11th/12th Grade	2
11/16/2011	David Lipscomb Elementary School	2	50	3rd grade	
11/29/2011	Montgomery Central Middle School	1	23	8th grade	
11/30/2011	Montgomery Central Middle School	1	22	8th grade	
12/1/2011	Montgomery Central Middle School	1	30	8th grade	
12/2/2011	Montgomery Central Middle School	1	31	8th grade	
2/7/2012	Hume Fogg High Magnet	1	17	11th & 12th Grade	
2/15/2012	Martin Luther King Magnet	1	35	11th & 12th grade	
4/9/2012	Vanderbilt School of Science & Math (High Scho	1	25	9th grade	
Ohohundro Tour: Adults	**1 Programs/Activities**		**Students**		**25 Adults**
5/17/2012	Special Group My City Academy Tour & Presentation (Nave & Berbiglia)	1			25
TOTAL Tour: WWTP	**23 Programs/Activities**		**398 Students**		**80 Adults**
White's Creek Tour: Adults	**6 Programs/Activities**		**15 Students**		**72 Adults**
10/5/2011	University: Vanderbilt	1		College	11
10/11/2011	University: TSU	1			6
11/2/2011	University: Nashville State Community College Environmental Science Class	1		College	15
3/21/2012	University: Nashville State Community College Environmental Science Class	1	15	College	
3/23/2012	Aquinas	1			15
4/2/2012	University: TSU Environmental Health Class	1			25
Whites Creek Tour: Students	**17 Programs/Activities**		**383 Students**		**8 Adults**
8/23/2011	Hillsboro High	1	18	10th grade	
10/12/2011	University School of Nashville	3	80	7th grade	8
11/29/2011	Montgomery Central Middle School	1	21	8th grade	
11/30/2011	Montgomery Central Middle School	1	23	8th grade	
12/1/2011	Montgomery Central Middle School	1	30	8th grade	

MWS PIO Public Education Program Activities during FY12 (Continued)

12/2/2011	Montgomery Central Middle School	1	24	8th grade
2/14/2012	Hume Fogg High Magnet	1	21	11th & 12th grade
2/21/2012	Stratford High	1	28	
2/23/2012	Hume Fogg High Magnet	1	15	11th & 12th APES
3/14/2012	Martin Luther King Magnet APES class	1	35	11th grade
4/9/2012	Vanderbilt School of Science & Math (High Scho	1	25	9th & 10th grade
5/8/2012	Harpeth Hall	2	35	11th & 12th Grade
6/15/2012	Academy at Old Cockrill	1	6	2th grade
6/19/2012	Harpeth Hall STEM summer camp	1	22	14-15 years old

MWS Stormwater NPDES Public Education Events/Presentations during FY12

Date	Forum/Outreach Group	Title/Description of Outreach	Presenter	Estimated Audience Size
6/26/2012	Mayor's Office	The Creation of Nashville's LID Manual	Rebecca Dohn	7
6/9/2012	Catfish Rodeo	Cumberland River Compact Sponsored Catfish Rodeo Educational Booth	Josh Hayes/Mary Bruce	50
5/18/2012	Drillers Workshop	Drillers Workshop at the Flemming Training Center Sponsered by TDEC	Sonya Erickson	70
5/1/2012	School Encore Class Gower Elementary	General Stormwater Education to Gifted Students	Michelle Barbero	13
4/21/2012	Earth Day Festival	Earth Day Awareness Festival	Michelle Barbero/Josh Hayes	250
4/18/2012	Wet Weather Partnership	National Urban Wet Weather Solutions Workshop	Michael Hunt	50
4/12/2012	AWRA	Metro Water Services qPCR Fecal Source Tracking	Megan Stallard	40
4/12/2012	AWRA	The Creation of Nashville's LID Manual	Rebecca Dohn	60
2/15/2012	TDEC Level One Erosion Control Workshop	Grading Permit Process and Erosion Control in Davidson County	Dale Binder	140
2/9/2012	Nashville Environmental Bar Association	Metro LID Manual/MS4 Permit Reissuance	Michael Hunt	9
2/7/2012	MWS Process Owners/Administrators	Annual Sustainability Report	Rebecca Dohn	30
2/2/2012	EPA Tour	Tour of Metro Nashville Stormwater Low Impact Development Projects by Dr. Ellen Gilinsky, Senior Policy Advisor, Office of Water, US Environmental Protection Agency	Michael Hunt	8
1/23/2012	Metro Planning Staff (see cell comment re attendees)	Stormwater 101 - w/focus on reissued MS4 permit requirements relating to Metro Planning	Michael Hunt	10
10/20/2011	TDEC Level One Erosion Control Workshop	Grading Permit Process and Erosion Control in Davidson County	Dale Binder	130
10/12/2011	Stormwater Review Committee	LID Manual	Rebecca Dohn	20
9/7/2011	Metro Decision Committee	LID Manual & Floodplain Policy Presentation	Rebecca Dohn	8
8/18/2011	Various stakeholders - Metro, development community	LID Manual & Floodplain Policy Presentation	AMEC / Rebecca Dohn	30

Metro Department of Public Works Waste Collection During FY12

	July	August	September	October	November	December	January	February	March	April	May	June	Total
Recycling													
Curbside Recycling/Inhouse Recycling/Recycling Dumpsters													
Mixed Recyclables	1,098.10	1,039.33	1,083.43	1,014.65	1,000.99	1,206.23	1,178.85	955.62	1,046.08	1,083.60	973.08	1,122.25	12,802.21
Monthly Totals	**1,098.10**	**1,039.33**	**1,083.43**	**1,014.65**	**1,000.99**	**1,206.23**	**1,178.85**	**955.62**	**1,046.08**	**1,083.60**	**973.08**	**1,122.25**	**12,802.21**
Household Hazardous Waste Facility													
Oil	2.8	3	2.4	3.3	3.54	2.6	1.5	2.7	3.7	4.74	2.9	3.34	36.52
Anti Freeze	0	0	0	0	0	0	0	0	0	0	0	0	-
Electronics	11.57	21.08	16.57	41.12	22.51	14.48	22.75	21.24	25.53	25.32	24.52	25.28	271.97
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	0	0	9.32	0	0	8.33	0	1.07	0	6.59	4.98	30.29
Monthly Totals	**14.37**	**24.08**	**18.97**	**53.74**	**26.05**	**17.08**	**32.58**	**23.94**	**30.3**	**30.06**	**34.01**	**33.6**	**338.78**
Drop Off Recycling Centers & Convenience Centers													
Carpet/Carpet Pad	26.28	20.44	17.52	37.96	26.28	20.44	26.28	27.74	43.80	26.28	37.96	29.20	340.18
Mixed Recyclables	8.70	12.14	10.56	17.39	17.58	9.66	10.97	6.91	9.69	10.57	10.55	15.33	140.05
Aluminum & Tin	-	-	-	-	-	-	-	-	-	-	-	-	-
Glass	175.66	183.11	186.53	167.64	185.01	186.41	211.86	109.25	190.10	177.56	194.40	192.66	2,160.19
Mixed Paper	241.00	241.84	224.03	233.05	235.31	277.72	243.96	188.86	213.00	199.08	235.83	205.56	2,739.24
OCC	151.87	149.82	151.09	137.25	137.07	161.03	165.42	119.91	137.68	139.48	132.45	146.25	1,729.32
Plastic	44.23	47.86	43.04	41.49	40.78	42.55	47.29	37.67	41.62	45.44	43.52	40.77	516.26
Plastic Bottles & Metal Cans	28.66	27.47	27.44	28.01	23.86	26.28	31.10	23.55	30.69	26.52	28.05	29.10	330.73
Scrap Metal	42.65	44.69	29.78	33.38	32.33	29.05	29.46	29.61	63.50	38.12	43.13	43.08	458.78
Tires	0.00	661.31	639.68	1,170.13	584.82	233.70	817.85	251.91	261.65	740.96	469.83	1,114.59	6,946.43
Monthly Totals	**719.05**	**1,388.68**	**1,329.67**	**1,866.30**	**1,283.04**	**986.84**	**1,584.19**	**795.41**	**991.73**	**1,404.01**	**1,195.72**	**1,816.54**	**15,361.18**
Waste Collection													
Total Metro Public Works Trash Co	3,916.40	4,092.35	4,066.85	3,460.72	4,230.69	4,142.02	3,841.01	3,754.57	4,208.53	3,762.59	4,437.43	3,949.06	47,862.22
Total Convenenience Center Trash	1,213.27	1,235.69	1,090.38	1,112.36	937.78	912.92	945.44	6,370.55	7,875.51	7,021.63	8,178.88	7,220.37	44,114.78
Contracted Residential	7,317.62	7,370.78	7,389.83	6,275.67	7,507.87	7,519.86	6,917.48	955.52	1,357.54	1,188.73	1,274.19	1,245.31	56,320.40
Monthly Totals	**12,447.29**	**12,698.82**	**12,547.06**	**10,848.75**	**12,676.34**	**12,574.80**	**11,703.93**	**11,080.64**	**13,441.58**	**11,972.95**	**13,890.50**	**12,414.74**	**148,297.40**
Brush Collection													
Unground -- Grapple Hook	746.18	612.58	10.02	59.39	346.66	411.04	306.17	174.38	228.14	216.69	74.76	165.25	3,351.26
Unground -- Dropped Off	4214.24	4121.55	3885.74	2115.99	1960.87	1108.48	1608.24	1207.1	1484.32	1572.31	2113.1	2027.05	27,418.99
Unground -- Contractor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
Ground -- Dropped Off	45.71	81.31	52.15	42.79	11.33	49.75	162.05	381.02	22.62	209.31	212.95	25.27	1,296.26
Leaves -- Metro	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
Leaves -- Dropped Off	0.91	5.55	2.06	51.83	180.64	191.39	85.07	66.94	47.64	54.27	34.62	7.94	728.86
Monthly Totals	**5,007.04**	**4,820.99**	**3,949.97**	**2,270.00**	**2,499.50**	**1,760.66**	**2,161.53**	**1,829.44**	**1,782.72**	**2,052.58**	**2,435.43**	**2,225.51**	**32,795.37**

Note: Units are reported in Tons.

Metro Department of Public Works Hazardous Spills Responded to During FY12

Date	Origin	Location	Situation	Personnel
07/07/2011	E.Kurgan	446 Tampa Dr	5 GALLONS HYDRAULIC OIL IN ROADWAY	GANN
08/01/2011	EOM	NOLENSVILLE @ HARDING	OIL AND GAS IN THE CREEK	ALLEN/ESCUE/ELLIOTT
08/12/2011	M. ESCUE	16TH AVE N @ JACKSON ST	5 GALLONS OF TAR ON ROADWAY	ALLEN
08/19/2011	ESCUE	3804 HILLSHIRE DR	50 GALLONS OF HYDRAULIC OIL ON ROAD	ESCUE / GANN
08/26/2011	OEM	3RD AV @ MONROE ST	DIESEL SPILL	ALLEN
09/30/2011	EOC	FOSTER @ WHITSETT	200 GALLONSS OF USED MOTOR OIL ON ROADWAY FROM TANKER SPILL	ELLIOTT, GANN, HATCHER, ALLEN
11/14/2011	EOC	3326 BRILEY PK BUILDING S	LEAKING CYLINDER OF ETHALINE CHLORIDE, FD MADE SAFE TO HANDLE	HATCHER
11/16/2011	EOC	LUCUS LN @ TRINITY LN	DIESEL SPILL APROX 500 GALLONS	ALLEN/GANN
12/05/2011	CODY OSBORNE	JAMES ROBERTS0N PKWY	10 GALLONS OF HYDRAULIC OIL LEAKED ON RD AND IN STORM DRAIN	ALLEN
12/12/2011	E KURGAN	MAPLE ST @ 3 ST	APPROX 5 GALLONS HYDRAULIC OIL LEAK	ALLEN
12/30/2011	ERNIE KURGAN	SOUTH 20TH ST @ LONG ST	45 GALLONS OF HYDRAULIC OIL ON RD	GANN
12/30/2011	MIKE RYMAN	CULBERTSON RD NEAR NOLENSVILLE RD	APPROX 5-7 GALLONS OF MOTOR OIL ON RD AND SHOULDER	ESCUE
01/12/2012	OEM	GREEN HILLS VILLAGE @ HILLSBORO PK	TRANSMISSION FLUID ON ROADWAY	HATCHER/ALLEN/GANN
01/24/2012	OEM	4th AVE N @ BROADWAY IN ALLEY	HYDRAULIC OIL SPILL	ALLEN / ESCUE
03/09/2012	E. KURGAN	S. 11TH ST @ WOODLAND ST	40 GALLONS HYDRAULIC OIL IN ALLEY	KURGAN / GANN
03/29/2012	EOC	NOLENSVILLE @ THOMPSON LN	50-60 GALLONS HYDRAULIC OIL ON ROADWAY	ELLIOTT/ESCUE
04/05/2012	OEM	OHB @ LOGISTICS WAY	APROX 50 GALLONS ANTIFREEZE ON ROAD	ALLEN
04/17/2012	E.KURGAN	LEA AV @ 8TH AV S	PAINT ON ROAD	GANN
04/17/2012	E. KURGAN	4040 SCOTTS CREEK TRAIL	REPORTED OIL SPILL IN ROADWAY	ALLEN
04/19/2012	OEM	2520 MURFREESBORO PK	5 GALLONS OIL ON ROAD	GANN
04/30/2012	OEM	BRICK CHURCH PK @ TRINITY LN	COOKING GREASE SPILL APPROX. 50 GALLONS	ALLEN
05/17/2012	KURGAN	347 FAIRLANE DR	HYDRAULIC OIL ON ROAD	GANN
05/24/2012	OEM	BROADWAY @ 10 AV N	APPROX 10 GALLONS OF MOTOR OIL ON ROAD	ESCUE
06/19/2012	OEM	HWY 70 S @ SAWYER BROWN RD	10 GALLONS OF FUEL FROM A LEACKING TANK	ALLEN
06/29/2012	OEM	FAIRMONT @ PARK DR	DIESEL SPILL FROM AUXILARY TANK FROM PICK UP TRUCK	HATCHER/GANN

Metro Department of Public Works Deicing Activities During FY12

	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	0	54,752.00	41,725.00	0	0	0	0	96,477.00

MWS SSD Reported Overflows during FY12

	July	August	September	October	November	December	January	February	March	April	May	June	Total
Wet Weather Overflows - CSO Permitted	20	19	21	4	22	18	26	13	20	10	17	4	194
Wet Weather Overflows - sewer (non pumps)	0	0	3	0	8	9	15	0	2	4	1	0	42
Wet Weather Overflows - Pump Stations	0	0	3	0	13	11	26	0	9	2	5	0	69
Wet Weather Overflows - TOTAL	**20**	**19**	**27**	**4**	**43**	**38**	**67**	**13**	**31**	**16**	**23**	**4**	**305**
Dry Weather Overflows - sewer (non-pumps)	5	12	12	9	11	9	4	9	8	3	4	7	93
Dry Weather Overflows - Pump Stations	0	1	0	1	1	0	0	0	0	1	2	1	7
Dry Weather Overflows - TOTAL	**5**	**13**	**12**	**10**	**12**	**9**	**4**	**9**	**8**	**4**	**6**	**8**	**100**
Overflows that Required Remediation	0	0	0	0	0	0	0	0	0	0	0	0	0
Overflows that Reached Creeks - Sewer	1	5	6	2	13	8	12	4	5	3	3	0	62
Overflows that Reached Creeks - Pump Stations(All)	0	1	3	1	14	11	26	0	9	3	5	0	73
Overflow Response Staff / per sewer event	2	2	2	2	2	2	2	2	2	2	2	2	2
Sewer Vac Trucks / per sewer event	1	1	1	1	1	1	1	1	1	1	1	1	1

Local News Article on Metro's Rain Garden Program

11/2/12 Free Rain Gardens Offered To Help Clean Mill Creek

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Free Rain Gardens Offered To Help Clean Mill Creek

Recommend 31 people recommend this. Sign Up to see what your friends recommend.

Posted: Apr 11, 2012 5:46 PM CDT
Updated: Apr 11, 2012 5:46 PM CDT

NASHVILLE, Tenn.- A local non-profit organization has offered to build free rain gardens for Nashville residents living near Mill Creek.

The Cumberland River Compact is working with Metro on a project to clean storm water before it reaches the creek. The group is using private grant money to offer rain gardens and rain barrels to people who live near the creek.

"We have the funds to jump start the process and after that funding is up then they need to take the initiative and do it themselves," said homeowner Beth Winnett.

Cumberland River Compact is hoping to clean up the creek and improve the habitat for the federally endangered crayfish there. Winnett said the idea is to keep pollutants like metals, pesticides, herbicides and animal waste out of the water that eventually flows into Mill Creek and then eventually the Cumberland River where thousands of people get their drinking water.

Winnett's own rain garden is located just off her driveway.

"So instead of it going straight into the storm drain system it percolates through the rain garden and the plants absorb some of the pollutants and cleaner water will go into the watershed," she explained,

Winnett also received a free rain barrel in the deal. It's hooked up to one of the drain spouts on her house.

To learn more visit the Cumberland River Compact website

Local News More>>

Knoxville Police Involved In Mall Shooting
Updated: Nov 02, 2012 6:25 AM CDT

Knoxville police said a man has been taken to a hospital after an officer-involved shooting in the parking lot of a shopping mall.
more>>

Muzzleloader And Archery Season Opens Saturday
Updated: Nov 02, 2012 6:21 AM CDT
Tennessee's muzzleloader and archery season for deer opens on Saturday.
more>>

State Guard Association Meets In Nashville
Updated: Nov 02, 2012 6:15 AM CDT
Hundreds of citizen-soldiers from across the country are in Nashville for the 28th annual General Conference of the State Guard Association of the United States.
more>>

From the AP


Sandy slams NYC
Sandy's toll, state by...
Sandy wrecks travel plans
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Floodplain Mailing Sent to Property Owners in the Floodplain

FLOOD INFORMATION

FLOOD HAZARD AREAS

The individualized map, presented on the previous page, shows the limits of the 100-year floodplain in your area. The 100-year floodplain is the area that will be flooded on the average of once every 100 years. It has a 1% chance of occurring in any given year. In other words, you have about a 30% chance of experiencing a 100-year flood during the life of a 30-year mortgage. Less severe floods have a greater chance of occurring in any year, but can still create a significant hazard to people and property.

Flood insurance rate maps provide more detailed information on the 100-year floodplain and are available at the Codes Administration Office. For assistance and information, please call 862-6038.

FLOOD WARNING

The National Weather Service will post flash flood warnings or watches when the conditions are present. Know the terms used to describe flooding: Flood Watch = flooding is possible; Flood Warning = flooding is occurring or will occur soon. Keep alert to rising waters in the streams in your area.

NOAA weather radios offer the best method of warning. They can be programmed to sound an alert tone whenever severe weather is approaching your area. This eliminates the need to listen to the radio, and the tones can wake you up if you are sleeping. The cost is minimal and the radios can be purchased at any store selling electronic equipment.

During periods of rain, tune to local television and radio stations, for example:

WKRN – TV channel 2
WSMV – TV channel 4
WTVF – TV channel 5
WZTV – TV channel 17
WSM – Radio station AM 650

FLOOD INSURANCE

Floods cause more damage in the United States than any other natural hazard. Each year, floods cause $4 billion dollars in damage and kill 150 people. Many people do not realize that flood damage is **NOT** covered by standard homeowners insurance policies.

Since 1968, the National Flood Insurance Program (NFIP) has provided federally backed flood insurance to communities participating in the NFIP. Metropolitan Nashville and Davidson County joined the program in 1982; therefore, **insurance is available** for all properties in Davidson County. Flood insurance can be purchased through any licensed property insurance agent or broker. All agents must charge the same rates. Your rates will not change if you file a damage claim; the rates are set on a national basis. The purchase of flood insurance is mandatory as a condition of receiving any federally related financial assistance such as loans through the Federal Housing Administration, the Veterans Administration, or the Small Business Administration for properties in the floodplain.

It has been estimated that only one out of four properties susceptible to flooding is insured. Therefore, a large number of homes and businesses in Davidson County are not protected from the financially devastating effects of a flood. Just because your property has not flooded in the past does not mean that it will not flood in the future.

Don't wait for the next flood to buy insurance protection. Because you are in the 100-year floodplain, we encourage you to obtain flood insurance coverage for both your structure and its contents. There is a thirty (30) day waiting period before National Flood Insurance coverage takes effect. Contact your insurance agent for more information on rates and coverage.

FLOOD SAFETY

The following common sense guidelines can help protect you and your property from the dangers associated with flooding:

- Do not drive through a flooded area. More people drown in their cars than any where else. This happened in 1984 in downtown Nashville. Do not drive around road barriers.

Do not drive through a flooded area.

- Do not walk through flowing water. Currents can be deceptive. Six inches of flowing water can knock you off your feet.
- Stay away from power lines and electrical wires. Electrocution is second to drowning in flood related deaths. Electrical current can travel through water. Report downed power lines to the Nashville Electrical Service at 736-6900.
- If your house is about to be flooded, turn off the power at the fuse box, if you can do so safely.
- Keep children away from the flood waters, ditches, and storm drains. Children have drowned in Davidson County by being swept away by flowing water.
- Monitor the level of floodwaters in the drainage way, especially at night. Be prepared to evacuate. Move your vehicles to high ground before it is too late.
- Do not use electrical appliances that have been wet without first getting them checked by a licensed electrician.
- Be alert to gas leaks. If you smell gas, report it to Nashville Gas at 734-1400. Do not use candles, lanterns, or open flames unless you are certain that the gas has been shut off and your house has been ventilated.
- Do not use gas engines, such as generators, or charcoal fires indoors during power outages. Carbon monoxide exhaust could pose health hazards.
- Clean everything that has been wet. Flood waters will be contaminated with sewage and possibly other chemicals which could pose health hazards.
- Look out for animals, especially snakes. Small animals that may have been flooded out of their homes may seek shelter in yours.
- Look before you step. After a flood, the ground and floors are covered with debris that may include broken glass and nails. Floors and stairs that have been covered with mud can be very slippery.

METRO WATER SERVICES

PROPERTY PROTECTION MEASURES

If your property is susceptible to flooding, there are many flood damage reduction measures that can be used to protect yourself.

- Watertight seals can be applied to brick and block walls to keep out low level flooding.
- Doors and windows can be retrofitted with permanent or manually installed closures.
- Utilities such as heating and air conditioning systems, water heaters, and other major appliances can be elevated to higher floors in the structure or on platforms on lower levels or outside.
- Elevating or relocating the entire structure may also be a feasible option.
- Temporary measures such as moving furniture and other valuables to higher floors or sandbagging exterior openings can also be employed in the event of a flood.

For more information on floodproofing or retrofitting structures visit the reference section of the Main Public Library, located at 615 Church Street, or your local branch library. For assistance and information, please call 862-6038.

FLOODPLAIN DEVELOPMENT PERMIT REQUIREMENTS

All developments in the 100-year floodplain (not just construction of buildings) require local permits.

- A grading permit issued by Metro Water Services is required for all land disturbing activities such as filling or excavating soil, the installation of pipes or digging ditches, and alterations to drainage channels.
- Building permits issued by the Codes Administration are required for all improvements or additions to existing structures as well as for any new structures.

Applications for grading and building permits must be made prior to the start of construction.

Metro's Stormwater Management Regulations require that all residential structures built in the floodplain must be constructed with the lowest finished floor elevation located four feet above the 100-year flood elevation. Commercial structures must be built one foot above the 100-year flood elevation. Additionally, any fill placed in the floodplain must be offset with an equal volume of cut removed from the floodplain.

We encourage you to contact the Stormwater Division of Metro Water Services at 862-4506 to inquire about permit requirements or to report any ongoing activity in the floodplain that may not be permitted. Improper development in the floodplain will make flooding worse and must be controlled.

CUMULATIVE SUBSTANTIAL IMPROVEMENT POLICY

The NFIP requires that if the cost of improvements to a building or the cost to repair damages to a building exceeds 50% of the market value of the building (excluding land value), the building must be brought up to current floodplain management standards, as described in the previous section "Floodplain Development Permit Requirements." Building improvement projects include remodeling, rehabilitation, building additions, and repair and reconstruction projects.

Additionally, the cost of currently planned improvements will be added to the cost of previously made improvements and compared to the existing market value to determine if the improvements exceed 50% of the structure value. For more information on this policy, call 862-4506.

DRAINAGE SYSTEM MAINTENANCE

Natural stream channels are typically large enough to contain only the most frequent flooding events. Larger storms which occur on the average of once every 2 or 5 years will most likely cause the streams to flow out of their banks. For this reason, it is critical that the stream channels be kept clear of trash and debris. Do not dump trash, leaves, branches, Christmas trees, or other yard waste into or adjacent to a stream or drainage ditch. These materials will be washed away during rain events and will most likely be deposited in front of downstream culverts or bridges. Blocked or partially blocked culverts increase the potential for property flooding and may cause water to flow across roadways endangering motorists. Metro has a curbside chipper service for collection of yard waste. Call 880-1000 for the collection schedule in your neighborhood or 862-4600 to report blocked culverts.

Example of landscape waste deposited in front of a driveway culvert.

NATURAL AND BENEFICIAL FUNCTIONS

Floodplains play a valuable role in providing natural and beneficial functions to the Metro area. Floodplains that are relatively undisturbed, or have been restored to a nearly natural state, provide a wide range of benefits to both human and natural systems. These benefits provide aesthetic pleasure as well as function to provide active processes such as filtering nutrients. Several of our floodplain areas are used for recreational purposes such as greenways and parks along the stream (Shelby Bottoms Park, for example). Natural and beneficial functions include:

- Provide flood water storage and conveyance
- Filter nutrients and impurities from runoff
- Provide open space for aesthetic pleasure
- Maintain bio-diversity and the integrity of ecosystem
- Contain historic and archaeological sites that provide opportunities for study
- Provide natural flood and erosion control and reduce flood velocities and peaks
- Create and enhance waterfowl, fish, and other wildlife habitats and provide breeding and feeding grounds.
- Enhance agricultural lands for the harvest of wild and cultivated products

ILLICIT DISCHARGES

Areas that routinely flood or where creeks and streams flow after rain events are very susceptible to the water pollution impacts caused by illegal dumping activities. Trash, Tires, Batteries, Cut Trees/Brush, Yard Clippings/Leaves, Chemicals, Washwater, etc. should **NOT** be dumped into or near storm sewers, catch basins, ditches, or streams. It is a violation of Metro Code §15.64.205 to dump or discharge these materials into either the storm sewer system or streams. Please call the Metro Storm Water Quality Office at (615) 880-2420 to report any such dumping or discharging activities.

Web Posting Public Notice of Stormwater Management Manual Changes

If you're having trouble viewing this email, you may see it online.

Share This:

February 24, 2012

Proposed Stormwater Manual changes posted for public review

A draft revised manual's on our Development Services page, along with a summary of proposed changes. The public comment period ends March 22.

Antioch community meetings coming up

They won't start till April, but the schedule's already posted on the Planning Department page. Planners can also meet individually with your neighborhood, community, or faith organization to discuss updating the Antioch/Priest Lake Community Plan - email us to set up a conversation.

You can also sign up here to receive emailed information and participate in the Plan update process - and please forward this message to anyone else who might want to be included.

Follow us on Twitter: metronashplan
Our Facebook page
Planning Commission agenda information line: 880-1006
Development Services webpage
Development Tracker webpage

Mayor's Executive Order Promoting Green Practices within Nashville

Mayor establishes program to oversee city's trees, green spaces, landscape

Executive Order creates Metro Landscape Coordination Program

NASHVILLE, Tenn. (December 19, 2011) - Mayor Karl Dean today signed an Executive Order today to establish a program to oversee the city's trees, green spaces and landscape. The Metropolitan Landscape Coordination Program grew out of recommendations made by the Mayor's Green Ribbon Committee on Environmental Sustainability, the Open Space Plan, the Nashville Tree Canopy Assessment and the Metro Tree Advisory Committee.

View the Executive Order: Text (/mc/executive/kd_042.htm) or Scanned Copy (/mayor/docs/news/EO42.pdf)

"Green space, trees and landscape play a vital role in making Nashville a healthier, greener and even more beautiful place," Dean said. "Their protection, preservation and enhancement are a wonderful legacy to leave for future generations."

The Green Ribbon Report cited numerous environmental and livability benefits of maintaining trees and planting more of them, including increased property values and energy savings, as well as improvements in air quality, personal health, water quality and wildlife diversity.

The Executive Order also calls for the creation of a horticulturist position in Metro Public Works to coordinate the work of Metro departments that currently play a role in Metro's landscaping activities. Departments with responsibilities for managing and maintaining Metro green spaces, trees and landscapes include Codes Administration, Parks and Recreation, Public Works, General Services, Water Services and Metro Development and Housing Agency (MDHA).

Joining Mayor Dean at the signing of the Executive Order were members of the Metro Tree Advisory Committee, the Nashville Tree Foundation and various Metro departments.

Local News Article on Nashville's Green Accomplishments

TENNESSEAN COM

Nashville lauded for green practices

Nashville is one of 14 cities featured in a report released Wednesday for its efforts to reduce flooding and make waterways cleaner by the nontraditional method of capturing rain where it falls.

It's mostly about greenery: green roofs, rain gardens, parklands and trees.

As it is, millions of gallons of rainwater run off every day, filling streams around the country with sewage and urban pollutants, said Rebecca Hammer, attorney in the Natural Resources Defense Council's water program.

"By making the cityscape literally greener, Nashville is making its rivers cleaner too — and with much greater return than conventional solutions," Hammer said.

She listed a more attractive city, higher property values, energysavings and cleaner air among add-on benefits.

The NRDC report, called Rooftops to Rivers II, says Nashville is one of the leading cities in committing to increase green infrastructure. It cited Metro's master plan to do so, demonstration projects, how-to manuals, dedicated funding and other initiatives.

"Metro must lead by example, and I hope the light this shines on our successes will spur the private sector to also adopt low-impact development, such as green roofs and natural plantings designed to absorb and filter stormwater," Mayor Karl Dean said in an emailed statement.

Behind the report is NRDC's own effort to persuade the U.S. Environmental Protection Agency to adopt green requirements as it updates national standards for controlling runoff pollution.

Metro's Green Infrastructure Master Plan, adopted in 2009, identified green practices for handling the city's stormwater. In line with it, the city has turned Deaderick Street into a more pedestrian-friendly street, with tree planters, medians and pavement that allows water to move through it, the report said.

Volunteers, new stores use good practices

The report also notes that volunteers are

Local News Article on Nashville's Green Accomplishments (Continued)

TENNESSEAN COM

adding rain gardens. A total of 152 have been installed since 2009, with a goal of 300 in six years, said Mekayle Houghton, a program director for the nonprofit Cumberland River Compact.

Gower Elementary and Whites Creek and Hillsboro high schools are among those with the gardens to help absorb water and use as teaching elements.

Metro has produced manuals and webpages on building rain gardens and other related projects.

Also, about 5,500 new trees have been planted on the way to a goal of 10,000.

And pervious concrete, which allows water to trickle through, can be found in walkways or parking lots at several places around town, including newer Metro Park nature centers and a Walmart at Old Hickory Boulevard and Nolensville Pike.

The Publix on Charlotte Avenue and ALDI in East Nashville have sunken tree islands to siphon off rainwater and filter it down into the ground.

Green infrastructure "can actually save developers money," said Gwen Griffith, another Cumberland River Compact program director. Greenery can be less costly than piping, curbs and gutters while allowing more space for a project.

Griffith said she was pleased with the report, right down to its name.

"So many people aren't aware of the connection between rain hitting their roof and the health of the river."

Green will be the norm

Metro Water Services charges residential ratepayers about $3 a month for improvements to its antiquated combined stormwater and sewage system, which overflows during heavy rains. The fee can be as high as $400 a month for non-residential locations.

A credit is offered for installing green, water-grabbing elements, but NRDC recommends putting more and better incentives in place.

Metro Nashville is in the midst of doing just that, according to Chris Bowles, director of the Mayor's Office of Environment and Sustainability.

A Low Impact Development Manual should be complete early next year to be part of Metro's stormwater management rules.

Local News Article on Nashville's Green Accomplishments (Continued)

TENNESSEAN.COM

Incentives are planned for green features that capture the first inch of rain that falls on the property. That first inch can carry the most vehicle oils, pesticides, pet wastes and other pollution off a property to a creek or river.

The carrot could include, for instance, a 75 percent reduction in the stormwater user fee or a waiver of other fees.

No one is quantifying benefits for the city as a whole at this point.

"We are still in the early stages of making green infrastructure a norm," Bowles said, saying the same is true of other cities on the list.

"Until that becomes standard practice, at that point you'll see the widespread impacts on the watershed. It will take a while, but what this report shows is that we're out in front."

Contact Anne Paine at 615-259-8071 or apaine@tennessean.com.

14 'green' cities

These cities' commitment to green infrastructure could lessen flooding and result in cleaner waterways, the Natural Resources Defense Council says. Its "Emerald City" ranking gave them points, with six being the best.

Six points
Philadelphia
Five points
Milwaukee
New York City
Portland, Ore.
Syracuse, N.Y.
Washington, D.C.
Four points
Aurora, Ill.
Toronto
Three points
Nashville
Chicago
Kansas City
Seattle
One point
Detroit area
Pittsburgh

Source: Natural Resources Defense Council

NRDC Article on Nashville's Green Infrastructure Program

NASHVILLE, TENNESSEE

A CASE STUDY OF HOW GREEN INFRASTRUCTURE IS HELPING MANAGE URBAN STORMWATER CHALLENGES

TYPES OF GREEN INFRASTRUCTURE USED: Green roofs, rain barrels/cisterns, permeable pavement, rain gardens, vegetated swales, street trees, planter boxes, downspout disconnection, stream buffer, open space preservation

While Nashville's green infrastructure programs are still getting up and running, the city has shown a commitment to increasing its requirements and incentives for green infrastructure in the near future. Nashville's Green Infrastructure Master Plan analyzed the benefits that widespread green infrastructure implementation could achieve in the city's combined sewer system area; identified potential projects the city can implement; and suggested incentives that Nashville can offer to private properties to install green infrastructure, such as stormwater fee discounts, rebates, installation financing, and awards and recognition programs. The city also developed a fairly robust public engagement initiative consisting of online resources and high-profile demonstration projects, and it has a stormwater user fee based on impervious surface area, with credit available for on-site mitigation. Despite this progress, Nashville faces significant work ahead. It has not established a retention standard (within the next four years, the city's new MS4 permit will make on-site retention mandatory where possible). Nashville has no requirement to use green infrastructure to reduce impervious surfaces, nor has it established incentives for private actions. While the updated version of Nashville's stormwater management manual, currently under development, will establish an alternative compliance path based on stormwater volume reduction, this approach will be voluntary.

BACKGROUND

Nashville, located on the Cumberland River in Tennessee, covers 526 square miles and has a metropolitan area that spans 13 counties. The Metro Nashville area still has 47 percent of its urban tree canopy; in the city center, the figure dips to 13 percent.[1] The city's combined sewer system (CSS) was built in the late 1880s. It carried both stormwater and sewage to the Cumberland River without treatment until the late 1950s, when the city constructed the Central Wastewater Treatment Plant to treat wastewater prior to release. Today Nashville has a CSS servicing 7,878 acres, or 12.3 square miles, in the core of the city. Its land cover is 46.5 percent impervious and contains 19.5 percent of the urban tree canopy.[2] Of the 2,500 miles of streams running through Nashville and Davidson County, 350 miles are on Tennessee's official list of impaired waters.[3]

NRDC Article on Nashville's Green Infrastructure Program (Continued)

© Metropolitan Government of Nashville and Davidson County

Nashville completed one of the first green streets in the Southeast, transforming a major downtown road into a pedestrian-friendly corridor by incorporating sidewalk-level bioretention planters, bioretention curb bump-outs, a landscaped median, porous concrete sidewalks, and planting 102 shade trees.

NASHVILLE'S STORMWATER MANAGEMENT BACKGROUND

In August 2007, the Metropolitan Government of Nashville and Davidson County signed a consent decree with the United States and the state of Tennessee that called for a nine-year plan to reduce the estimated 765.2 million gallons of combined sewer overflow (CSO) discharged to the Cumberland River each year.[4] In response, the Metropolitan Department of Water and Sewerage Services of Nashville and Davidson County (MWS) are currently leading efforts to develop a CSO long-term control plan. In 2008, Metro Nashville established a Stormwater Master Planning District covering the entire CSS area and directed MWS and other Metro Nashville departments to develop a green infrastructure plan for the area; it was completed in 2009 and is explained below.[5] The remainder of Nashville is serviced by separate sewer systems that are regulated through a National Pollutant Discharge Elimination System (NPDES) Phase I MS4 permit.[6] A new MS4 permit for Nashville is expected to be issued in late 2011 or early 2012.

Responsibility for Metro Nashville's stormwater program also belongs to MWS,[7] and in 2006 the agency updated Metro Nashville's Stormwater Management Manual (SWMM). The manual provides the framework for site development, including erosion and sediment control during construction and post-development water quantity and quality requirements. The 2006 SWMM contains guidance for green infrastructure practices including green roofs, bioretention, and use of pervious pavement.[8] MWS is currently in the process of developing a new volume of the SWMM designed to encourage the use of green infrastructure, which will establish an alternative compliance path based on stormwater volume reduction and will provide incentives for the use of bioretention, permeable pavements, trees, green roofs, cisterns, and other green infrastructure practices that reduce stormwater volume. The approach will remain voluntary until required under the city's new MS4 permit.

Under Mayor Karl Dean's guidance, the use of green infrastructure to address stormwater and flooding concerns has taken on increased significance. In 2008 Metro Nashville joined a group of local governments promoting sustainability through peer-to-peer advice on stormwater issues. That same year, the mayor signed a green building permit and green certificate of occupancy ordinance; appointed an environmental sustainability manager; and created both a Green Ribbon Committee and a Green Team Committee, whose members, among other things, provided guidance on the use of green infrastructure to address stormwater runoff and commissioned a downtown Tree Master Plan.

NRDC Article on Nashville's Green Infrastructure Program (Continued)

In 2009, the Green Ribbon Committee released a full report that set forth 16 goals, including the establishment of tree canopy and tree-planting objectives for various property types to achieve; the greatest reduction of stormwater runoff possible; the establishment of a dedicated source of funding for stormwater management; and the removal of all Nashville streams from the state's list of impaired waters by 2020.[9] In May 2010, these efforts were diverted for a time to deal with the aftermath of a catastrophic flood that caused the loss of 11 lives and more than $2 billion of private property damage. As the city recovered from the experience, however, a new approach to open-space planning took shape. Since then, Nashville has moved forward with a plan to buy and remove more than 300 structures in the floodway to restore and preserve the land as open space. The city is also addressing stormwater by increasing the number of incentives and requirements that encourage the use of green infrastructure practices.[10]

NASHVILLE'S GREEN INFRASTRUCTURE MASTER PLAN

Downtown Nashville's 12.3-square-mile CSS was designated a stormwater planning district in 2008 under an ordinance that directed MWS, the Metropolitan Planning Department, the Metropolitan Development and Housing Agency, and the Department of Public Works to create a Green Infrastructure Master Plan; the plan was finalized and approved in the fall of 2009. In addition to identifying various green infrastructure practices in the stormwater planning district, the plan provides a detailed analysis of the impacts that four types of practices have on the volume of stormwater runoff: rainfall harvesting; green roofs; urban trees; and three infiltration practices (bioinfiltration areas, permeable surfaces, and tree planters).

For rainfall harvesting, the plan evaluated the effect that capturing runoff from the 1,300 acres of rooftops in the CSS area would have on stormwater runoff. On average, rooftops in Nashville were estimated to generate 65.5 gallons per day per 1,000 square feet, for a total of 1.36 billion gallons of runoff per year. If all of the 708 buildings suitable for green roofs were converted, 112 million gallons of runoff could be removed from the annual total. Similarly, the plan evaluated the impact of additional tree plantings within the CSS area and found 51,800 acceptable new planting sites; these would add 811 acres of urban trees and increase the canopy coverage from 19.5 percent to 30 percent. By doing so, Metro Nashville could expect to reduce stormwater volume by 660 million gallons annually. Similar evaluations were prepared for other green infrastructure practices. In addition, the plan identified 50 potential green infrastructure projects that MWS could implement and provided brief overviews of six. Under the ordinance, the list of green infrastructure projects must be updated annually, and MWS was authorized to promulgate and enforce rules and regulations for the implementation of green infrastructure techniques.[11]

NASHVILLE'S OPEN-SPACE PLAN: *NASHVILLE: NATURALLY*

In April 2011, Nashville released its first open-space plan, which aims to protect 22,000 acres over the next 25 years, including 10,000 acres of floodplain. The plan "Nashville: Naturally," builds upon the lessons learned from the flood of 2010 by focusing protection efforts on land in each of the nine bends of the Cumberland River. The network of open spaces is intended to provide buffers against floodwaters, improve water quality, protect agricultural soils, and offer recreational opportunities. Other goals include the restoration of the endangered Nashville crayfish population and the removal of all area streams from the impaired waters list. The plan further aims to double the 85-acre downtown tree canopy within 10 years and to transition 110 acres, or 20 percent, of the suitable impervious surfaces downtown to pervious or natural plantings.

To help Nashville reach these goals, the plan makes numerous policy recommendations to connect wildlife and water networks, support urban and rural farming, connect people to green infrastructure, and preserve historic and iconic resources. From a stormwater perspective, some of the more important recommendations are to:

- integrate Metro department activities related to forest and water resource protection
- create incentives that encourage green infrastructure stormwater management on private properties;
- establish a stronger stream buffer to protect and restore a riparian buffer system;
- institute a no-adverse-impact policy that restricts development in flood-prone areas and requires development that alters flooding conditions to mitigate the impact of such actions; and
- explore sustainable open space funding and incentive programs that could be offset by the creation of green spaces such as green roofs in dense urban areas.[12]

NRDC Article on Nashville's Green Infrastructure Program (Continued)

The Metro Council and Mayor Dean have already set aside $5 million from Metro Nashville's capital spending budget to begin an acquisition fund; they expect to build the fund with private contributions. Additionally, they've taken the first step toward meeting the 22,000-acre green space goal by agreeing to purchase a 135-acre former private airport for $1.2 million. Doing so will serve to connect two adjacent parks, create a 936-acre swath of open space, and provide an additional buffer to surrounding neighborhoods to protect them from future flood events. To raise funds, Metro is partnering with the Land Trust for Tennessee and the Friends of Shelby Park.[13]

OTHER GREEN INFRASTRUCTURE INITIATIVES

Metro Nashville and MWS have implemented several other projects to better engage and inform the general public on the purpose and utility of green infrastructure practices. To encourage rain gardens, MWS has partnered with the Nashville District of the Army Corps of Engineers and the Cumberland River Compact, a nonprofit organization that engages businesses, individuals, community organizations, and government in the restoration and protection of the Cumberland River, to create a resource guide.[14] In the spring of 2011, the Cumberland River Compact, MWS, and Impact Nashville built 50 rain gardens on residential properties with the help of volunteers. The rain gardens were offered free to homeowners (or renters with owner permission) and were concentrated within the watershed of Brown's Creek, one of Nashville's most polluted small streams.[15] Plans are in place for Nashville Metro to partner with the Cumberland River Compact, the Nashville Tree Foundation, the Nashville Earth Day Festival, and Sound Forest to plant shade trees with the greatest benefits for stormwater mitigation on selected residential properties and in community spaces around Davidson County. While individual websites exist for each program, Nashville has developed a unique site, Impact Nashville (impactnashville.net), aimed at engaging residents in various citywide initiatives.

In 2009, Nashville completed a $4.5 million pilot "green street" project along Deaderick Street, converting a major downtown road into a pedestrian-friendly corridor by incorporating sidewalk-level bioretention planters, bioretention curb bump-outs, a landscaped median, and porous concrete sidewalks, and by planting 102 shade trees. It is also one of the first green streets constructed in the Southeast.[16]

FINANCE STRATEGY

In 2008, MWS prepared a stormwater business plan that found the stormwater program's annual budget of $12 million was below projected needs; an additional $85 million was necessary just to resolve the backlog of projects, and to fully operate the stormwater program an annual operating budget of $25.8 million was required. To fill the gap, the business plan recommended that a dedicated user fee for stormwater drainage be developed, with the rate structure based on a property's total impervious surface area. For customers with existing MWS water accounts, the fee would be billed monthly on the MWS utility bill. For customers without water accounts, a quarterly "stormwater only" bill would be issued.[17] In 2009, a stormwater user fee came into effect for Metro Nashville. Currently, monthly rates for residents range from $0 to $4.50, with an average residential bill of $3.00.[18] Nonresidential property rates range from $0 to $400, depending on the amount of impervious surface.[19] Property owners can receive a credit for mitigating stormwater runoff impacts through education or the implementation of source controls for water quantity or quality (up to 20 percent for each practice, capped at 50 percent).[20] However, the monthly stormwater fee does not appear to be significant enough to make much difference in customer behavior. In other words, the cost savings resulting from stormwater improvements seem unlikely to offset the cost of installing them.

In addition to the stormwater fee, Metro Nashville draws from its general fund, internal service fund, federal funds, and private funding to implement stormwater, open space, green building, and tree planting programs. And to encourage green buildings, the Metro Codes Department established a fast-track permitting process in 2009. To receive the green stamp of approval, units must be third-party certified.[21] However, no additional incentives other than fast-track permitting are offered at this time, nor has Metro Nashville included any stormwater management requirements that encourage the use of green infrastructure practices in their green building permitting process, such as requiring green roofs or the use of volume-based controls on-site.

Like many of the original case studies in 2006, Nashville's green infrastructure programs are still developing tools and incentives used to encourage green infrastructure practices are expected to increase over the years. The Green Infrastructure Master Plan, which provides a summary of various incentive practices that other cities use to encourage green infrastructure, provides some hints as to incentives Metro Nashville might implement to encourage participation. From these incentives, five were selected for further

NRDC Article on Nashville's Green Infrastructure Program (Continued)

consideration for Metro Nashville: stormwater fee discounts, rebates and installation financing, development incentives, grants, and awards and recognition programs.[22] In addition, Metro Nashville is working to identify incentives that will be incorporated in the upcoming stormwater management low-impact development manual.[23]

*EMERALD CITY RATING SYSTEM

Each of the cities profiled in *Rooftops to Rivers II* is a leader in green infrastructure investment—rethinking the design of municipal services and infrastructure. These cities leverage funding in creative ways. They provide tools to residential and commercial land owners to retrofit private properties and realize the multiple benefits provided by green infrastructure. In short, they are changing how cities look and function.

NRDC's Emerald City Rating System identifies six actions cities should undertake to maximize their green infrastructure investment. Our metric does not directly compare one city to another, due to geographical, population, budgetary and other differences. Instead, it identifies the presence or absence of common factors of success that NRDC believes are essential elements of a robust green infrastructure commitment. Only one city profiled, Philadelphia, is undertaking each of the actions identified, although each city is undertaking at least one.

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MWS Stormwater Division's Newly Upgraded LID Resources Web Page

Low Impact Development (LID) Resources

Nashville's Virtual LID Tour
An interactive map of local LID sites If you do not have JavaScript, use this link:
maps.nashville.gov/LID_Sites

Rain Barrels

Purchase your own rain barrel to collect water from your roof. Delivery and installation services are available.

- What is a rain barrel and how to purchase a Systern barrel through Metro
- Rain barrels can be purchased locally from the Cumberland River Compact. **More Information**.
- How To Make Your Own Rain Barrel - A simple and inexpensive way to catch and store rainwater that can later be used to water your lawns and gardens during dry periods.

LID Resource Links

- Nashville's LID Manual
- Green Infrastructure Master Plan - This study assesses the potential impact of green infrastructure in the combined sewer area, including the identification of possible sites and pilot projects
- Nashville's Virtual LID Tour - An interactive map of local LID sites
  If you do not have JavaScript, use this link: maps.nashville.gov/LID_Sites
- Building Green: A Success Storm in Philadelphia

MWS Stormwater Division's Newly Upgraded LID Resources Web Page (Continued)

- Green Infrastructure Design - Using Low Impact Development
- Development Services Green Building Page
  - includes information on green building standards, Metro's green initiatives, and Codes' new green building permits.
- Using Rainwater to Grow Livable Communities
  - Sustainable Stormwater Best Management Practices (BMPs)
  - This site provides LID implementation information and case studies from around the country
- US EPA Low Impact Development Resources:
  - Green Infrastructure
  - Low Impact Development
  - Reduce Runoff: Slow It Down, Spread It Out, Soak It In
  - Managing Wet Weather with Green Infrastructure
  - GreenScapes Program
  - Green Scene: GreenScaping Tips for Fall - EPA GreenScapes Program Manager, Jean Schwab, discusses environmentally-friendly lawn and garden tips for fall at EPA's GreenScapes exhibit at the National Botanic Garden.
  - Handbook: Managing Wet Weather with Green Infrastructure
  - Water Efficient Landscaping
- National Low Impact Development Clearinghouse
  - This site provides a wealth of information regarding low impact development and is sponsored by a Cooperative Assistance Agreement under the US EPA Office of Water 104b (3) Program. Also features user forums.
- Low Impact Development Center
  - This group conducts research and training on LID. Site resources include publications and pictures
- Natural Infrastructure For Nashville and Davidson County
  - A PowerPoint presentation discussing why natural infrastructure, such as rain gardens, is a viable option in managing stormwater runoff.
- Rain Gardens
  - A do-it-yourself guide for Middle Tennessee homeowners

Demonstration sites in Nashville and Tennessee

- McCabe Green Roof: Video tour of the new green roof at the McCabe Community Center and a great summary of all its benefits.
- Richard H. Fulton Complex Low Impact Development Parking Lot
  - Features: Bioretention and permeable asphalt with underdrain system.
- Ellington Agricultural Center
  - Features: Bioretention, porous paving, stream bank re-shaping, forest restoration, stream buffer restoration, wetland enhancement, invasive/exotic plant removal, native grasses, and native meadows.
- Building Outside the Box, Nashville and Middle Tennessee
  - Features: Porous paving, infiltration trench, and rain garden.
- Hill Center Belle Meade
  - Features: Bioretention, a cistern, and increased greenspace.
- Public Square
  - Features: Green roof and rainwater harvesting.
- Pinnacle
  - Features: Green roof and rainwater harvesting.

MWS Stormwater Division's Newly Upgraded LID Resources Web Page (Continued)

- Tennessee Association of Realtors
  - Features: Rain gardens and porous paving
- The Natural Side of Henry Horton State Park
  - Features: Native grass and meadow restoration (replaced high runoff and high maintenance lawns)

Examples of Rain Gardens and Bioretention Uses Around The Country

- Rain Gardens for Nashville - Making a Difference One Garden at a Time! - Download an instructional manual, research different plants, or register your rain garden.
- Rain Garden Design Templates Provides detailed design templates for a range of rain gardens
- Stormwater Guideline for Green, Dense Redevelopment Guideline for bioretention, water harvesting, and reductions in impervious surfaces by the City of Emeryville, CA
- The BAE Stormwater Engineering Group Southern Examples from NC State
- Burnsville Rain Gardens Case Study: Retrofitting for Water Quality & Costs
- Prairie Stone Corporate Site Example near Chicago
- Natural Drainage Systems Overview Best Public Works example from Seattle
- Bioretention Design Examples Good Technical Guidelines from Pugent Sound
- Maryland Bioretention Manual Good Technical Guideline
- Barr Rain Gardens An urban transformation—Rainwater gardens unify a neighborhood
- USGS Conventional vs. LID Comparison Study in Wisconsin
- USGS Effects of Rain Gardens on Water Quality in Minneapolis

Special thanks to Dodd Galbreath of TN Department of Agriculture (Ellington Agricultural Center) for all of his helpful suggestions and information for this page.

Advertisement for Public Notice of this Annual Report

STORMWATER MANAGEMENT COMMITTEE MEETING NOTICE

Meeting Date: 06-DEC-2012

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 01-NOV-2012 Meeting Minutes

III. Approval of 01-NOV-2012 Decision Letters

IV. Other Items of Business
1. MWS – Staff Presentation: 2012 Annual Report – NPDES MS4 Permit

V. Case to be Heard

201200019 2828 SUGARTREE ROAD (SINGLE FAMILY RESIDENCE)
Floodway Buffer Disturbance
Continuous Mowing and Maintenance of Buffer Area

VI. Adjournment

Next Meeting – 03-JAN-2013

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
Ms. Ana Escobar – Metropolitan Clerk