Tennessee Department of Environment and Conservation
Division of Water Resources
William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Avenue, 11th Floor, Nashville, Tennessee 37243
1-888-891-8332 (TDEC)

Municipal Separate Storm Sewer System (MS4) Annual Report

1. MS4 INFORMATION

City of Murfreesboro and Middle Tennessee State University — TNS075469
Name of MS4 — MS4 Permit Number

Robert Haley, III (City) — roberthaley@murfreesborotn.gov
Shelia Knight (MTSU) — Shelia.Knight@mtsu.edu
Name of Contact Person — Email Address

615-848-3200 (City) 615-494-8708 (MTSU)
Telephone (including area code)

Water and Sewer Dept., 220 NW Broad Street — MTSU Box 32, Murfreesboro, TN 37132
Mailing Address

Murfreesboro — TN — 37130
City — State — ZIP code

What is the current population of your MS4? 109,013 (latest certified figure, 2012)

What is the reporting period for this annual report? From July 1, 2012 to June 30, 2013

2. WATER QUALITY PRIORITIES (SECTION 3.1)

A. Does your MS4 discharge into waters listed as impaired on TN's most current 303(d) list and/or according to the on-line GIS mapping tool? ☒ Yes ☐ No

B. If yes, please attach a list all impaired waters within your jurisdictional area. *See Attachment 1.*

C. Does your MS4's jurisdictional area contain any waterbodies where a TMDL has been approved for parameters other than pathogens, siltation and habitat alterations? If yes, please attach a list. *See Attachment 1.*

D. Does your MS4 discharge to any Exceptional TN Waters (ETWs) or Outstanding National Resource Waters (ONRWs)? If yes, please attach a list. *See Attachment 2.* ☒ Yes ☐ No

E. Are you implementing additional specific provisions to ensure the continued integrity of ETWs or ONRWS located within your jurisdiction? ☐ Yes ☒ No

3. PROTECTION OF STATE OR FEDERALLY LISTED SPECIES (SECTION 3.2.1 General Permit for Phase II MS4s)

A. Are there any state or federally listed species within the MS4's jurisdiction? ☒ Yes ☐ No

B. Are any of the MS4 discharges or discharge-related activities likely to jeopardize any state or federally listed species? ☐ Yes ☒ No

C. Please attach any authorizations or determinations by U.S. Fish & Wildlife Service on the effect of the MS4 discharges on state or federally listed species.

4. PUBLIC EDUCATION AND PUBLIC PARTICIPATION (SECTION 4.2.1 AND 4.2.2)

A. Have you developed a Public Information and Education plan (PIE)? ☒ Yes ☐ No

B. Is your public education program targeting specific pollutants and sources of those pollutants, such as Hot Spots? ☒ Yes ☐ No

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

The City specifically targeted the pollutants nutrients, sediment, and trash; absence of streamside vegetation; and the pollutant problem of illicit discharges. Through annual tree-day event, trees were distributed to a number of landowners in the East Fork Stones River watershed. Along an unnamed tributary to Bushman Creek (Garrison Creek) (impaired), MS4 staff and volunteers planted and maintained trees and removed trash & algae from the stream. We mailed letters informing about 116 residents and business owners of their responsibilities under the City's streamside buffer ordinance (WQPA) and to an additional 134 riparian property owners about improving streamside vegetation; included was information on reducing use of fertilizers. Business managers in two impaired watersheds were contacted personally about the illicit discharge prohibition and remedies: in the county square area downtown, where illicit disposal of wash water has been reported; and in the Garrison Creek watershed. Riparian tree plantings were done at the Stones River National Battlefield. We also contacted the UT Ag Extension Office to work with them to provide nutrient education to lawn service professionals.

During FY 2012-2013, MTSU targeted several pollutants such as Illicit Discharges, Hydrocarbon Pollutants, Trash, Bacteria & Riparian. Employees were targeted with online training & individual training on an as needed basis. Events such as campus & detention pond cleanups were coordinated to help remove trash from ending up in the streams. Students also volunteered for riparian tree plantings throughout the city & learned about steamside buffers & their benefits. Bacteria from an agricultural site was targeted with the construction of a rain garden.

For additional events and information, see attached table showing Targeted Education of MTSU & the City of Murfreesboro.

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

- 2,950 trees planted (Garrison Creek, MTSU) & 200 seed packets distributed to property owners on Tree Day in April.
- 665 lbs of trash & 600 lbs of algae removed from local streams
- Placement of silt fence and other epsc controls on construction projects
- Installation of post-construction runoff controls in new development, including green infrastructure such as bioretention, swales and pervious concrete/paver blocks
- 5,477 persons educated through City-MTSU projects & events
- Project WET/Discovery Center contact with 4044 children, 1323 adults, and Project WET training 43 teachers.
- 757 participants signed up for volunteer list

Selected other activities, publications, etc.

- 134 letters mailed to riparian property owners
- 116 letters mailed to properties with regulated riparian buffer (WQPA)
- 45 Letters mailed to Garrison Creek property owners
- 831 Letters mailed to Garrison Creek residents
- 760 Brochures and/or print media distributed
- Creation of 2 print media pieces for Rain Barrels & Old Fort Park Water Quality Features
- 601 Stormwater Promotional Items given out at events
- 92 MTSU WMOT Radio PSAs & 525 Murfreesboro Channel 3 TV PSAs played
- 330 MTSU Student Volunteers

E. Do you have an advisory committee or other body comprised of the public and other stakeholders that provides regular input on your stormwater program? ☒ Yes ☐ No

F. How do you facilitate, advertise, and publicize public involvement and participation opportunities?

MTSU advertises on their website (www.mtsu.edu/stormwater), the MTSU Master Calendar (available on www.mtsu.edu), emails to MTSU Subscriber list (sent to all staff, faculty & temp employees), emails to all Volunteers in stormwater database (over 900+ signed up at prior events), emails & promotion through MTSU News & Media, posting of flyers across campus.

City of Murfreesboro maintains a set of stormwater web pages, with the lead page showing most recently added materials and announcements. On that page is a list of calendar events, linked also to the City's main web calendar. Announcements of public meetings (such as monthly Water and Sewer Board meetings, City Council meetings at which certain stormwater issues are presented, discussed and decided) are published in local newspaper and scrolled on the City TV station (available through local cable TV). Depending on nature of opportunities, press releases are used to advertise and tell the story of the water quality programs; and similarly the City's Facebook page is used to post announcements. When the City is drafting new stormwater ordinances, public hearings are scheduled and stakeholders are notified of the hearings.

G. Do you have a webpage dedicated to your stormwater program? ☒ Yes ☐ No

If so, what is the link/URL: MTSU - www.mtsu.edu/stormwater

City of Murfreesboro - http://www.murfreesborotn.gov/index.aspx?NID=288

H. Are you tracking and maintaining records of public education, outreach, involvement and participation activities? Attach a summary of these activities. *See Attachment 3,* General Education of MTSU & the City of Murfreesboro. ☒ Yes ☐ No

5. Illicit Discharge Detection and Elimination (Section 4.2.3)

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

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

C. How many outfalls have you identified in your system? City: 660 MTSU: 11

D. Have any of these outfalls been screened for dry weather discharges? ☒Yes ☐ No

F. What is your frequency for screening outfalls for illicit discharges? City: yearly MTSU: yearly

City screens yearly, a portion of total number of outfalls. FY 2012-13: 36 outfalls screened.

G. Do you have an ordinance that effectively prohibits illicit discharges? (not an ordinance but a policy for MTSU campus) ☒ Yes ☐ No

H. During this reporting period, how many illicit discharges/illegal connections have you discovered (or been reported to you)? 3 : Two involved equipment washing, one concrete truck washout. Seven potential illicit discharges were investigated.

I. Of those illicit discharges/illegal connections that have been discovered or reported, how many have been eliminated? 2

6. Construction Site Stormwater Runoff (Section 4.2.4)

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

Erosion and sediment control requirements? ☒ Yes ☐ No

Other construction waste control requirements? ☒ Yes ☐ No

Requirement to submit construction plans for review? ☒ Yes ☐ No

MS4 enforcement authority? ☒ Yes ☐ No

B. How many active construction sites disturbing at least one acre were there in your jurisdiction this reporting period? 177

C. How many of these active sites did you inspect this reporting period? 177

D. On average, how many times each, or with what frequency, were these sites inspected (e.g., weekly, monthly, etc.)? 1/month

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

If Yes, based on what criteria? a) subdivision developments; b) response to complaint; and c) the City's capital improvement projects

7. PERMANENT STORMWATER CONTROLS (SECTION 4.2.5)

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

Site plan reviews of all new and re-development projects?	☒ Yes	☐ No
Maintenance of stormwater management controls?	☒ Yes	☐ No
Retrofitting of existing BMPs with green infrastructure BMPs?	☐ Yes	☒ No

B What is the threshold for new/redevelopment stormwater plan review? (e.g., all projects, projects disturbing greater than one acre, etc.) All new and re- development projects are reviewed with respect to stormwater management. Certain of those are subject to our permanent stormwater control standards, those being projects on lots of one acre or more (or part of a common plan of development of one acre or more) and that add a net of 10,000 square feet of impervious surface.

C. Have you implemented and enforced performance standards for permanent stormwater controls? See http://www.murfreesborotn.gov/DocumentCenter/View/416. ☒ Yes ☐ No

D. Do these performance standards go beyond the requirements found in Section 4.2.5.2 and require that pre-development hydrology be met for:

Flow volumes	☐ Yes	☒ No
Peak discharge rates	☒ Yes	☐ No
Discharge frequency	☐ Yes	☒ No
Flow duration	☐ Yes	☒ No

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

http://www.murfreesborotn.gov/index.aspx?nid=498

F. How many development and redevelopment project plans were reviewed for this reporting period? 158; of which 71 were subject to the City's post-construction/permanent runoff treatment standards

G. How many development and redevelopment project plans were approved? 30 (post-construction regulated)

H. How many permanent stormwater management practices/facilities were inspected? 11

I. How many were found to have inadequate maintenance? 4

J. Of those, how many were notified and remedied within 30 days? (If window is different than 30 days, please specify) 0

K. How many enforcement actions were taken that address inadequate maintenance? 0

L. Do you use an electronic tool (e.g., GIS, database, spreadsheet) to track post-construction BMPs, inspections and maintenance? ☒ Yes ☐ No

M. Do all municipal departments and/or staff (as relevant) have access to this tracking system? ☐ Yes ☒ No

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

O. How many maintenance agreements has the MS4 approved during the reporting period? 31

8. CODES AND ORDINANCES REVIEW AND UPDATE (SECTION 4.2.5.3)

A. Is a completed copy of the EPA Water Quality Scorecard submitted with this report? ☐ Yes ☒ No submitted with last year's report

B. Include status of implementation of code, ordinance and/or policy revisions associated with permanent stormwater management. No significant changes in past year.

9. STORMWATER MANAGEMENT FOR MUNICIPAL OPERATIONS (SECTION 4.2.6)

-- MTSU --

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

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

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

1. If Yes, at what frequency are inspections conducted? yearly

C. Have standard operating procedures or BMPs been developed for all MS4 field activities? (e.g., road repairs, catch basin cleaning, landscape management, etc.) ☐ Yes ☒ No

D. Do you have a prioritization system for storm sewer system and permanent BMP inspections? (yes, for BMP inspections twice a year) ☐ Yes ☒ No

E. On average, how frequently are catch basins and other inline treatment systems inspected? 1/year

F. On average, how frequently are catch basins and other inline treatment systems cleaned out/maintained? 1/year

G. Do municipal employees in all relevant positions and departments receive comprehensive training on stormwater management? ☒ Yes ☐ No

H. If yes, do you also provide regular updates and refreshers? ☒ Yes ☐ No

If so, how frequently and/or under what circumstances? Annual or as needed

-- CITY --

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

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

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

1. If Yes, at what frequency are inspections conducted?

C. Have standard operating procedures or BMPs been developed for all MS4 field activities? (e.g., road repairs, catch basin cleaning, landscape management, etc.) ☐ Yes ☒ No

D. Do you have a prioritization system for storm sewer system and permanent BMP inspections? (yes, for BMP inspections twice a year) ☒ Yes ☒ No

E. On average, how frequently are catch basins and other inline treatment systems inspected? Area drains/street inlets are checked on rainy days, for identifying dysfunctional drainage and need for repair; avg. across the city these drains are checked each 1-2X/year. Pipes are checked and cleaned on an approx.. 1/5-7 year schedule.

F. On average, how frequently are catch basins and other inline treatment systems cleaned out/maintained? Varies by frequency of issues (e.g., frequency of complaints or observed blockages/debris); 1/5 year overall average. Ditches and earthen channels cleaned out/maintained as requested by inspectors or public upon observing drainage restrictions.

G. Do municipal employees in all relevant positions and departments receive comprehensive training on stormwater management? ☒ Yes ☐ No

H. If yes, do you also provide regular updates and refreshers? ☒ Yes ☐ No

If so, how frequently and/or under what circumstances? 1/two years

10. Stormwater Management Program Update (Section 4.4)

A. Describe any changes to the MS4 program during the reporting period including but not limited to:

Changes adding (but not subtracting or replacing) components, controls or other requirements (Section 4.4.2.a). n/a

Changes to replace an ineffective or unfeasible BMP (Section 4.4.2.b). n/a

Information (e.g. additional acreage, outfalls, BMPs) on program area expansion based on annexation or newly urbanized areas. Additional acreage, 36 acres. Additional outfalls, 7. Permanent stormwater control sites mapped this year, 20; mapped to date, 73

Changes to the program as required by the division (Section 4.4.3). n/a

11. 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.

Indicator	Began Tracking (year)	Frequency	Number of Locations
Example: E. coli	2003	Weekly April–September	20
Regulatory buffer zones along streams	2007	Annually	153 parcels/49 acres/35-50 feet wide, total as of 6/2013
Visual stream assessments	2008	Annually	4 segments (7.8 miles) assessed 2012-13 out of total 8 watersheds and 48 total segments/reaches
E.coli	2010	Varies	Approx. 20 locations and 75 samples in 2012-13

Street sweeper debris (Street Dept.)	2006	Monthly	City wide 878 tons in 2012-13
Storm sewer cleaning (MWSD)	2008	Weekly	City wide by watershed and hot spots 149 cubic yds in 2012-13; 127,223 linear feet
Drainage work orders (Street Dept.)	2012	Weekly	43 (e.g., grading work), 42 resolved in 2012-13
Drainage complaints, and resolved (Engineering)	2012	Weekly	243 of which 231 resolved, in 2012-13
Capital projects	2012	Annually	Hobgood School pervious pavers

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. 73 regulated, permanent stormwater control systems in place. We do not have instream water quality information that has been related to these structures, nor performance data or modeling. We do have record of stream buffer length and acreage; and correlating stream buffers with stream monitoring, including sampling of water quality and macroinvertebrates, we find cooler water temperature in buffered segments and lower dissolved oxygen levels in daytime.

12. ENFORCEMENT (SECTION 4.5)

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:

Action	Construction	Permanent Stormwater Controls	Illicit Discharge	Authority?	
Notice of deficiency	82	0	1	☒ Yes	☐ No
Notice of violation	#11	#0	#0	☒ Yes	☐ No
Administrative fines	#0	#0	#0	☒ Yes	☐ No
Stop Work Orders	#1	#0	#0	☒ Yes	☐ No
Civil penalties	#0	#0	#0	☒ Yes	☐ No
Criminal actions	#0	#0	#0	☐ Yes	☒ No
Administrative orders	#0	#0	#0	☒ Yes	☐ No
Other	#2	#0	#0		

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? ☐ Yes ☒ No

C. What are the 3 most common types of violations documented during this reporting period? Construction EPSC and paperwork violations; washwaters discharged to storm sewer; yard waste placed in storm gutter.

13. PROGRAM RESOURCES (OPTIONAL)

A. What was your annual expenditure to implement the requirements of your MS4 NPDES permit and SWMP this past reporting period? City: $1,552,000 + $778,000 capital improvement projects MTSU: $139,000

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

City: $1,425,000 operating budget +$2,035,000 capital projects MTSU: $141,000

C. Do you have an independent financing mechanism for your stormwater program? ☒ Yes(City) ☒ No (MTSU)

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

Source: Stormwater utility fee Amount $2,708,000

Source: Amount $

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)? City: 9 MTSU: 2.5

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

Entity	Activity/Task/Responsibility	Your Oversight/Accountability Mechanism
MTSU/City M'boro	Education and Public Participation	Memorandum of Understanding/Contract
Rutherford County	Project WET education in County and City schools	Interagency contract; bi-annual meetings

G. Please attach a copy of your Organizational Chart. *Attached charts for Murfreesboro and MTSU.*

14. CERTIFICATION

This report must be signed by a ranking elected official or by a duly authorized representative of that person. See signatory requirements in sub-part 6.7.2 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."

Tommy Bragg RJL — TOMMY BRAGG — 9.27.13

Printed Name and Title (Murfreesboro) Signature Date
Tommy Bragg, Mayor

9/27/13

Printed Name and Title (MTSU) Signature Date
John Cothern, Vice President

Annual reports must be submitted in accordance with the requirements of Section 5.4. (Reporting) of the permit. Annual reports must be submitted to the appropriate Environmental Field Office (EFO) by September 30 of each calendar year, as shown in the table below:

EFO	Street Address	City	Zip Code	Telephone
Nashville	711 R S Gass Boulevard	Nashville	37216	(615) 687-7000