



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
 (615) 532-0625

Small Municipal Separate Storm Sewer System (MS4) Annual Report

1. MS4 INFORMATION

City of Murfreesboro (TNS075469)

Name of MS4

Robert Haley, III

Name of Contact Person

615-848-3200

Telephone (including area code)

220 NW Broad Street

Mailing Address

Murfreesboro

TN

37130

City

State

ZIP code

What is the current population of your MS4? 100,575

What is the reporting period for this annual report? From July 1, 2010 to June 30, 2011

2. PROTECTION OF STATE OR FEDERALLY LISTED SPECIES

A. Are any of the MS4 discharges or discharge-related activities likely to jeopardize any state or federally listed species (**Part 3, Special Conditions, General Permit for Phase II MS4s**) Yes No

B. Please attach the determination of the effect of the MS4 discharges on state or federally listed species per sub-part 3.2.1

3. WATER QUALITY PRIORITIES

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

B. If yes, identify each impaired water, the impairment cause(s), whether a TMDL has been approved by EPA for each, and whether the TMDL identifies your MS4 as a source of the impairment.

Waterbody I.D. #	Cause/TMDL Priority	Approved TMDL		MS4 Assigned to WLA	
		<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
See attached list of seven impaired waterbody segments. Data taken from 2010 proposed final 303(d) list.	Identified causes include habitat loss, siltation, Escherichia coli, nutrients (N and P), nitrates, low dissolved oxygen.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Five of the above waterbody segments have at least one TMDL, for a total of 12 parameter-specific TMDLs.	E-coli (3 segments); siltation (3 segments); habitat loss/streamside cover (1 segment); and nitrogen and phosphorus (2 segments each); and low D.O./CBOD5 (1 segment).	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No

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Eleven of the twelve parameter-specific TMDLs assign a WLA to the MS4. E-coli and siltation are in terms of percentage reduction off a modeled level; the nitrogen and phosphorus WLAs in terms of lb/acre/year. Yes No Yes No

- C. What specific sources of these pollutants of concern are you targeting? Construction site runoff (sediment); runoff from developing properties (sediment); riparian buffers (habitat alteration); commercial operations (e.g. restaurants) (e-coli)
- D. Do you have discharges to any Exceptional TN Waters (ETWs) or Outstanding National Resource Waters (ONRWs)? Yes No
- E. Are you implementing additional specific provisions to ensure the continued integrity of ETWs or ONRWs located within your jurisdiction? Yes No

4. PUBLIC EDUCATION AND PUBLIC PARTICIPATION

- A. Is your public education program targeting specific pollutants and sources of those pollutants? Yes No
- B. If yes, what are the specific causes, sources and/or pollutants addressed by your public education program? Habitat alteration (WQPA requirements; stream buffer brochure, tree day Overall Creek); washwater (car washing PSA video on City TV, radio ads); non-stormwater (video on City TV); sediment generated on construction sites and by commercial properties
- C. Note specific successful outcome(s) (NOT tasks, events, publications) fully or partially attributable to your public education program during this reporting period. Planting of trees (tree day); placement of silt fence and other epsc controls; installation of green infrastructure as a part of post-construction stormwater mgt controls (e.g. Gateway Village, Highland Heights Public Housing Complex, Old Fort Park infiltration, bioretention, swales); to date 18 stormwater fee credits granted.
- 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? Yes No
- E. Provide a summary of all public meetings required by the permit. Over the 2010-11 report year, public meetings included presentations or review of Puckett Creek Threatened Stream Analysis (7/2010); MS4 annual report (9/2010); and MS4 NOI as co-permittee with MTSU (11/2010). The MWSD board approved, for recommendation to City Council: i.) acquisition of land and contracting engineering services for plans to construct a regional sediment-detention basin (Molloy Lane Regional Water Quality Pond) to capture sediment from a 70 acre drainage basin to the West Fork Stones River (7&8/2010); ii.) a service contract with WaterWorks of MTSU, to assist the city in MS4 public outreach and participation efforts (9/2010); iii.) design services and change orders related to contract with Southern Creations/construction of water quality treatment structures at Old Fort Park; iv.) the stormwater management fund budget (5/2011); and v.) approval of funds for contract to treat for invasive parrots feather in Discovery Center wetlands (6/2011).

5. CODES AND ORDINANCES REVIEW AND UPDATE

- A. Is a completed copy of the EPA Water Quality Scorecard submitted with this report? Yes No
- B. Include status of implementation of code, ordinance and/or policy revisions associated with permanent stormwater management. Ordinance 08-O-17 was passed June 20, 2008, which added certain post-construction stormwater standards to Murfreesboro city code, and a post-construction BMP manual was promulgated in conjunction with the ordinance. Several city stormwater-related staff have discussed (staff meetings, 3/18/2011, 4/15/2011) the type of changes we will need to make to our permanent stormwater management code under the new TN MS4 permit (8/31/2010).

6. CONSTRUCTION

- 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

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- B. How many active construction sites disturbing at least one acre were there in your jurisdiction this reporting period? 199 active sites
- C. How many of these active sites did you inspect this reporting period? 199
- 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) sites of greater than five acres of disturbance; c) sites upstream of, within 1/4 mile, of impaired or exceptional waters ; d) response to complaint

7. ILLICIT DISCHARGE ELIMINATION

- 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? 633
- D. How many of these outfalls have been screened for dry weather discharges? 88
- E. How many of these have been screened more than once? 8 outfalls
- F. What is your frequency for screening outfalls for illicit discharges? 1/5 years (varies by watershed)
- G. Do you have an ordinance that effectively prohibits illicit discharges? Yes No
- H. During this reporting period, how many illicit discharges/illegal connections have you discovered (or been reported to you)? 7 reported/2 confirmed
- I. Of those illicit discharges/illegal connections that have been discovered or reported, how many have been eliminated? 1 certain, 1 uncertain (pool backwash)

8. STORMWATER MANAGEMENT FOR MUNICIPAL OPERATIONS

- A. Have stormwater pollution prevention plans (or an equivalent plan) been developed for:
- | | | |
|---|------------------------------|--|
| All parks, ball fields and other recreational facilities | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| All municipal turf grass/landscape management activities | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| All municipal vehicle fueling, operation and maintenance activities | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| All municipal maintenance yards | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| All municipal waste handling and disposal areas | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
- B. Are stormwater inspections conducted at these facilities? Yes No
1. If Yes, at what frequency are inspections conducted? na
- 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 No
- E. On average, how frequently are catch basins and other inline treatment systems inspected? Varies by area of city; overall average, 2x/year
- 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); overall estimated 1/5 year overall average.
- 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?

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? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
|---|---|-----------------------------|

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- 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.) Projects occurring on pieces of property at least one acre in size - or on pieces of property being developed as part of a common development plan that is one acre or greater - and which involve the addition of 10,000 square feet or more of impervious area as a part of the project or common plan of development.
- C. Have you implemented and enforced performance standards for permanent stormwater controls? Yes No
- D. Do these performance standards go beyond the requirements found in paragraph 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/default.aspx?ekmenu=42&id=4766>
- F. How many development and redevelopment project plans were reviewed for this reporting period? 100
total; 99 approved; 40 subject to the City's post-construction runoff treatment standards.
- G. How many development and redevelopment project plans were approved? 23 approved for construction
- H. How many permanent stormwater management practices/facilities were inspected? 7
- I. How many were found to have inadequate maintenance? 2
- 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? 1

10. 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:

Action	Construction	Permanent Stormwater Controls	Illicit Discharge	Authority?
Notice of violation	# <u>35</u>	# <u>0</u>	# <u>0</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Administrative fines	# <u>0</u>	# <u>0</u>	# <u>0</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Stop Work Orders	# <u>7</u>	# <u>0</u>	# <u>0</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Civil penalties	# <u>0</u>	# <u>0</u>	# <u>0</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

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* Visual stream assessments, street sweeper debris, storm sewer cleaning are not overall-effectiveness indicators, but are important tracking figures we want to include in our annual report to TDEC.

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. 20 regulated, permanent stormwater control systems in place. No instream water quality information has been related to these structures, or performance data or modeling, other than observations of lower water temperature on buffered stream segments.

13. STORMWATER MANAGEMENT PROGRAM UPDATE

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 per **paragraph 4.4.2.a** of the permit. na

Changes to replace an ineffective or unfeasible BMP per **paragraph 4.4.2.b** of the permit. na

Information (e.g. additional acreage, outfalls, BMPs) on program area expansion based on annexation or newly urbanized areas. 13 acres annexed; 10 stormwater outfalls added (633 outfalls 6/30/2011);

Changes to the program as required by the division. na (changes upcoming under new, 8/31/2010 permit)

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.”

<u>Tommy Bragg, Mayor</u>	<u>Tommy Bragg - Mayor</u>	<u>10-4-11</u>
Printed Name and Title	Signature	Date

Annual reports must be submitted in accordance with the requirements of subpart 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
Chattanooga	540 McCallie Avenue STE 550	Chattanooga	37402	(423) 634-5745
Columbia	1421 Hampshire Pike	Columbia	38401	(931) 380-3371
Cookeville	1221 South Willow Ave.	Cookeville	38506	(931) 432-4015
Jackson	1625 Hollywood Drive	Jackson	38305	(731) 512-1300
Johnson City	2305 Silverdale Road	Johnson City	37601	(423) 854-5400
Knoxville	3711 Middlebrook Pike	Knoxville	37921	(865) 594-6035
Memphis	8383 Wolf Lake Drive	Bartlett	38133	(901) 371-3000
Nashville	711 R S Gass Boulevard	Nashville	37216	(615) 687-7000

Attachment to 2010-11 MS4 annual report for Murfreesboro, Tennessee
Question no. 2., Protection of state or federally listed species; reference permit
section 3.2.1

Federally listed species. Federally listed species within the boundaries of Murfreesboro are the Tan riffleshell mollusc (*Epioblasma florentina walkeri*), records indicating its presence in the East Fork Stones River (HUC 051302030107 watershed). A portion of the City (Siegel Park, Cherry Lane area, Swamp Leanna Road) is in this watershed. 1.7 square miles of the City (total 54 square miles) lies in the East Fork Stones River watershed, and the 1.7 mile square area is not intensively developed or urban. We do not have reason to believe that storm water discharges are or have jeopardized the listed endangered species Tan riffleshell.

State listed species. State listed species of concern include the Tan Riffleshell mollusk (S1), the Salamander Mussel (*Simpsonaias ambigua*)(S1); Littlewing Pearlymussel (*Pegias fibula*)(S1); the Bedrock Shiner (*Notropis rupestris*) (S2) (in Puckett Creek north of Highway 96, and in West Fork Stones River downstream of Medical Center Parkway); the Streamside Salamander (*Ambystoma barbouri*) (S2) (in the vicinity of Puckett Creek between Highway 99 and Highway 96); Harelip Sucker (*Lagochila lacera*) (SX, meaning believed extirpated from State); the Smallscale Darter (*Etheostoma microlepidum*)(S2); Slenderhead darter (*Percina phoxocephala*) (S3); Ashy Darter (*Etheostoma cinereum*)(S2S3); Tippecanoe Darter (*Etheostoma tippecanoe*) (S1S2).

Note: The previous MS4 general permit 2003-2010 has not required that the City give special attention to State-listed species; thus, for this fiscal year, the City has not applied special attention, such as field studies or special stormwater controls, to protect these species. The City, however, is of the opinion that that stormwater discharges are not jeopardizing listed species:

- i.) the City follows a planning and plans review process that is cognizant of land disturbance and stream alterations and seeks to maintain public and private development in accord with those requirements;
- ii.) the City put in place erosion prevent and sediment control regulations that apply City-wide (2005);
- ii.) the City put in place treatment requirements for stormwater runoff from areas of new development (2008), and the requirement for new development projects to establish and protect natural buffers streamside in areas of new development;
- iii.) the City has begun a program of stream surveys, including visual assessments and macroinvertebrate monitoring, and over the years will be able to track trends in diversity of aquatic fauna with the data; and
- iv.) the City broadcasts stormwater and water pollution prevention messages in various media.

Supplement to 2010-11 MS4 annual report for Murfreesboro, Tennessee
 Question no. 3., Water Quality Priorities

B. If yes, identify each impaired water, the impairment causes, whether a TMDL has been approved by EPA for each, and whether the TMDL identifies your MS4 as a source of the impairment. In the interest of showing the latest information for this year's annual report, the City consulted the proposed final 2010 303(d) list. Answers in black type are based on the 2010 "proposed final version 2010 303(d) list" for the Stones River Watershed. Red (italicized) type indicates final 2008 303(d) list information not present in the 2010 proposed final list.

Waterbody I.D. #	Common name	Cause/TMDL Priority	Approved TMDL Yes/No	MS4 Assigned to WLA Yes/No	
				Yes/No	Quantity
TN05130203018 _0100	Sinking Creek	Alteration in stream-side or littoral vegetative cover/M	No	No	--
"	"	Escherichia coli/na	Yes	Yes	75%
TN05130203018 _2000	WF Stones River (u/s of I-840 to Sinking Creek)	Total phosphorus/L	No	No	--
"	"	Nitrates/L	No	No	--
"	"	Loss of biological integrity due to siltation/M	No	No	--
TN05130203018 _3000	WF Stones River (Sinking Creek to Lytle Creek)	Loss of biological integrity due to siltation/M	No	No	--
<i>TN05130203018 _5000</i>	<i>WF Stones River (Middle Fork SR to confl w/Lytle Cr-Christmas Cr)</i>	<i>Loss of biological integrity due to siltation/H</i>	<i>No</i>	<i>No</i>	<i>--</i>
TN05130203022 _1000	Lytle Creek (mouth to Lees Spring Branch)	Habitat loss due to alteration in stream-side or littoral vegetative cover/na	N/A	No	--
"	"	Loss of biological integrity due to siltation/na	Yes	Yes	37.3%
"	"	Escherichia coli/na	Yes	Yes	> 79.9%
TN05130203023 _0310	Bear Branch (Dry Branch to headwaters)	Loss of biological integrity due to siltation	Yes	Yes	57.3%
"	"	Habitat loss due to alteration in stream-side or littoral vegetative cover	Yes	No	--
"	"	Nutrients/na	Yes	--	--
"	"	Nitrogen/na	Yes	Yes	8019 lb/yr
"	"	Total Phosphorous/na	Yes	Yes	1699 lb/yr
"	"	Low dissolved oxygen/na	na	--	--
"	"	CBOD5/na	na	--	--
TN05130203023 -0210	Big Ditch (mouth to one mile point)	Physical Substrate Habitat Alteration/na	No	No	--
"	"	Habitat loss due to alteration in stream-side or littoral vegetative cover/na	No	No	--
"	"	Loss of biological integrity due to siltation/na	Yes	Yes	57.3%
TN05130203022 -0100	Town Creek (unnamed trib to Lytle Creek)	Low dissolved oxygen/na	Yes	--	--
"	"	CBOD5	Yes	Yes	1,061 lbs/yr
"	"	Nitrogen	Yes	Yes	534 lbs/yr
"	"	Total Phosphorous	Yes	Yes	113 lbs/yr
"	"	Escherichia coli/na	Yes	Yes	>79.7%