

Tennessee Department of Environment and Conservation
 Division of Water Resources

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Phase II Small Municipal Separate Storm Sewer System (MS4) Annual Report

1. MS4 Information

Name of MS4: City of Millersville		MS4 Permit Number: TNS 077887
Contact Person: Michael Barr		Email Address: CityManager@cityofmillersville.com
Telephone: (615) 859-0880		MS4 Program Web Address: http://www.cityofmillersville.com/department/index.php?structureid=23
Mailing Address: 1246 Louisville Highway		
City: Millersville	State: TN	ZIP code: 37072

What is the current population of your MS4? 6,742

What is the reporting period for this annual report? July 1 2017 to June 30 2018

2. Discharges to Waterbodies with Unavailable Parameters or Exceptional Tennessee Waters (Section 3.1)

- A. Does your MS4 discharge into waters with unavailable parameters (previously referred to as impaired) for pathogens, nutrients, siltation or other parameters related to stormwater runoff from urbanized areas as listed on TN's most current 303(d) list and/or according to the on-line state GIS mapping tool (tdeconline.tn.gov/dwr/)? If yes, attach a list. Yes No
- B. Are there established and approved TMDLs (<http://www.tn.gov/environment/article/wr-ws-tennessees-total-maximum-daily-load-tmdl-program>) with waste load allocations for MS4 discharges in your jurisdiction? If yes, attach a list. Yes No
- C. Does your MS4 discharge to any Exceptional Tennessee Waters (ETWs - http://environment-online.tn.gov:8080/pls/enf_reports/f?p=9034:34304:4880790061142)? If yes, attach a list. Yes No
- D. Are you implementing specific Best Management Practices (BMPs) to control pollutant discharges to waterbodies with unavailable parameters or ETWs? If yes, describe the specific practices: The City of Millersville has adopted the Tennessee Sediment and Erosion Control Handbook, and thereby requires a minimum 60 ft. riparian buffer zone adjacent to the streams with unavailable parameters measured from top of bank. Additionally, the City of Millersville's adopted stormwater ordinance requires a minimum 50ft. vegetative buffer measured from the top of bank of all streams. Yes No

3. Public Education/Outreach and Involvement/Participation (Sections 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, such as Hot Spots? If yes, describe the specific pollutants and/or sources targeted by your public education program: Public education material targeted common household pollutants, restaurant best management practices, and vehicle repair and maintenance. Please see examples of informational material in attached appendix. Yes No

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- C. Do you have a webpage dedicated to your stormwater program? If yes, provide a link/URL: <http://www.cityofmillersville.com/department/index.php?structureid=23> Yes No
- D. Summarize how you advertise and publicize your public education, outreach, involvement and participation opportunities: Stormwater information is posted on the City website, at City Hall, at the Public Library, and at the Millersville Community Center. City of Millersville hosted "Trail of Treats" event on Halloween where informational material was distributed to the public. Please see examples of informational material in attached appendix.
- E. Summarize the public education, outreach, involvement and participation activities you completed during this reporting period: City of Millersville hosted "Trail of Treats" event on Halloween where informational material was distributed to public. The City of Millersville partnered with the City of Goodlettsville for bi-annual stream cleanup days, held on September 9, 2017 and June 9, 2018. This was a volunteer effort in which participants saw firsthand the effects of stormwater pollution on our streams. The City again partnered with the Cities of Goodlettsville and Gallatin to conduct "Project WET" (Water Education for Teachers). The WET program, held on Saturday, September 30th, 2017, aimed to teach teachers concerning stormwater quality and pollution impacts on Tennessee streams. Teachers were also provided hands-on activity examples to share with their students. Please see example materials in attached appendix.
- F. Summarize any specific successful outcome(s) (e.g., citizen involvement, pollutant reduction, water quality improvement, etc.) fully or partially attributable to your public education and participation program during this reporting period: The City of Millersville partnered with the City of Goodlettsville for the bi-annual stream cleanup days, held on September 9, 2017 and June 9, 2018. This was a volunteer effort coordinated by both municipalities on where citizen volunteers removed trash and pollutants from a portion of Slaters and Mansker Creek. Volunteers saw firsthand the effects of stormwater pollution, totalling 10,545 lbs of pollution removed over both events. Additional materials showing number of volunteers and total removed pollutants can be found in the attached appendix.

4. Illicit Discharge Detection and Elimination (Section 4.2.3)

- A. Have you developed and do you continue to update a storm sewer system map that shows the location of system outfalls where the municipal storm sewer system discharges into waters of the state or conveyances owned or operated by another MS4? Yes No
- B. If yes, does the map include inputs into the storm sewer collection system, such as the inlets, catch basins, drop structures or other defined contributing points to the sewershed of that outfall, and general direction of stormwater flow? Yes No
- C. How many outfalls have you identified in your storm sewer system? 42
- D. Do you have an ordinance, or other regulatory mechanism, that prohibits non-stormwater discharges into your storm sewer system? Yes No
- E. Have you implemented a plan to detect, identify and eliminate non-stormwater discharges, including illegal disposal, throughout the storm sewer system? If yes, provide a summary: The City of Millersville continues to employ a Standard Operating Procedure and Enforcement Response Plan for city staff concerning illicit discharges. The SOP provides detailed instructions for city staff when encountering and searching for an illicit discharge. The ERP outlines assessment and penalty procedures for City staff to follow when an illicit discharge is discovered. Please see the Standard Operating Procedure and Enforcement Response Plan in the attached appendix. Yes No
- F. How many illicit discharge related complaints were received this reporting period? 4
- G. How many illicit discharge investigations were performed this reporting period? 4

H. Of those investigations performed, how many resulted in valid illicit discharges that were addressed and/or eliminated? 4

5. Construction Site Stormwater Runoff Pollutant Control (Section 4.2.4)

- A. Do you have an ordinance or other regulatory mechanism requiring:
- | | | |
|---|---|-----------------------------|
| Construction site operators to implement appropriate erosion prevention and sediment control BMPs consistent with those described in the TDEC EPSC Handbook? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| Construction site operators to control wastes such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| Design storm and special conditions for unavailable parameters waters or Exceptional Tennessee Waters consistent with those of the current Tennessee Construction General Permit (TNR100000)? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
- B. Do you have specific procedures for construction site plan (including erosion prevention and sediment BMPs) review and approval? Yes No
- C. Do you have sanctions to enforce compliance? Yes No
- D. Do you hold pre-construction meetings with operators of priority construction activities and inspect priority construction sites at least monthly? Yes No
- E. How many construction sites disturbing at least one acre or greater were active in your jurisdiction this reporting period? 6
- F. How many active priority and non-priority construction sites were inspected this reporting period? 6
- G. How many construction related complaints were received this reporting period? 1

6. Permanent Stormwater Management at New Development and Redevelopment Projects (Section 4.2.5)

- A. Do you have a regulatory mechanism (e.g. ordinance) requiring permanent stormwater pollutant removal for development and redevelopment projects? If no, have you submitted an Implementation Plan to the Division? Yes No
 Yes No
- B. Do you have an ordinance or other regulatory mechanism requiring:
- | | | |
|---|---|-----------------------------|
| Site plan review and approval of new and re-development projects? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| A process to ensure stormwater control measures (SCMs) are properly installed and maintained? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
- Permanent water quality riparian buffers? If yes, specify requirements: New development and significant redevelopment projects are required to include a waterway buffer if the property includes or is adjacent to any "blue line" streams or intermittent "blue line" streams as indicated on USGS map, and for all waterways where floodway and floodplain have been determined. Yes No

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- C. What is the threshold for development and redevelopment project plans plan review (e.g., all projects, projects disturbing greater than one acre, etc.)? All development and redevelopment projects requiring a land disturbance permit are required to submit construction plans to the City of Millersville. A land disturbance permit is required for projects that (a) disturb more than one acre, (b) disturb less than one acre if part of a common development plan, (c) less than one acre if in the discretion of the Stormwater Manager such activity poses a unique threat to water, public health or safety, or (d) the project proposes the creation and use of borrow pits, fill areas and/or stockpiles.
- D. How many development and redevelopment project plans were reviewed for this reporting period? 6
- E. How many development and redevelopment project plans were approved? 6
- F. How many permanent stormwater related complaints were received this reporting period? 0
- G. How many enforcement actions were taken to address improper installation or maintenance? 0
- H. Do you have a system to inventory and track the status of all public and private SCMs installed on development and redevelopment projects? Yes No
- I. Does your program include an off-site stormwater mitigation or payment into public stormwater fund? If yes, specify. _____ Yes No

7. Stormwater Management for Municipal Operations (Section 4.2.6)

- A. As applicable, have stormwater related operation and maintenance plans that include information related to maintenance activities, schedules and the proper disposal of waste from structural and non-structural stormwater controls been developed and implemented at the following municipal operations:
- Streets, roads, highways? Yes No
- Municipal parking lots? Yes No
- Maintenance and storage yards? Yes No
- Fleet or maintenance shops with outdoor storage areas? Yes No
- Salt and storage locations? Yes No
- Snow disposal areas? Yes No
- Waste disposal, storage, and transfer stations? Yes No
- B. Do you have a training program for employees responsible for municipal operations at facilities within the jurisdiction that handle, generate and/or store materials which constitute a potential pollutant of concern for MS4s? Yes No
- If yes, are new applicable employees trained within six months, and existing applicable employees trained and/or retrained within the permit term? Yes No

8. Reviewing and Updating Stormwater Management Programs (Section 4.4)

- A. Describe any revisions to your program implemented during this reporting period including but not limited to:

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Modifications or replacement of an ineffective activity/control measure. None were made this reporting period.
 Changes to the program as required by the division to satisfy permit requirements. None were made this reporting period.

Information (e.g. additional acreage, outfalls, BMPs) on newly annexed areas and any resulting updates to your program. No areas have been annexed this reporting period.

- B. In preparation for this annual report, have you performed an overall assessment of your stormwater management program effectiveness? If yes, summarize the assessment results, and any modifications and improvements scheduled to be implemented in the next reporting period. Currently, the Development Services Director and City Fire Chief handle stormwater complaints and inspections aside from numerous other responsibilities. Most often, stormwater complaints are quickly handled over the phone to expedite communication and results. City staff attend monthly Mid-Tennessee Stormwater Group meetings in order to learn and share with other stormwater professionals in the middle Tennessee area. In the upcoming reporting period, city staff plan to better record and document stormwater related inspections and verbal warnings with a standardized complaint and incident report log. Yes No

9. Enforcement Response Plan (Section 4.5)

- A. Have you implemented an enforcement response plan that includes progressive enforcement actions to address non-compliance, and allows the maximum penalties specified in TCA 68-221-1106? If no, explain. _____ Yes No
- B. As applicable, identify which of the following types of enforcement actions (or their equivalent) were used during this reporting period; indicate the number of actions, the minimum measure (e.g., construction, illicit discharge, permanent stormwater management), and note those for which you do not have authority:

<u>Action</u>	<u>Construction</u>	<u>Permanent Stormwater</u>	<u>Illicit Discharge</u>	<u>In Your ERP?</u>	
Verbal warnings	<u>#8</u>	<u>#6</u>	<u>#1</u>	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Written notices	<u>#0</u>	<u>#0</u>	<u>#1</u>	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Citations with administrative penalties	<u>#0</u>	<u>#1</u>	<u>#1</u>	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Stop work orders	<u>#0</u>	<u>#0</u>	<u>#0</u>	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Withholding of plan approvals or other authorizations	<u>#0</u>	<u>#0</u>	<u>#0</u>	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Additional Measures	<u>#0</u>	<u>#0</u>	<u>#0</u>	Describe: <u>N/A</u>	

- C. Do you track instances of non-compliance and related enforcement documentation? Yes No
- D. What were the most common types of non-compliance instances documented during this reporting period? Construction related stormwater violations.

2. Discharges to Waterbodies with Unavailable Parameters or Exceptional Tennessee Waters (Section 3.1)

- B. The Proposed Final 2018 303(d) List of Impaired and Threatened Waters in Tennessee for the Cheatham Reservoir Watershed lists the following bodies of water in the City of Millersville:
 - i. TN05130202220_2000 Manskers Creek
 - ii. TN05130202220_0350 Slaters Creek

3. Public Education/Outreach and Involvement/Participation (Sections 4.2.1 and 4.2.2)

- B. Educational materials are included in the attached appendix.
- C. <http://www.cityofmillersville.com/departments/index.php?structureid=23>
- D. Educational materials are included in the attached appendix.
- E. Please see the educational materials in the attached appendix.
- F. Please see a copy of the informational flyer, signup sheets and results in the attached appendix.

4. Illicit Discharge Detection and Elimination (Section 4.2.3)

- A. Please see the outfall map for Manskers Creek in the attached appendix. Please see item C below for information concerning Slaters Creek.
- B. Inputs into the stormwater system are not included.
- C. According to City records, 18 outfalls exist for Manskers Creek and 24 outfalls exist for Slaters Creek. However, a copy of the map of outfalls for Slaters Creek could not be located for inclusion with this report. The City of Millersville had outfalls investigated for both creeks in 2014, and this report for Slaters Creek is included in the attached appendix.
- D. Section 19-111 from the Millersville Stormwater Ordinance, prohibiting non-stormwater discharge, has been attached.
- E. Please see Millersville Standard Operating Procedure (SOP) and Enforcement Response Plan (ERP) for the detection, identification and elimination of illicit discharges in the attached appendix.

5. Construction Site Stormwater Runoff Pollutant Control (Section 4.2.4)

- A. Section 19-106 from the Millersville stormwater ordinance outlining requirements for construction sites is attached.
- B. The City of Millersville contracted the services of an engineering firm to provide engineering and stormwater review of all site plans submitted to the City for approval. Engineering review includes review and comment on proposed EPSC plans, SWPPP documents and other stormwater related necessities as needed by each project. All site plans are required to submit erosion prevention and sediment plans that adhere to the

Best Management Practices outlined in the TDEC Sediment and Erosion Control Manual and TDEC Manual for Post Construction as enforced by the City's stormwater ordinance. Land disturbance permits are required for all new and re-development projects that propose to disturb more than one (1) acre; less than one (1) acre if part of a larger common plan of development; less than one (1) acre if in the discretion of the Stormwater Manager such activity poses a unique threat to water, or public health or safety or; the creation and use of borrow pits, fill areas and/or stockpiles. Please see section 19-104 paragraph (a) in the attached stormwater ordinance outlining these requirements.

- C. Section 19-108 paragraph (e) in the attached excerpt from the Millersville Stormwater ordinance outlines sanctions for non-compliant construction sites.

6. Permanent Stormwater Management at New Development and Redevelopment Projects (Section 4.2.5)

- A. Section 19-106 item (e) paragraphs 6 and 7 in the Millersville Stormwater Ordinance requires the owner of a property served by an on-site stormwater management facility to execute an inspection and maintenance agreement that operates as a deed restriction binding on the current property owner and all subsequent property owners. The maintenance agreement assigns responsibility for the maintenance and repair of the stormwater facility, provides for periodic inspection, requires that maintenance needs be addressed in a timely manner, and provides authority to the City of Millersville to address stormwater maintenance issues at the cost of the property owner.
- B. According to the Millersville Stormwater Ordinance, all new development and redevelopment projects requiring a land disturbance permit must submit construction plans for review to the City of Millersville. The City of Millersville requires all permitted projects to submit stormwater as-builts prior to release of performance security. All permitted projects as also required to execute an inspection and maintenance agreement of on-site stormwater facilities that operates as a deed restriction binding on the current property owner and all subsequent property owners. Permanent water quality riparian buffers are covered by section 19-109 in the City's stormwater ordinance and is included in the attached appendix.
- C. Section 19-104 paragraph (a) from the Millersville Stormwater Ordinance that outlines the threshold for development and redevelopment requiring plan review has been included in the attached appendix.

7. Stormwater Management for Municipal Operations (Section 4.2.6)

- A. The City of Millersville continues to follow previously developed Standard Operating Procedures (SOP) concerning municipal good housekeeping. An excerpt from the SOP has been included in the attached appendix.
- B. The City of Millersville requires all public works employees to be trained once every permit cycle (5 years) and within six months for all new hires. For this reporting period, eligible employees attended a joint training conference on March 6th, 2018. Please see the training conference flyer in the attached appendix.

8. Reviewing and Updating Stormwater Management Programs (Section 4.4)

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9. Enforcement Response Plan (Section 4.5)

- A. Sections 19-112 and 19-113 from the Millersville Stormwater Ordinance is attached. These sections outline the City's enforcement actions and penalty assessment.

10. Monitoring, Recordkeeping and Reporting (Section 5)

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Municipal Separate Storm Sewer System (MS4) Annual Report

Reporting Period: July 1, 2017 – June 30, 2018

City of Millersville – TNS077887

APPENDIX



**DISCHARGES TO WATERBODIES WITH UNAVAILABLE PARAMETERS OR
EXCEPTIONAL TENNESSEE WATERS (SECTION 3.1)**

(Question 2)

Supporting Materials

ID305B	WATER_NAME	LOCATION	WATER_TYPE	WATER_SIZE	CAUSE_NAME	TMDL_PRIORITY	SOURCE_NAME
TN05130202001_3000	Cheatham Reservoir	DAVIDSON CO	FRESHWATER RESERVOIR	994	Escherichia coli	L	Combined Sewer Overflows
TN05130202001_3000	Cheatham Reservoir	DAVIDSON CO	FRESHWATER RESERVOIR	994	Escherichia coli	L	Municipal (Urbanized High Density Area)
TN05130202001T_0200	Unnamed Trib to Cheatham Reservoir	CHEATHAM CO	RIVER	2.04	Other anthropogenic substrate alterations	L	Municipal (Urbanized High Density Area)
TN05130202001T_0200	Unnamed Trib to Cheatham Reservoir	CHEATHAM CO	RIVER	2.04	Sedimentation/Siltation	L	Municipal (Urbanized High Density Area)
TN05130202001T_0600	Unnamed Trib to Cheatham Reservoir	SUMNER CO	RIVER	1.13	Alteration in stream-side or littoral vegetative covers	L	Municipal (Urbanized High Density Area)
TN05130202001T_0600	Unnamed Trib to Cheatham Reservoir	SUMNER CO	RIVER	1.13	Alteration in stream-side or littoral vegetative covers	L	Municipal (Urbanized High Density Area)
TN05130202001T_0600	Unnamed Trib to Cheatham Reservoir	SUMNER CO	RIVER	1.13	Chlorine	L	Municipal Point Source Discharges
TN05130202001T_0600	Unnamed Trib to Cheatham Reservoir	SUMNER CO	RIVER	1.13	Chlorine	L	Municipal Point Source Discharges
TN05130202001T_0600	Unnamed Trib to Cheatham Reservoir	SUMNER CO	RIVER	1.13	Sludge	L	Municipal (Urbanized High Density Area)
TN05130202001T_0600	Unnamed Trib to Cheatham Reservoir	SUMNER CO	RIVER	1.13	Sludge	L	Municipal Point Source Discharges
TN05130202001T_0600	Unnamed Trib to Cheatham Reservoir	SUMNER CO	RIVER	1.13	Sludge	L	Municipal (Urbanized High Density Area)
TN05130202001T_0600	Unnamed Trib to Cheatham Reservoir	SUMNER CO	RIVER	1.13	Sludge	L	Municipal Point Source Discharges
TN05130202001T_0700	Unnamed Trib to Cheatham Reservoir	DAVIDSON CO	RIVER	1	Total Dissolved Solids	L	Landfills
TN05130202001T_0700	Unnamed Trib to Cheatham Reservoir	DAVIDSON CO	RIVER	1	Total Dissolved Solids	L	Landfills
TN05130202001T_0700	Unnamed Trib to Cheatham Reservoir	DAVIDSON CO	RIVER	1	Iron	L	Landfills
TN05130202001T_0700	Unnamed Trib to Cheatham Reservoir	DAVIDSON CO	RIVER	1	Iron	L	Landfills
TN05130202001T_0800	Davidson Branch	DAVIDSON CO	RIVER	2.83	Escherichia coli	L	Municipal (Urbanized High Density Area)
TN05130202001T_0800	Davidson Branch	DAVIDSON CO	RIVER	2.83	Escherichia coli	L	Sanitary Sewer Overflows (Collection System Failures)
TN05130202001T_0800	Davidson Branch	DAVIDSON CO	RIVER	2.83	Escherichia coli	L	Municipal (Urbanized High Density Area)
TN05130202001T_0800	Davidson Branch	DAVIDSON CO	RIVER	2.83	Escherichia coli	L	Sanitary Sewer Overflows (Collection System Failures)
TN05130202001T_0900	Overall Creek	DAVIDSON CO	RIVER	7.83	Sedimentation/Siltation	L	Highways, Roads, Bridges, Infrastructure (New Construction)
TN05130202001T_0900	Overall Creek	DAVIDSON CO	RIVER	7.83	Sedimentation/Siltation	L	Highways, Roads, Bridges, Infrastructure (New Construction)
TN05130202001T_0900	Overall Creek	DAVIDSON CO	RIVER	7.83	Low flow alterations	NA	Highways, Roads, Bridges, Infrastructure (New Construction)
TN05130202001T_0900	Overall Creek	DAVIDSON CO	RIVER	7.83	Low flow alterations	NA	Highways, Roads, Bridges, Infrastructure (New Construction)
TN05130202007_0100	Sims Branch	DAVIDSON CO	RIVER	1.5	Phosphorus (Total)	L	Industrial/Commercial Site Stormwater Discharge (Permitted)
TN05130202007_0100	Sims Branch	DAVIDSON CO	RIVER	1.5	Other anthropogenic substrate alterations	L	Industrial/Commercial Site Stormwater Discharge (Permitted)
TN05130202007_0100	Sims Branch	DAVIDSON CO	RIVER	1.5	Oxygen, Dissolved	L	Industrial/Commercial Site Stormwater Discharge (Permitted)
TN05130202007_0100	Sims Branch	DAVIDSON CO	RIVER	1.5	Escherichia coli	NA	Municipal (Urbanized High Density Area)
TN05130202007_0150	Sims Branch	DAVIDSON CO	RIVER	1.4	Other anthropogenic substrate alterations	L	Municipal (Urbanized High Density Area)
TN05130202007_0150	Sims Branch	DAVIDSON CO	RIVER	1.4	Other anthropogenic substrate alterations	L	Industrial/Commercial Site Stormwater Discharge (Permitted)
TN05130202007_0150	Sims Branch	DAVIDSON CO	RIVER	1.4	Oxygen, Dissolved	L	Industrial/Commercial Site Stormwater Discharge (Permitted)
TN05130202007_0150	Sims Branch	DAVIDSON CO	RIVER	1.4	Oxygen, Dissolved	L	Municipal (Urbanized High Density Area)
TN05130202007_0150	Sims Branch	DAVIDSON CO	RIVER	1.4	Propylene Glycol	L	Industrial/Commercial Site Stormwater Discharge (Permitted)
TN05130202007_0300	Finley Branch	DAVIDSON CO	RIVER	1.2	Other anthropogenic substrate alterations	L	Municipal (Urbanized High Density Area)
TN05130202007_0300	Finley Branch	DAVIDSON CO	RIVER	1.2	Phosphorus (Total)	L	Municipal (Urbanized High Density Area)
TN05130202007_0300	Finley Branch	DAVIDSON CO	RIVER	1.2	Escherichia coli	NA	Municipal (Urbanized High Density Area)
TN05130202007_0600	Collins Creek	DAVIDSON CO	RIVER	6.7	Alteration in stream-side or littoral vegetative covers	L	Municipal (Urbanized High Density Area)
TN05130202007_0600	Collins Creek	DAVIDSON CO	RIVER	6.7	Sedimentation/Siltation	L	Site Clearance (Land Development or Redevelopment)
TN05130202007_0800	Indian Creek	DAVIDSON CO	RIVER	5.7	Phosphorus (Total)	L	Municipal (Urbanized High Density Area)
TN05130202007_0800	Indian Creek	DAVIDSON CO	RIVER	5.7	Escherichia coli	L	Grazing in Riparian or Shoreline Zones
TN05130202007_0900	Owl Creek	DAVIDSON CO	RIVER	15.96	Sedimentation/Siltation	L	Municipal (Urbanized High Density Area)
TN05130202007_0900	Owl Creek	WILLIAMSON CO	RIVER	15.96	Sedimentation/Siltation	L	Municipal (Urbanized High Density Area)
TN05130202007_0900	Owl Creek	DAVIDSON CO	RIVER	15.96	Phosphorus (Total)	L	Municipal (Urbanized High Density Area)
TN05130202007_0900	Owl Creek	WILLIAMSON CO	RIVER	15.96	Phosphorus (Total)	L	Municipal (Urbanized High Density Area)
TN05130202007_0900	Owl Creek	DAVIDSON CO	RIVER	15.96	Alteration in stream-side or littoral vegetative covers	L	Municipal (Urbanized High Density Area)
TN05130202007_0900	Owl Creek	WILLIAMSON CO	RIVER	15.96	Alteration in stream-side or littoral vegetative covers	L	Municipal (Urbanized High Density Area)
TN05130202007_1000	Mill Creek	DAVIDSON CO	RIVER	3.5	Oxygen, Dissolved	L	Municipal (Urbanized High Density Area)
TN05130202007_1000	Mill Creek	DAVIDSON CO	RIVER	3.5	Oxygen, Dissolved	L	Sanitary Sewer Overflows (Collection System Failures)
TN05130202007_1000	Mill Creek	DAVIDSON CO	RIVER	3.5	Sedimentation/Siltation	L	Municipal (Urbanized High Density Area)
TN05130202007_1000	Mill Creek	DAVIDSON CO	RIVER	3.5	Phosphorus (Total)	L	Municipal (Urbanized High Density Area)
TN05130202007_1000	Mill Creek	DAVIDSON CO	RIVER	3.5	Escherichia coli	L	Sanitary Sewer Overflows (Collection System Failures)
TN05130202007_1100	Holt Creek	WILLIAMSON CO	RIVER	6.2	Nitrate/Nitrite (Nitrite + Nitrate as N)	L	Municipal (Urbanized High Density Area)
TN05130202007_1100	Holt Creek	DAVIDSON CO	RIVER	6.2	Nitrate/Nitrite (Nitrite + Nitrate as N)	L	Municipal (Urbanized High Density Area)
TN05130202007_1100	Holt Creek	WILLIAMSON CO	RIVER	6.2	Phosphorus (Total)	L	Municipal (Urbanized High Density Area)

TN05130202007_1100	Holt Creek	DAVIDSON CO	RIVER	6.2	Phosphorus (Total)	L	Municipal (Urbanized High Density Area)
TN05130202007_1100	Holt Creek	WILLIAMSON CO	RIVER	6.2	Escherichia coli	L	Municipal (Urbanized High Density Area)
TN05130202007_1100	Holt Creek	DAVIDSON CO	RIVER	6.2	Escherichia coli	L	Municipal (Urbanized High Density Area)
TN05130202007_1200	Whittemore Branch	DAVIDSON CO	RIVER	2.9	Other anthropogenic substrate alterations	L	Municipal (Urbanized High Density Area)
TN05130202007_1200	Whittemore Branch	DAVIDSON CO	RIVER	2.9	Escherichia coli	L	Municipal (Urbanized High Density Area)
TN05130202007_1300	Sorghum Branch	DAVIDSON CO	RIVER	3.1	Other anthropogenic substrate alterations	L	Municipal (Urbanized High Density Area)
TN05130202007_1300	Sorghum Branch	DAVIDSON CO	RIVER	3.1	Sedimentation/Siltation	L	Municipal (Urbanized High Density Area)
TN05130202007_1300	Sorghum Branch	DAVIDSON CO	RIVER	3.1	Escherichia coli	L	Municipal (Urbanized High Density Area)
TN05130202007_1400	Sevenmile Creek	DAVIDSON CO	RIVER	2.4	Other anthropogenic substrate alterations	L	Municipal (Urbanized High Density Area)
TN05130202007_1400	Sevenmile Creek	DAVIDSON CO	RIVER	2.4	Oxygen, Dissolved	L	Municipal (Urbanized High Density Area)
TN05130202007_1400	Sevenmile Creek	DAVIDSON CO	RIVER	2.4	Nitrate/Nitrite (Nitrite + Nitrate as N)	L	Municipal (Urbanized High Density Area)
TN05130202007_1400	Sevenmile Creek	DAVIDSON CO	RIVER	2.4	Phosphorus (Total)	L	Municipal (Urbanized High Density Area)
TN05130202007_1400	Sevenmile Creek	DAVIDSON CO	RIVER	2.4	Escherichia coli	NA	Municipal (Urbanized High Density Area)
TN05130202007_1410	Shasta Branch	DAVIDSON CO	RIVER	1.84	Escherichia coli	NA	Municipal (Urbanized High Density Area)
TN05130202007_1410	Shasta Branch	DAVIDSON CO	RIVER	1.84	Escherichia coli	NA	Sanitary Sewer Overflows (Collection System Failures)
TN05130202007_1450	Sevenmile Creek	DAVIDSON CO	RIVER	4.99	Nitrate/Nitrite (Nitrite + Nitrate as N)	L	Municipal (Urbanized High Density Area)
TN05130202007_1450	Sevenmile Creek	DAVIDSON CO	RIVER	4.99	Phosphorus (Total)	L	Municipal (Urbanized High Density Area)
TN05130202007_1450	Sevenmile Creek	DAVIDSON CO	RIVER	4.99	Escherichia coli	NA	Municipal (Urbanized High Density Area)
TN05130202007_1490	Cathy Jo Branch	DAVIDSON CO	RIVER	1.1	Sedimentation/Siltation	L	Animal Feeding Operations (NPS)
TN05130202007_1490	Cathy Jo Branch	DAVIDSON CO	RIVER	1.1	Nitrate/Nitrite (Nitrite + Nitrate as N)	L	Animal Feeding Operations (NPS)
TN05130202007_1490	Cathy Jo Branch	DAVIDSON CO	RIVER	1.1	Other anthropogenic substrate alterations	L	Upstream Impoundments (e.g., PI-566 NRCS Structures)
TN05130202007_1490	Cathy Jo Branch	DAVIDSON CO	RIVER	1.1	Phosphorus (Total)	L	Animal Feeding Operations (NPS)
TN05130202007_1490	Cathy Jo Branch	DAVIDSON CO	RIVER	1.1	Escherichia coli	L	Animal Feeding Operations (NPS)
TN05130202007_1500	Pavillion Branch	DAVIDSON CO	RIVER	1.3	Escherichia coli	NA	Municipal (Urbanized High Density Area)
TN05130202007_2000	Mill Creek	DAVIDSON CO	RIVER	4	Phosphorus (Total)	L	Sanitary Sewer Overflows (Collection System Failures)
TN05130202007_2000	Mill Creek	DAVIDSON CO	RIVER	4	Phosphorus (Total)	L	Municipal (Urbanized High Density Area)
TN05130202007_2000	Mill Creek	DAVIDSON CO	RIVER	4	Sedimentation/Siltation	L	Municipal (Urbanized High Density Area)
TN05130202007_2000	Mill Creek	DAVIDSON CO	RIVER	4	Oxygen, Dissolved	L	Municipal (Urbanized High Density Area)
TN05130202007_2000	Mill Creek	DAVIDSON CO	RIVER	4	Oxygen, Dissolved	L	Sanitary Sewer Overflows (Collection System Failures)
TN05130202007_3000	Mill Creek	DAVIDSON CO	RIVER	5.9	Oxygen, Dissolved	L	Municipal (Urbanized High Density Area)
TN05130202007_3000	Mill Creek	DAVIDSON CO	RIVER	5.9	Sedimentation/Siltation	L	Municipal (Urbanized High Density Area)
TN05130202007_3000	Mill Creek	DAVIDSON CO	RIVER	5.9	Phosphorus (Total)	L	Municipal (Urbanized High Density Area)
TN05130202007_5000	Mill Creek	DAVIDSON CO	RIVER	8.1	Oxygen, Dissolved	L	Unrestricted Cattle Access
TN05130202007_5000	Mill Creek	WILLIAMSON CO	RIVER	8.1	Oxygen, Dissolved	L	Unrestricted Cattle Access
TN05130202007_5000	Mill Creek	DAVIDSON CO	RIVER	8.1	Sedimentation/Siltation	L	Unrestricted Cattle Access
TN05130202007_5000	Mill Creek	WILLIAMSON CO	RIVER	8.1	Sedimentation/Siltation	L	Unrestricted Cattle Access
TN05130202007_5000	Mill Creek	DAVIDSON CO	RIVER	8.1	Phosphorus (Total)	L	Unrestricted Cattle Access
TN05130202007_5000	Mill Creek	WILLIAMSON CO	RIVER	8.1	Phosphorus (Total)	L	Unrestricted Cattle Access
TN05130202007_5000	Mill Creek	DAVIDSON CO	RIVER	8.1	Escherichia coli	NA	Grazing in Riparian or Shoreline Zones
TN05130202007_5000	Mill Creek	WILLIAMSON CO	RIVER	8.1	Escherichia coli	NA	Grazing in Riparian or Shoreline Zones
TN05130202010_0200	Drake Branch	DAVIDSON CO	RIVER	2.7	Sedimentation/Siltation	L	Municipal (Urbanized High Density Area)
TN05130202010_0200	Drake Branch	DAVIDSON CO	RIVER	2.7	Escherichia coli	NA	Sanitary Sewer Overflows (Collection System Failures)
TN05130202010_0900	Ewing Creek	DAVIDSON CO	RIVER	17.6	Other anthropogenic substrate alterations	L	Municipal (Urbanized High Density Area)
TN05130202010_0900	Ewing Creek	DAVIDSON CO	RIVER	17.6	Sedimentation/Siltation	L	Municipal (Urbanized High Density Area)
TN05130202010_0900	Ewing Creek	DAVIDSON CO	RIVER	17.6	Escherichia coli	NA	Sanitary Sewer Overflows (Collection System Failures)
TN05130202010_1000	Whites Creek	DAVIDSON CO	RIVER	2.9	Nutrient/Eutrophication Biological Indicators	L	Municipal (Urbanized High Density Area)
TN05130202010_2000	Whites Creek	DAVIDSON CO	RIVER	3.1	Alteration in stream-side or littoral vegetative covers	L	Municipal (Urbanized High Density Area)
TN05130202010_2000	Whites Creek	DAVIDSON CO	RIVER	3.1	Sedimentation/Siltation	L	Municipal (Urbanized High Density Area)
TN05130202010_2000	Whites Creek	DAVIDSON CO	RIVER	3.1	Escherichia coli	L	Municipal (Urbanized High Density Area)
TN05130202010_2000	Whites Creek	DAVIDSON CO	RIVER	3.1	Escherichia coli	L	Sanitary Sewer Overflows (Collection System Failures)
TN05130202014_0900	Blue Spring Creek	CHEATHAM CO	RIVER	9.8	Escherichia coli	L	Grazing in Riparian or Shoreline Zones
TN05130202023_0100	East Fork Browns Creek	DAVIDSON CO	RIVER	2.2	Other anthropogenic substrate alterations	L	Municipal (Urbanized High Density Area)
TN05130202023_0100	East Fork Browns Creek	DAVIDSON CO	RIVER	2.2	Nitrate/Nitrite (Nitrite + Nitrate as N)	L	Industrial Point Source Discharge
TN05130202023_0100	East Fork Browns Creek	DAVIDSON CO	RIVER	2.2	Nitrate/Nitrite (Nitrite + Nitrate as N)	L	Municipal (Urbanized High Density Area)
TN05130202023_0100	East Fork Browns Creek	DAVIDSON CO	RIVER	2.2	Oil and Grease	L	Industrial Point Source Discharge

TN05130202023_0100	East Fork Browns Creek	DAVIDSON CO	RIVER	2.2	Phosphorus (Total)	L	Municipal (Urbanized High Density Area)
TN05130202023_0100	East Fork Browns Creek	DAVIDSON CO	RIVER	2.2	Escherichia coli	NA	Municipal (Urbanized High Density Area)
TN05130202023_0200	Middle Fork Browns Creek	DAVIDSON CO	RIVER	3.5	Other anthropogenic substrate alterations	L	Site Clearance (Land Development or Redevelopment)
TN05130202023_0200	Middle Fork Browns Creek	DAVIDSON CO	RIVER	3.5	Nitrate/Nitrite (Nitrite + Nitrate as N)	L	Municipal (Urbanized High Density Area)
TN05130202023_0200	Middle Fork Browns Creek	DAVIDSON CO	RIVER	3.5	Phosphorus (Total)	L	Municipal (Urbanized High Density Area)
TN05130202023_0200	Middle Fork Browns Creek	DAVIDSON CO	RIVER	3.5	Escherichia coli	L	Sanitary Sewer Overflows (Collection System Failures)
TN05130202023_0200	Middle Fork Browns Creek	DAVIDSON CO	RIVER	3.5	Escherichia coli	L	Municipal (Urbanized High Density Area)
TN05130202023_0300	West Fork Browns Creek	DAVIDSON CO	RIVER	3.6	Nitrate/Nitrite (Nitrite + Nitrate as N)	L	Municipal (Urbanized High Density Area)
TN05130202023_0300	West Fork Browns Creek	DAVIDSON CO	RIVER	3.6	Phosphorus (Total)	L	Municipal (Urbanized High Density Area)
TN05130202023_0300	West Fork Browns Creek	DAVIDSON CO	RIVER	3.6	Escherichia coli	NA	Sanitary Sewer Overflows (Collection System Failures)
TN05130202023_1000	Browns Creek	DAVIDSON CO	RIVER	0.2	Oil and Grease	L	Industrial Point Source Discharge
TN05130202023_1000	Browns Creek	DAVIDSON CO	RIVER	0.2	Other anthropogenic substrate alterations	L	Municipal (Urbanized High Density Area)
TN05130202023_1000	Browns Creek	DAVIDSON CO	RIVER	0.2	Nitrate/Nitrite (Nitrite + Nitrate as N)	L	Municipal (Urbanized High Density Area)
TN05130202023_1000	Browns Creek	DAVIDSON CO	RIVER	0.2	Phosphorus (Total)	L	Industrial Point Source Discharge
TN05130202023_1000	Browns Creek	DAVIDSON CO	RIVER	0.2	Phosphorus (Total)	L	Municipal (Urbanized High Density Area)
TN05130202023_1000	Browns Creek	DAVIDSON CO	RIVER	0.2	Escherichia coli	NA	Municipal (Urbanized High Density Area)
TN05130202023_1000	Browns Creek	DAVIDSON CO	RIVER	0.2	Escherichia coli	NA	Sanitary Sewer Overflows (Collection System Failures)
TN05130202023_2000	Browns Creek	DAVIDSON CO	RIVER	4.1	Oil and Grease	L	Industrial Point Source Discharge
TN05130202023_2000	Browns Creek	DAVIDSON CO	RIVER	4.1	Phosphorus (Total)	L	Industrial Point Source Discharge
TN05130202023_2000	Browns Creek	DAVIDSON CO	RIVER	4.1	Phosphorus (Total)	L	Municipal (Urbanized High Density Area)
TN05130202023_2000	Browns Creek	DAVIDSON CO	RIVER	4.1	Nitrate/Nitrite (Nitrite + Nitrate as N)	L	Municipal (Urbanized High Density Area)
TN05130202023_2000	Browns Creek	DAVIDSON CO	RIVER	4.1	Other anthropogenic substrate alterations	L	Municipal (Urbanized High Density Area)
TN05130202023_2000	Browns Creek	DAVIDSON CO	RIVER	4.1	Escherichia coli	NA	Municipal (Urbanized High Density Area)
TN05130202027_1000	Dry Creek	DAVIDSON CO	RIVER	0.5	Escherichia coli	NA	Sanitary Sewer Overflows (Collection System Failures)
TN05130202027_2000	Dry Creek	DAVIDSON CO	RIVER	5.9	Other anthropogenic substrate alterations	L	Municipal (Urbanized High Density Area)
TN05130202202_1000	Pages Branch	DAVIDSON CO	RIVER	5.11	Escherichia coli	NA	Municipal (Urbanized High Density Area)
TN05130202209_1000	Cooper Creek	DAVIDSON CO	RIVER	3.9	Other anthropogenic substrate alterations	L	Municipal (Urbanized High Density Area)
TN05130202209_1000	Cooper Creek	DAVIDSON CO	RIVER	3.9	Escherichia coli	NA	Municipal (Urbanized High Density Area)
TN05130202211_1000	Loves Branch	DAVIDSON CO	RIVER	1.71	Other anthropogenic substrate alterations	L	Municipal (Urbanized High Density Area)
TN05130202212_0100	Neeleys Branch	DAVIDSON CO	RIVER	1.7	Escherichia coli	NA	Municipal (Urbanized High Density Area)
TN05130202212_1000	Gibson Creek	DAVIDSON CO	RIVER	3.7	Other anthropogenic substrate alterations	L	Impacts from Hydrostructure Flow Regulation/modification
TN05130202212_1000	Gibson Creek	DAVIDSON CO	RIVER	3.7	Low flow alterations	NA	Impacts from Hydrostructure Flow Regulation/modification
TN05130202220_0100	Lumsley Fork	DAVIDSON CO	RIVER	4.7	Escherichia coli	NA	Municipal (Urbanized High Density Area)
TN05130202220_0200	Walkers Creek	DAVIDSON CO	RIVER	6.49	Escherichia coli	NA	Source Unknown
TN05130202220_0210	Unnamed Trib to Walkers Creek	DAVIDSON CO	RIVER	1.47	Low flow alterations	NA	Upstream Impoundments (e.g., PI-566 NRCS Structures)
TN05130202220_0300	Slaters Creek	SUMNER CO	RIVER	0.99	Sedimentation/Siltation	L	Sand/gravel/rock Mining or Quarries
TN05130202220_0300	Slaters Creek	SUMNER CO	RIVER	0.99	Sedimentation/Siltation	L	Streambank Modifications/destabilization
TN05130202220_0300	Slaters Creek	SUMNER CO	RIVER	0.99	Escherichia coli	NA	Municipal (Urbanized High Density Area)
TN05130202220_0350	Slaters Creek	SUMNER CO	RIVER	10.24	Escherichia coli	NA	Municipal (Urbanized High Density Area)
TN05130202220_0400	Madison Creek	SUMNER CO	RIVER	14.4	Sedimentation/Siltation	L	Site Clearance (Land Development or Redevelopment)
TN05130202220_0500	Center Point Branch	SUMNER CO	RIVER	3.8	Organic Enrichment (Sewage) Biological Indicators	L	Municipal (Urbanized High Density Area)
TN05130202220_1000	Manskers Creek	SUMNER CO	RIVER	7.9	Sedimentation/Siltation	L	Municipal (Urbanized High Density Area)
TN05130202220_1000	Manskers Creek	DAVIDSON CO	RIVER	7.9	Sedimentation/Siltation	L	Municipal (Urbanized High Density Area)
TN05130202220_1000	Manskers Creek	SUMNER CO	RIVER	7.9	Escherichia coli	NA	Municipal (Urbanized High Density Area)
TN05130202220_1000	Manskers Creek	DAVIDSON CO	RIVER	7.9	Escherichia coli	NA	Municipal (Urbanized High Density Area)
TN05130202220_2000	Manskers Creek	DAVIDSON CO	RIVER	7.6	Oxygen, Dissolved	L	Municipal (Urbanized High Density Area)
TN05130202220_2000	Manskers Creek	SUMNER CO	RIVER	7.6	Oxygen, Dissolved	L	Municipal (Urbanized High Density Area)
TN05130202220_2000	Manskers Creek	DAVIDSON CO	RIVER	7.6	Sedimentation/Siltation	L	Municipal (Urbanized High Density Area)
TN05130202220_2000	Manskers Creek	SUMNER CO	RIVER	7.6	Sedimentation/Siltation	L	Municipal (Urbanized High Density Area)
TN05130202220_2000	Manskers Creek	DAVIDSON CO	RIVER	7.6	Escherichia coli	NA	Municipal (Urbanized High Density Area)
TN05130202220_2000	Manskers Creek	SUMNER CO	RIVER	7.6	Escherichia coli	NA	Municipal (Urbanized High Density Area)
TN05130202314_0300	Bosley Springs Branch	DAVIDSON CO	RIVER	1.5	Other anthropogenic substrate alterations	L	Municipal (Urbanized High Density Area)
TN05130202314_0300	Bosley Springs Branch	DAVIDSON CO	RIVER	1.5	Nitrate/Nitrite (Nitrite + Nitrate as N)	L	Municipal (Urbanized High Density Area)
TN05130202314_0300	Bosley Springs Branch	DAVIDSON CO	RIVER	1.5	Phosphorus (Total)	L	Municipal (Urbanized High Density Area)
TN05130202314_0300	Bosley Springs Branch	DAVIDSON CO	RIVER	1.5	Escherichia coli	NA	Municipal (Urbanized High Density Area)

TN05130202314_0400	Sugartree Creek	DAVIDSON CO	RIVER	4.3	Other anthropogenic substrate alterations	L	Municipal (Urbanized High Density Area)
TN05130202314_0400	Sugartree Creek	DAVIDSON CO	RIVER	4.3	Phosphorus (Total)	L	Municipal (Urbanized High Density Area)
TN05130202314_0400	Sugartree Creek	DAVIDSON CO	RIVER	4.3	Nitrate/Nitrite (Nitrite + Nitrate as N)	L	Municipal (Urbanized High Density Area)
TN05130202314_0400	Sugartree Creek	DAVIDSON CO	RIVER	4.3	Oxygen, Dissolved	L	Municipal (Urbanized High Density Area)
TN05130202314_0400	Sugartree Creek	DAVIDSON CO	RIVER	4.3	Escherichia coli	NA	Municipal (Urbanized High Density Area)
TN05130202314_0700	Vaughns Gap Branch	DAVIDSON CO	RIVER	0.6	Nitrate/Nitrite (Nitrite + Nitrate as N)	L	Municipal (Urbanized High Density Area)
TN05130202314_0700	Vaughns Gap Branch	DAVIDSON CO	RIVER	0.6	Phosphorus (Total)	L	Municipal (Urbanized High Density Area)
TN05130202314_0700	Vaughns Gap Branch	DAVIDSON CO	RIVER	0.6	Other anthropogenic substrate alterations	L	Municipal (Urbanized High Density Area)
TN05130202314_0700	Vaughns Gap Branch	DAVIDSON CO	RIVER	0.6	Escherichia coli	NA	Sanitary Sewer Overflows (Collection System Failures)
TN05130202314_0750	Vaughns Gap Branch	DAVIDSON CO	RIVER	1.9	Other anthropogenic substrate alterations	L	Municipal (Urbanized High Density Area)
TN05130202314_0750	Vaughns Gap Branch	DAVIDSON CO	RIVER	1.9	Escherichia coli	NA	Municipal (Urbanized High Density Area)
TN05130202314_0800	Jocelyn Hollow Branch	DAVIDSON CO	RIVER	2	Nitrate/Nitrite (Nitrite + Nitrate as N)	L	Municipal (Urbanized High Density Area)
TN05130202314_0800	Jocelyn Hollow Branch	DAVIDSON CO	RIVER	2	Phosphorus (Total)	L	Municipal (Urbanized High Density Area)
TN05130202314_0800	Jocelyn Hollow Branch	DAVIDSON CO	RIVER	2	Escherichia coli	NA	Municipal (Urbanized High Density Area)
TN05130202314_1000	Richland Creek	DAVIDSON CO	RIVER	1.9	Phosphorus (Total)	L	Sanitary Sewer Overflows (Collection System Failures)
TN05130202314_1000	Richland Creek	DAVIDSON CO	RIVER	1.9	Nitrate/Nitrite (Nitrite + Nitrate as N)	L	Municipal (Urbanized High Density Area)
TN05130202314_1000	Richland Creek	DAVIDSON CO	RIVER	1.9	Sedimentation/Siltation	L	Municipal (Urbanized High Density Area)
TN05130202314_1000	Richland Creek	DAVIDSON CO	RIVER	1.9	Other anthropogenic substrate alterations	L	Municipal (Urbanized High Density Area)
TN05130202314_1000	Richland Creek	DAVIDSON CO	RIVER	1.9	Escherichia coli	NA	Sanitary Sewer Overflows (Collection System Failures)
TN05130202314_2000	Richland Creek	DAVIDSON CO	RIVER	6.7	Other anthropogenic substrate alterations	L	Municipal (Urbanized High Density Area)
TN05130202314_2000	Richland Creek	DAVIDSON CO	RIVER	6.7	Nitrate/Nitrite (Nitrite + Nitrate as N)	L	Municipal (Urbanized High Density Area)
TN05130202314_2000	Richland Creek	DAVIDSON CO	RIVER	6.7	Phosphorus (Total)	L	Municipal (Urbanized High Density Area)
TN05130202314_2000	Richland Creek	DAVIDSON CO	RIVER	6.7	Escherichia coli	NA	Sanitary Sewer Overflows (Collection System Failures)
TN05130202314_3000	Richland Creek	DAVIDSON CO	RIVER	4	Other anthropogenic substrate alterations	L	Municipal (Urbanized High Density Area)
TN05130202314_3000	Richland Creek	DAVIDSON CO	RIVER	4	Nitrate/Nitrite (Nitrite + Nitrate as N)	L	Municipal (Urbanized High Density Area)
TN05130202314_3000	Richland Creek	DAVIDSON CO	RIVER	4	Phosphorus (Total)	L	Municipal (Urbanized High Density Area)
TN05130202314_3000	Richland Creek	DAVIDSON CO	RIVER	4	Escherichia coli	NA	Municipal (Urbanized High Density Area)

Appendix A

Millersville's

Water Quality Buffer Zone Policy

Section I - Description

A water quality buffer zone is a strip of undisturbed native vegetation, either original or re-established, that borders streams and rivers, ponds and lakes, wetlands, and seeps. Buffer zones are most effective when stormwater runoff is flowing into and through the buffer zone as shallow sheet flow, rather than in concentrated form such as in channels, gullies, or wet weather conveyances. Therefore, it is critical that the design of any development include management practices, to the maximum extent practical, that will result in stormwater runoff flowing into and through the buffer zone as shallow sheet flow.

Buffer zones protect the physical and ecological integrity of water bodies from surrounding upland activities in the following ways:

- filtering excess amounts of sediment, organic material, nutrients and other chemicals;
- providing flood protection;
- reducing storm runoff velocities;
- protecting channel bank areas from scour and erosion;
- providing shade for cooling adjacent water; which allows waters to hold a greater level of dissolved oxygen; and
- providing leaf litter and large woody debris important to aquatic organisms.

Section II – Intent

The intent of this policy is to protect and maintain the native vegetation in riparian areas by implementing specifications for the establishment, protection and long-term maintenance of water quality buffers zones along all intermittent and perennial stream waterways and wetlands, in or adjacent to new development and significant redevelopment within our jurisdictional authority. This policy serves to clarify the requirements for streamside water quality buffers.

Section III - Design Standards for Water Quality Buffer Zones

A water quality buffer zone is required along all perennial and intermittent stream waterways and wetlands as identified on a 7.5-minute USGS quadrangle map, or as determined by the Tennessee Department of Environment and Conservation or Millersville's Public Works Department. The buffer width shall be calculated as follows:

Option #1

- A) In areas where a floodway profile has been computed as part of an approved flood study, the buffer zone shall be the width of the floodway plus at least fifty (50) feet perpendicular from the edge of the floodway on each side of the waterway, or one hundred (100) feet perpendicular from the top of bank on each side of the waterway, whichever is greater.
- B) In areas where a floodway profile has not been computed as part of an approved flood study, the buffer zone shall be at least fifty (50) feet perpendicular from the top of bank on each side of the waterway.
- C) When delineated wetland or critical areas extend beyond the edge of the required buffer zone width, the buffer zone shall be adjusted so that the buffer zone consists of the extent of the delineated wetland plus 25 feet extending perpendicular beyond the wetland edge.

Option #2

- A) In areas where there has been an approved flood study, the buffer zone width shall be at least one hundred (100) feet perpendicular from the top of bank on each side of the waterway.
- B) In areas where there has not been an approved flood study, the buffer zone shall be at least fifty (50) feet perpendicular from the top of bank on each side of the waterway.
- C) When delineated wetland or critical areas extend beyond the edge of the required buffer zone width, the buffer zone shall be adjusted so that the buffer zone consists of the extent of the delineated wetland plus 25 feet extending perpendicular beyond the wetland edge.

Water quality buffer zone width adjustment:

- A) If there are 15% to 24% slopes which are within the required buffer zone width, the buffer width must be adjusted to include an additional 20 feet.
- B) If there are 25% or greater slopes which are within the required buffer zone width, the buffer width must be adjusted to include an additional 50 feet.
- C) If the adjacent land use involves drain-fields from on-site sewage disposal and treatment system (i.e., septic systems), subsurface discharges from a wastewater treatment plant, or land application of bio-solids or animal waste, the buffer zone width must be adjusted to include an additional 50 feet.
- D) If the land use or activity involves the storage of hazardous substances or petroleum facilities, the buffer zone width must be adjusted to include an additional 100 feet.
- E) If the land use or activity involves raised septic systems or animal feedlot operations, the buffer zone width must be adjusted to include an additional 200 feet.
- F) If the land use or activity involves solid waste landfills or junkyards, the buffer zone width must be adjusted to include an additional 250 feet.

Section III - Water Quality Buffer Zone Management and Maintenance

The function of the water quality buffer zone is to protect the physical and ecological integrity of the waterway, to reduce flooding potential, and to filter runoff from residential and commercial development. The buffer zone vegetative target is undisturbed native vegetation.

- A) Management of the water quality buffer zone includes specific limitations on alteration of the natural conditions. The following practices and activities are restricted within the water quality buffer zone, except with prior approval by the Millersville Public Works Department:
 - 1) Clearing or grubbing of existing vegetation;
 - 2) Soil disturbance by grading, stripping, or other practices;
 - 3) Filling or dumping; and
 - 4) Use, storage, or application of pesticides, herbicides, and fertilizers.
- B) The following structures, practices, and activities are permitted in the water quality buffer zone, subject to the prior approval of the Millersville Public Works Department and the following specific design or maintenance features:
 - 1) Stream crossings, paths, and utilities
 - a) An analysis needs to be conducted to ensure that no economically feasible alternative is available;
 - b) The right of way should be the minimum width needed to allow for maintenance access and installation;
 - c) The angle of a crossing shall be perpendicular to the stream or buffer in order to minimize clearing requirements;
 - d) The minimum number of crossings should be used within each development, and no more than one crossing is allowed for every 1,000 linear feet of buffer zone. Where possible, the design of roadways and lots within a development should be aligned such that all streams are either to the rear or the side of individual lots, never along the front.
 - 2) Individual trees within the water quality buffer zone may be removed if in danger of falling, causing damage to dwellings or other structures, or causing blockage of the stream.

The root wad or stump should be left in place, where feasible, to maintain soil stability.

- C) All site development plans and plats prepared for recording shall:
- 1) Show the extent of any water quality buffer zone on the subject property by metes and bounds and be labeled as "Water Quality Buffer Zone";
 - 2) Provide a note to reference any water quality buffer zone stating, "There shall be no clearing, grading, construction or disturbance of soil and/or native vegetation except as permitted by the Millersville Public Works Department"; and
 - 3) Provide a note to reference any protective covenants governing all water quality buffer zones stating, "Any water quality buffer zone shown hereon is subject to protective covenants which may be found in the land records and which restrict disturbance and use of these areas."
- D) All water quality buffer zones must be protected during development activities. Prior to the initiation of development activities, ensure adequate visibility of the water quality buffer zones by staking and flagging. Permanent boundary markers, in the form of signage approved by the Millersville Public Works Department, shall be installed prior to the completion of the development activities.
- E) Stream banks and other areas within the water quality buffer zone must be left in a stabilized condition upon completion of the development activities. The vegetative condition of the entire streamside water quality buffer must be monitored and landscaping or stabilization performed to repair erosion, damaged vegetation, or other problems identified. Only native vegetation may be used in conjunction with stabilization activities. A guide to selecting native vegetation can be found at www.tva.com/river/landandshore/stabilization/plantsearch.htm, or obtained by contacting the Millersville Public Works Department.
- All landscaping or stabilization activities within the water quality buffer zone must have prior approval by the Millersville Public Works Department. In addition, performing work in and around waters of the state may require coverage under a state and possibly a federal permit. Contact the nearest Tennessee Department of Environment and Conservation, Division of Water Pollution Control environmental assistance center for more information on whether a proposed activity requires a permit.
- F) All water quality buffer zones shall be maintained through a declaration of protective covenant, which is required to be submitted for approval by the Millersville Public Works Department. The covenant shall be recorded in the land records and shall run with the land and continue in perpetuity.
- G) All lease agreements must contain a notation regarding the presence and location of protective covenants for water quality buffer zones, and which shall contain information on the management and maintenance requirements for the water quality buffer zones for the new resident.

Section IV - Waivers/Variances

- A) This water quality buffer zone policy shall apply to all proposed development except for a development which prior to the effective date of this ordinance:
- 1) Is covered by a valid, unexpired plat in accordance with development regulations;
 - 2) Is covered by a current, executed public works agreement;
 - 3) Is covered by a valid, unexpired building permit; or
 - 4) Has been granted a waiver in accordance with current development regulations.
- B) The Millersville Public Works Department may grant a variance for the following:
- 1) Those projects or activities where it can be demonstrated that strict compliance with the ordinance would result in practical difficulty or financial hardship; or
 - 2) Those projects or activities serving a public need where no feasible alternative is available;
- or

- 3) The repair and maintenance of public improvements where avoidance and minimization of adverse impacts to wetlands and associated aquatic ecosystems have been addressed.
- C) Waivers for development may also be granted in two additional forms, if deemed appropriate by the Millersville Public Works Department:
- 1) The water quality buffer zone width may be relaxed and permitted to become narrower at some points as long as the width is not reduced to less than (35) feet perpendicular from the top of bank, and the overall average width of the buffer meets the minimum requirement.
 - 2) The Planning Department may offer credit for additional density elsewhere on the site in compensation for the loss of developable land due to the requirements of this ordinance. This compensation may increase the total number of dwelling units on the site up to the amount permitted under the base zoning.
- D) The applicant shall submit a written request for a variance to the Millersville Public Works Department. The application shall include specific reasons justifying the variance and any other information necessary to evaluate the proposed variance request. The Millersville Public Works Department may require an alternatives analysis that clearly demonstrates that no other feasible alternatives exist and that minimal impact will occur as a result of the project or development.
- E) When considering a request for a variance, the Millersville Public Works Department may require additional information such as, but not limited too, site design, landscape planting, fencing, the placement of signs, and the establishment of water quality best management practices in order to reduce adverse impacts on water quality, streams, and wetlands.

Section V - Conflict with Other Regulations

Where the standards and management requirements of this buffer ordinance are in conflict with other laws, regulations, and policies regarding streams, steep slopes, erodible soils, wetlands, floodplains, timber harvesting, land disturbance activities or other environmental protective measures, the more restrictive requirements shall apply.



PUBLIC EDUCATION/OUTREACH AND INVOLVEMENT/PARTICIPATION
(SECTION 4.2.1 AND 4.2.2)

(Question 3)

Supporting Materials

Question B and D



10 Water Tips

-  Use fertilizers sparingly and sweep driveways, sidewalks and roadways.
-  Never dump anything down storm drains.
-  Plant grass or plants on the bare spots in your yard.
-  Compost your yard waste.
-  Avoid pesticides.
-  Direct downspouts away from paved surfaces.
-  Take your car to the car wash instead of washing it in the driveway.
-  Check car for leaks, and recycle motor oil.
-  Pick up after your pet.
-  Have your septic tank pumped and system inspected regularly.

How Can I make a difference ?

There are many small steps that can be taken at home to help reduce pollution.

1. Check automobiles for leaks—

Each year millions of gallons of used motor oil are disposed of improperly by being spilled or poured onto the ground or directly down storm drains. Did you know that one pint of oil can cause an oil slick that will cover the area the size of a football field? Low concentrations of other vehicle fluids can also cause substantial damage to waterways by simply leaking onto the roadway or your driveway.

2. Take your vehicles to car washes—

If you are washing your vehicle on your driveway or street, all of the wash water runs down a curb and into the nearest storm drain which leads right into a river or stream. Soap and detergents can impair waterways with ingredients such as phosphorus and other harsh cleaning chemicals. The remaining rinse water usually contains pollutants such as oils and grease, suspended solids, heavy metals, and other toxic substances. This problem can be especially harmful if a vehicle is washed on the pavement.

Collected dust particles from dirt, brake wear, engine leaks and other sources that collect on your car or truck's surface will wash into nearby waterways.

If you must wash off your vehicle, consider doing it on a part of your yard where the grass and/or soil can serve as a natural filter to absorb pollutants. The area that you select to clean your vehicle on is important. Find a grass, gravel, or porous area that will absorb the wash water rather than carrying it to a storm drain.

Remember these the next time you decide NOT to wash a vehicle at a commercial facility: Use environmentally safe products. Water with soap will not be treated if dumped down a storm drain. Use low-volume or pressure to reduce over spraying and wasting water. Consider using rain barrels to collect rainwater that could be reused to wash vehicles. Wash a vehicle **ONLY** when needed.

3. Maintain a healthy lawn without polluting—

Maintaining a healthy yard is important to most residents. Excess fertilizer and pesticides can wash off lawns when it rains. Here are some tips to follow when maintaining your lawn that prevent water pollution while

keeping a yard green.

Fertilizer Application

- Avoid fertilizing in drought conditions and when heavy rain is predicted.
- Use slow-release forms of nitrogen.
- If fertilizer is spilled on paved surfaces, sweep it up and apply it to the lawn.
- Irrigate the lawn to minimize runoff.

Pesticide Application

- Read the pesticide label BEFORE you handle or apply.
- Avoid applying pesticides when rain is predicted.

Grass and Yard Clippings

- Don't blow grass clippings and leaves in the street or down a storm drain! These extra nutrients can reduce oxygen levels in water and potentially cause fish kills.
- Recycle clippings.
- Use a mulching mower to reduce grass clippings.
- Compost plant clippings, leaves, grass clippings and other plant material or bag them for curbside pick-up.

Prevent Erosion

- Schedule grading projects for dry weather.
- Cover bare areas with plants or mulch.
- Leave vegetation along stream banks undisturbed.
- Cover all storm drains before hydro-seeding an area.

Equipment Maintenance and Clean Up

- Don't wash equipment where wastewater can drain to an impervious surface or storm drain.
- Dispose of old oil, gasoline and yard chemicals properly.
- Don't litter. Cover your load.
- Don't use cleaning chemicals where wastewater can drain to impervious surfaces or a storm drain.

What You Can Do To Report Polluters

Call 911 **only** if there is a LIFE SAFETY EMERGENCY SPILL. The fire department can report to the scene and contain a spill.

Call the Millersville Police Department at **(615) 859-2758** to report illegal dumping. Be sure to get any vehicle information such as make, model, year and license plate number.

Call the Public Works at (615) 859-0880 to report clogged catch basins. Call Codes Office for illicit discharges into the street or storm drain at (615) 859-0880. Rain water is the **ONLY** substance that should go down any storm drain.

WHAT CAN I DO?



POLLUTION PREVENTION

Stormwater
Management

Phone: 615-859-0880
Fax: 615-851-1825

Rain Gardens Make a Difference in Water Quality

Why Plant a Rain Garden

Every time it rains, fertilizers, pesticides, debris and other pollutants wash across lawns and driveways and down streets into the nearest storm drain. From there they go directly into a river, lake or stream. Most pollution comes from storm water runoff. Planting a rain garden reduces pollution while giving you a garden that is easy to maintain and needs little or no watering.

About Rain Gardens

Planting a rain garden on your property is one way to conserve water, reduce your monthly water bill and help protect our waterways at the same time. All that is needed is some basic information, a little imagination and the space on your property to build a rain garden.

How Rain Gardens Work

A rain garden receives storm water runoff water from roofs or other hard surfaces such as driveways. The rain garden holds the water on the landscape so that it can soak into the ground instead of flowing into a street and down a storm drain. The plants, mulch and soil in a rain garden combine natural physical, biological and chemical processes to remove pollutants from runoff.

An effective rain garden depends on water infiltrating the soil of the garden. Water should stand in a rain garden no longer than 24 hours after the rain stops. Mosquitoes cannot complete their breeding cycle in this length of time, so the rain garden should not increase mosquito populations at all.



Multiple Benefits from Rain Gardens

How to Create a Rain Garden

Constructing a

rain garden is easy, but it requires lots of shovel work when built by hand. Use the assistance of others to prepare and plant your rain garden. Teamwork reduces the amount of time it takes to construct a rain garden. It can be created alone, but if neighbors and friends are asked to join then they can learn the "hands on" value of a rain garden. Here are the main steps to creating a rain garden in your yard.

1. Use rope to layout the boundary of the rain garden.

A rain garden should be curvy in shape and is best situated with the longest length perpendicular to the slope of the land.

While there are no hard rules, the size of the roof area and the infiltration rate of the soil are keys to deciding how big to make a rain garden. The larger the roof area and the slower that water infiltrates into the soil the more area of rain garden needed.

2. Once the rain garden is laid out, it is time to start digging.

The deepest ponding depth in the rain garden should be about 6 inches.

Begin the digging by removing soil in the rain garden so that the deepest part is about 8 -10 inches deep.

The bottom of the rain garden should be as level as possible.

The extra soil removed from the rain garden should be used on the downhill side of the rain garden to create a berm, an earthen barrier, that will keep the water in the rain garden.

The top of the berm should not be higher than the uphill edge of the rain garden.

3. A shallow swale or corrugated drain pipe should be set up to carry the water from the roof downspout to the rain garden.



Corrugated pipe can be buried or above ground.

The land should slope down to the rain garden area to ensure that water does not stand anywhere around the foundation of the house.

4. Mix organic matter into the soil within the rain garden by spreading 2 to 4 inches of compost over the area and mixing the organic matter in with the existing soil. If the soil is acidic (has a low pH), lime should also be added to neutralize the pH of the soil.

For soils with high clay content, it may be beneficial to remove about 1-2 feet of the soil and replace it with a more porous "rain garden soil".

5. Establish a grass or groundcover border along the upper edge of the rain garden to slow down the runoff water as it enters the rain garden, and do the same over the berm to stabilize it as a border of the rain garden.

6. Within the rain garden, plant drought tolerant, wet tolerant, hardy plants such as many of the native plants found in low areas.

Ornamental grasses, shrubs and self-seeding perennials are good choices.

7. Once plants are in place, the rain garden area should have a good covering of mulch put over it. Lighter mulches such as pine bark and straw will float and may be washed away to the edges in the rain garden, so better mulch choices for a rain garden are more dense materials such as pine straw, wood chips or shredded wood.

8. Remove weeds on a regular basis as the landscape plants grow, and replenish mulch as needed. As the plants in the rain garden mature, there will be less need for mulch and weeding.

Rain gardens should be relatively low maintenance

TRASH / DEBRIS / ILLEGAL DUMPING



Site in the City of Millersville

if the correct plants are chosen.

Common forms of litter (or trash) include aluminum cans, plastic bags and bottles, paper products, household hazardous wastes, motor oil, used food containers, cigarette

butts, unwanted food, diapers and more. Litter can collect on top of drains, causing potential flooding by not allowing water to enter fast enough during a storm. Smaller debris or non-visible pollutants can wash into storm drains that drain to rivers, lakes and streams. When litter is washed into creeks and streams, it can impact aquatic life. This pollution can have harmful effects on drinking water supplies, recreational use, and wildlife. Make sure that your trash is properly disposed of and never litter. If you spot trash and debris in your neighborhood, pick it up and dispose of it properly! Never rinse it down the storm drain by hosing an area. Never use a broom or a leaf blower to push debris down a drain.

Maintain your driveway to prevent dirt, gravel and other forms of pollution to reach the public way. Storm water running across the road will end up in a storm drain or drainage ditch and eventually to one of our impaired streams.

To help R.I.D. Millersville of illegal dumping and other forms of pollution, REPORT what you see to the police department at 615-859-2758. Remember to get the license number of vehicles dumping illegally.

Together we can stop it!

ABOUT THIS BROCHURE...

This brochure is one of a series of brochures dedicated to raising awareness of pollution prevention to protect water quality. The following landscaping practices will help minimize water pollution while providing your customers a healthy and attractive lawn and landscape.

PROFESSIONAL LANDSCAPING ASSOCIATIONS

Georgia Green Industry Association (GGIA) (www.ggia.org)

Georgia Turfgrass Association (GTA) (www.turfgrass.org)

Metro Atlanta Landscape & Turf Association (MALTA)
(www.malta-inc.org)

Professional Lawn Care Association of America (www.plcaa.org)

Southern Nursery Association (SNA) (www.sna.org)

PUBLICATIONS

2002 GA Pest Control Manual (www.ent.uga.edu/pest2002/)

Grasscycling (<http://georgia.earth911.org/usa/master.asp?s=lib&a=organics/mow/grasscycling.asp>)

UGA Cooperative Extension Service publications
(www.ces.uga.edu/pubs/pubsubj.html)

UGA's Environmentally Friendly Landscaping Practices
(www.ces.uga.edu/Agriculture/horticulture/H-00-060.htm)

UGA's Xeriscaping Guide (www.ces.uga.edu/pubcd/B1073.htm)

Special thanks to

Rose Mary Seymour, Ph.D., P.E. of the University of Georgia, College of Agricultural and Environmental Science, Biological and Agricultural Engineering, Griffin Campus.

Clean Water Campaign
40 Courtland Street, NE
Atlanta, Georgia 30303



Solutions to Water Pollution for the COMMERCIAL LANDSCAPING & LAWN CARE INDUSTRY



ABOUT THIS BROCHURE

Did you know that some of your landscaping and/or lawn care practices may not be as “green” as you think? Lawns and landscaped areas have the potential to be sources of water pollutants such as nutrients, pesticides and organic materials.

For more information about water pollution visit www.cleanwatercampaign.com

Design and Installation



- Design a landscape that reduces runoff and encourages natural infiltration of rain.
 - Minimize impervious areas.
 - Do not allow bare soil areas in the landscape.
 - Incorporate existing native vegetation into the landscape design when possible and select plants best adapted to the local climate, soils and growing conditions.
 - Choose turf grass that is heat and drought tolerant.
- Protect streams and waterways and reduce erosion by leaving an undisturbed vegetative buffer along stream banks.
- Do not plant hard-to-mow areas such as steep slopes in turf grass. Use ground covers, trees, shrubs or other perennials to reduce plant maintenance.
- Schedule grading and excavation projects during dry weather.
- Mulch or seed areas that lie idle after land disturbing activities.
- Prior to hydro seeding, cover all storm drains to ensure the material does not get washed into streams, rivers and lakes.

Applying Fertilizer



- Apply only the amount of fertilizer that the turf or plant requires.
- Provide soil-sampling services to your customers to assure proper fertilizer and lime applications. Local Cooperative Extension Service offices can provide information on soil sampling procedures and where to get soil analysis services in your area.
- Do not apply fertilizer if heavy rain is predicted.
- Avoid fertilizing during periods of limited rainfall. Fertilizers are chemical salts and can dehydrate drought-stressed plant roots.
- Use slow-release forms of nitrogen, such as urea formaldehyde, IBDU or sulfur-coated urea.

- Calibrate fertilizer spreaders and application equipment to ensure proper rates are applied.
- Around waterways, use a deflector shield with spreaders. Avoid throwing granules in water and leave a three-foot buffer of unfertilized turf.
- Minimize the amount of fertilizer applied to non-target areas by closing the spreader when passing over paved surfaces.
- If fertilizer is spilled or lands on paved surfaces, sweep it up and apply it to the lawn.
- A light irrigation immediately after fertilizer application will move the nutrients into the soil so they won't wash off in the next storm.

Applying Pesticides



- Read the pesticide label BEFORE you purchase, handle or apply it. The label provides safe usage and storage information. It is dangerous and illegal to not use as directed.
- Obtain a Georgia Pesticide Applicators License. For more information go to www.agr.state.ga.us/.

Integrated Pest Management



- Integrated Pest Management (IPM), a practice used by leading professional landscape companies, integrates a regular monitoring program with correct diagnosis of pest problems. It promotes the use of cultural, biological and mechanical means of controlling pests. And, it advocates intervention with pesticides only when necessary to avoid serious damage.
- The key to a successful IPM program is frequent inspection and accurate diagnosis of pests.
- Consult your local county Cooperative Extension Service office for assistance in identifying pests or selecting the best management option.
- Cultural control methods include proper planting methods, plant selection and maintenance practices such as using pest-resistant plant varieties.
- Mechanical control consists of practices like trapping or destroying pests by hand, pruning infested plant parts and mulching to prevent weed growth.

Management of Grass Clippings



- Properly maintained turf grass improves soil structure, stabilizes topsoil and reduces erosion and runoff.
- Avoid mowing more than 1/3 of the grass length. This may warrant more frequent mowing or changing the mower height in certain seasons. Use a mulching mower when possible.
- Don't blow, sweep or dump grass clippings or leaves into the street, down storm drains or drainage ditches.
- Compost plant clippings, leaves, excess grass clippings and other plant material, or bag them for curbside pickup.
- Recycle grass clippings. Clippings can provide up to 30 percent of the total fertilizer needs.
- Mulching leaves into the turf with a mulching mower can also be beneficial.
- Reuse compost in your landscape maintenance. The use of compost improves soil texture and structure, moisture retention and adds valuable nutrients.

Consumer Education



- Tell your client the benefits of grass clipping recycling. Lawn clippings left on the ground can provide nutrients and lower the amount of fertilizer required.
- After each service visit, leave a ticket telling the customer what pests were detected, any other problems and recommendations for management. Explain in detail the corrective actions taken to ensure approval of the management practices used.
- Maintain membership(s) in a professional landscaping organization(s) to stay current on maintenance methods and the newest plant varieties available. Become a certified professional and advertise this fact to your customers.

Storm Water Pollution Prevention Why this is Important...

Most cities have two drainage systems—the sanitary sewer system and storm drain system. The storm drain system is designed to prevent flooding by carrying excess rainwater away from streets, homes, and businesses. Because storm water from a storm drain system is not usually treated, it serves the unintended function of carrying urban pollution into our streams and rivers.

This pamphlet tells you how to prevent pollution from entering our streams and rivers from polluted storm water.

Storm water runoff mixed with urban pollutants creates storm water pollution. The pollutants include: oil and other automobile fluids, paint, construction debris, yard and pet wastes, pesticides, and litter.

Polluted storm water flows through the storm drain system that takes water and debris straight from the streets and parking lots to our streams and rivers. Each day polluted storm water enters our streams untreated, leaving toxic chemicals in our waterways and tons of trash along their banks. Polluted storm water contaminates our streams and rivers, harms aquatic life and increases the risk of flooding. Overall, storm water pollution costs us millions of dollars per year.

For more information or assistance, call, e-mail or write:

Tennessee

Small Business Environmental Assistance Program
8th Floor, L&C Annex, 401 Church Street
Nashville, TN 37243-1551

1-800-734-3619

BGSBEAP@tn.us

<http://tn.gov/environment/ea/sbeap/>

Landscaping, Gardening and Pest Control Impacts

Landscaping, gardening, and pest control activities can be major contributors to storm water pollution. Sediment, yard wastes, over watering, pet wastes, and garden chemicals mixed with storm water pollutes our streams and rivers.

Also, when it rains fertilizers, pesticides, and herbicides are washed off of lawns and landscaped areas and enter our waterways. These chemicals not only kill garden pests, they also harm useful insects, poison fish, and contaminate ground and surface waters.

Leaves, grass clippings, and tree trimmings that are swept or blown into the streets and gutters also cause storm water pollution. These wastes clog catch basins, causing flooding of roads and streets. Leaves and grass clippings that are washed into the river start to decompose and absorb dissolved oxygen from water. If oxygen levels in the water become too low, aquatic animals die.

Best Management Practices

There are federal and state storm water regulations that require some Businesses to establish Best Management Practices (BMPs). Recent permitting requirements for local water facilities may result in greater scrutiny and enforcement of their environmental operations. The following Best Management Practices will help ensure cleaner streams and rivers across the State of Tennessee.

General Landscaping Tips

- *To protect stockpiles and materials from wind and rain-* Store them under tarps or secured plastic sheeting.
- *To avoid extra grading work and muddy runoff-* Schedule grading and excavation projects for dry weather.
- *To reduce water pollution-* Use temporary check dams or ditches to divert runoff away from storm drains.
- *To increase erosion control-* Plant fast-growing annual and perennial grasses, as these will shield and bind the soil.

Garden and Lawn Maintenance Tips

- Do not over water lawns. Conserve water by using irrigation practices such as drip irrigation, soaked hoses, or micro-spray systems.
- For cities that have curbside pickup, leave clipping and pruning wastes besides the street for pickup. Or, compost clippings at home and use compost around plants.
- Do not blow or rake leaves into streets, gutters or storm drains.
- Use organic or non-toxic fertilizers.
- Do not over fertilize and do not fertilize near ditches, streams, or other bodies of water.
- Store pesticides, fertilizers, and other chemicals in a covered area to prevent runoff.

Home and Garden Pesticide Alternatives

Only using a chemical to control pests is usually a temporary fix. A more common sense approach is needed for a long-term solution. It is called **Integrated Pest Management (IPM)**. Plan your “IPM” strategy in the following order:

A) Physical Controls

- Caulking holes
- Barriers
- Hand picking
- Traps

B) Biological Controls

- Predatory insects
- Bacterial insecticides

C) Chemical Controls – Last Resort Use:

- Less toxic products
- Insecticidal soaps
- Horticultural oils
- Dehydrating dusts
- Boric acid powder
- Pyrethrin based Insecticides

Pesticide

info

WHAT YOU SHOULD KNOW ABOUT PESTICIDES

City of Millersville
1246 Louisville
Highway
Millersville, TN
37072

Stormwater
Management
Department

Contact Person:
Karen Smith

(615) 859-0880
karen.smith@cityofmillersville.com

Visit us online at:
www.cityofmillersville.com

Storing pesticides safely

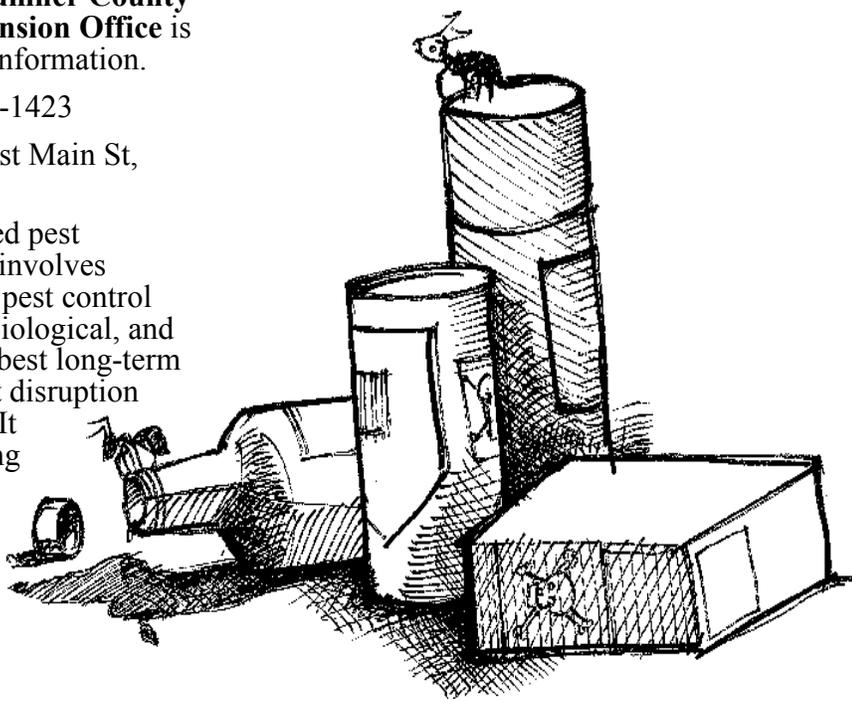
Improper pesticide storage and disposal can be dangerous to the health of you, your family and pets, and can harm the environment. To be safe, follow these recommendations:

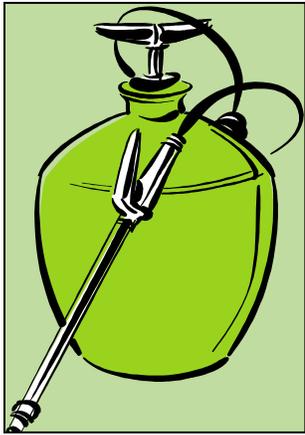
- Don't stockpile. Buy only enough pesticide to carry you through the use season. Consider ready-to-use products rather than concentrated solutions. Although they are more expensive per use, these products may be more practical if all you need is a limited amount of pesticide. Pesticides lose effectiveness over time. And you reduce storage problems.
- Look into solutions to your pest problems that call for less – or no – pesticide use. **Sumner County Agriculture Extension Office** is a good source of information.
- Follow all storage instructions on the pesticide label.
- Always store pesticides in the original containers.
- **The label has important information, including ingredients, directions for use, and first aid in case of accidental poisoning.**
- Never transfer pesticides to soft drink bottles or other containers. Children or others can mistake them for something to eat or drink.

Phone: (615) 452-1423

Location: 155 East Main St,
Gallatin, TN 37066

Ask about “integrated pest management.” IPM involves combining different pest control tactics – chemical, biological, and cultural – to get the best long-term results with the least disruption to the environment. It focuses on preventing pest problems in the first place so you don't need to use pesticides.





- Transparent tape applied over labels helps keep them legible. If you can't tell how old a container is or identify its contents, follow the advice on safe disposal in this handout.
- Store pesticides out of reach of children and pets. The best place is in a locked cabinet in a well-ventilated utility area or garden shed. Never store pesticides in cabinets near food, animal feed or medical supplies. Cap and put away pesticides immediately after each use.
- "Child-resistant" packaging does not mean "child-proof." You still must store pesticides properly, out of children's reach. Be sure to close containers tightly.
- Store flammable liquids outside your living area and away from ignition sources such as a furnace, vehicle, outdoor grill or gas-powered tools. Do not store containers where flooding is possible or in places where they might spill or leak into wells, drains, ground water, or surface water.

Safe disposal

- The best way to dispose of a small amount of excess pesticide is to use it. Apply according to directions on the product label. If you cannot use it, ask your neighbors if they can.
- Do not throw unused pesticides in the trash. If you can't finish using a pesticide, Sumner County has a household hazardous waste

collection program. Call (615) 452-1114 for more information.

- Never pour any leftover pesticides product down the sink, into the toilet, down a sewer or street drain or on the ground. Millersville's municipal storm sewer systems are not equipped to remove pesticide residues before entering waterways; these can harm fish, plants, and other living things.
- When empty, you should rinse the container carefully three times, draining the rinse water each time back into the sprayer or the container used to mix the pesticide. Then use the rinse water as a pesticide, following label directions. Replace the cap securely. (Do not puncture or burn a pressurized container like an aerosol – it could explode.) Once you have followed these steps, dispose of the container according to label instructions or according to state and local laws, whichever is stricter.
- Never reuse a pesticide container.



DID YOU KNOW?

In 2001, there were an estimated 6.5 million dogs in the United States. That's 6.3 billion pounds of poop per year!!

It would take a scoop 300 feet wide and 800 feet deep to dispose of all of that poop!

* Source: U.S. Pet Ownership and Demographics Source Book by the American Veterinary Medical Association.



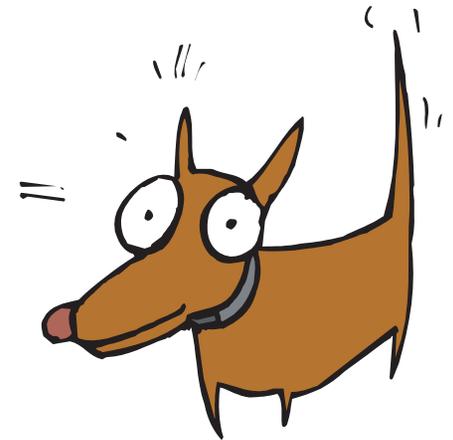
Stormwater Management
City of Millersville
1246 Louisville Highway
Millersville, TN 37072

Thanks to:



Clean Water Campaign
40 Courtland Street, NE
Atlanta, Georgia 30303
WWW.CLEANWATERCAMPAIGN.COM

Pick It Up...



It's Your Doodie!

THE PROBLEM

Pet waste can contaminate our rivers, lakes and streams. Pet waste contains harmful bacteria such as E. Coli and fecal coliform. Waters that contain a high amount of bacteria such as E. Coli are unfit for human contact. A single gram of pet waste contains an average of 23 million fecal coliform bacteria, some of which can cause disease in humans.



- ◆ Pet waste decays, using up dissolved oxygen and releasing compounds that are harmful to fish and other animals that rely on water.
- ◆ Pet waste contains nutrients that can cause excessive algae growth in a river or lake, upsetting the natural balance.

I WANT TO BE A RESPONSIBLE PET OWNER, BUT DOES THIS MEAN I HAVE TO PICK UP AFTER MY PET?



The bad news is...

Yes, you do have to “scoop the poop” but it’s a small price to pay to protect our water quality.

The good news is...

Whether in your yard or walking your dog, you can easily do the right thing. Purchase a “pooper scooper” or simply use a plastic bag. Many parks and apartment complexes provide special posts with “pet mitts” or bags to help you clean up after your dog. When finished, just place the waste in a garbage can. Everyone will be happier when you pick up after your pet!



WHY SHOULD I PICK IT UP?

Pet waste left on sidewalks, streets, yards or other open areas can be washed away and carried by rainwater into storm drains to nearby rivers, lakes and streams and cause many problems.



For more information visit www.cleanwatercampaign.com or call:

Karen Smith at (615) 859-0880

City of Atlanta
404-330-6040

DeKalb County
404-294-2878

Fulton County
404-730-8097

Cobb County
770-499-4136

Clayton County
770-961-8399

Gwinnett County
678-376-6929



ARE YOU A DO-IT-YOURSELFER?

YOU CAN PUT THE BRAKES ON WATER POLLUTION

Did You Know?

Each year millions of gallons of used motor oil are disposed of improperly: dripped, spilled or poured directly onto the ground or down storm drains.



It only takes four quarts, or about one oil change, of used motor oil to foul one million gallons of drinking water.



Many brake pads contain metals that wear away a little by little. The metal breaks down into dust each time you apply the brakes. Brake pads can contain as much as 20 percent copper, which is toxic to aquatic life at the base of the food chain. They also contain lead and zinc. (Source: US EPA)

BE A SOLUTION TO
WATER POLLUTION.

www.cleanwatercampaign.com

Stormwater Management
1246 Louisville Highway
Millersville, TN 37072
(615) 859-0880
www.cityofmillersville.com



Clean Water Campaign
40 Courtland Street, NE
Atlanta, Georgia 30303



PUT THE BRAKES ON WATER POLLUTION

TIPS FOR MAINTAINING OR
REPAIRING YOUR VEHICLE AT HOME



BY PREVENTING FLUIDS FROM REACHING THE STREET OR STORM DRAIN, YOU CAN PREVENT STORMWATER POLLUTION AND HELP PROTECT OUR RIVERS, LAKES AND STREAMS.



BE AWARE OF WHERE YOU WORK

- Any drips or spills on the ground can be carried away by rainwater to a storm drain and into a nearby river, lake or stream.
- Choose to work on a flat concrete surface where you can easily clean up accidental spills. Remember the phrase “keep it clean, drains to stream” when you work on paved surfaces.
- Never work on a vehicle in the street or near a storm drain.



FOLLOW THESE TIPS WHEN CHANGING YOUR OIL OR OTHER VEHICLE FLUIDS

- Use funnels or pumps when handling liquid products or wastes to avoid spills.
- Capture vehicle fluids in separate drip pans or containers. Properly recycle used oil, antifreeze and other vehicle fluids. Do not mix vehicle fluids.

- Use plastic tarps and drip pans if a car is leaking. Pour the oil collected on tarp back into a drip pan.
- Drain and recycle used oil filters. Poke holes in the filter and let it drain into your oil pan for several hours before you recycle.
- As an alternative, you can use kitty litter, sawdust or oil absorbent to clean spills. Apply it to the spill, sweep it up and dispose of the waste in the trash.
- If spills occur, use an absorbent pad to clean the spill. Squeeze the pad to wring out excess liquids. Place the used pad in a plastic bag and then dispose in the trash.
- Collect your used motor oil, antifreeze and oil filters in separate containers for transport to a nearby recycling station. Tires and batteries are some other items that can be recycled.



PUT THE BRAKES ON POLLUTION WHEN REPLACING BRAKE PARTS

- Many brake pads contain copper, which wears off as the pads wear and contributes to stormwater pollution.
- Don't hose down brake pads, rotors or drums.
- Use shop cloths to wipe as much brake dust as possible from the rotors and drums before using brake cleaner fluid. The shop cloths can be laundered and reused.
- Recycle cleaner fluid by using a drip pan. Reuse collected cleaner to clean rotors and drums.



WASH YOUR CAR AT A NEARBY CAR WASH

- Wash water from washing your car at home can contain detergents, metals, oil, sediment and other debris that can pollute nearby rivers, lakes and streams.
- For spot cleaning, wipe the vehicle with a damp cloth instead of washing it.
- Take your vehicle to a commercial car wash that recycles water. This will prevent detergents and other contaminants from being washed down a storm drain or drainage ditch.



DID YOU KNOW THE FOLLOWING CAN BE RECYCLED?

- Transmission fluid
- Used tires
- Brake fluid
- Used oil filters
- Car batteries
- Antifreeze
- Used motor oil

For the nearest location near you, call 1-800-CLEANUP or visit www.1800cleanup.org.



FOR MORE INFORMATION PLEASE VISIT

www.CleanWaterways.org

Stormwater Best Management Practices



*Restaurants and
Food Service Facilities*

Good Practices for Food Establishments

Restaurant activities can harm the environment if they are not careful with disposal and cleanup procedures. With proper training and education, restaurant personnel can prevent debris from entering storm drains, thus helping to improve the water quality in neighboring waterways.

This brochure will explain steps your food establishment can take to help protect water quality by keeping debris out of the storm drain and by preventing fats, oil, and grease from blocking the sanitary sewer lines.



Storm Drains and Sanitary Sewers

Storm drains are found in parking lots and in streets. Storm drains are engineered to gather and transport stormwater to our local waterways. Storm drain systems do not remove any pollutants from stormwater before it is discharged into streams and bayous. Only unpolluted water may be discharged to a storm drain!



Sanitary Sewers collect wastewater from indoor (toilets, sinks, dishwashing machines, and floor drains) and transports it to a sewage treatment plant for removal of pollutants.



"Only unpolluted water may be discharged to a storm drain!"



Fats, Oil, and Grease (FOG)

Regular maintenance and service of your sewer lines and grease trap interceptor will help prevent sewer overflows to the storm drain system.

- Do not pour FOG into floor drains, sinks, or into parking lot inlets.
- Maintain grease traps!
- Recycle grease and oil.
- Use drying agents (kitty litter or towels to clean up spills).

Proper Cleaning

- Always empty washwater and mop buckets into the mop sink.
- Clean floor mats and garbage cans in a mop sink.
- Regularly inspect for and clean trash from the outside of the restaurant.



Garbage Dumpsters

- Always use garbage bags or trash cans.
- Do not rinse out dumpster! Request that your waste hauler exchange the dirty dumpster for a clean one.
- Keep dumpster lids closed and secure.
- Ensure dumpster drain plug is securely in place.
- Keep the area around the dumpster clean.
- Avoid placing of liquids and FOG in the dumpster.
- Do not overfill the dumpster.



TENNESSEE STATE PERMITS

Who Needs One?

Anyone engaged in the business of removing and disposing of domestic septage from septic tanks, holding tanks, portable toilets or other similar sewage treatment or disposal facilities must obtain a septic tank pumping contractor license from the Tennessee Division of Groundwater Protection.

What Information Must I Provide?

Applicants must submit "Division of Groundwater Protection Application for Septic Tank Pumping Contractor Permit" form (Form CN-0765). The application includes the following information: the business name and address, owner name and address, owner's physical description, method of removing septage, method of transporting septage, the number of trucks and state of registration, vehicle license numbers, pump trucks' capacities, number of gallons pumped per year, types of waste to be hauled, and county where owner intends to conduct most business. The applicant must have written permission of the proper official when contents are to be disposed of at a public wastewater treatment plant or written permission of the landowner and disposal site operator when land application site is used, including a copy of the domestic septage site permits.

How Will My Application Be Processed?

Completed application forms and application fee should be sent to the Division of Groundwater Protection at the local county office, a regional Environmental Assistance Center, or the Nashville central office. A detailed review of the application is conducted, and the applicant is sent a notification letter when the review is complete. A permit is granted or denied within 45 days of the date of application. Permits expire on December 31 each year and must be renewed. Permits are not transferable and become invalid upon change of ownership.

What Fees Are Required?

Permit Fee: \$200

What Are My Rights and Responsibilities

After the Permit is Approved?

The applicant has the right to proceed with activities outlined in the approved permit. They must notify the Department of any changes to application information. The applicant is responsible for following all applicable state statutes and regulations. All pumper vehicles must display the name and address of the firm and operator and must have an identifying sticker provided by the Department. Applicants are responsible for maintaining monthly logs. Applicants have the right to appeal a permit that has been denied, suspended or revoked.

What Are the Division's Rights and Responsibilities After the Permit is Approved?

The Division has the right to inspect pumpers' monthly logs. The Division has the right to revoke, suspend, or deny the issuance of a permit to any applicant who violates the state statutes or departmental regulations. Any person who violates or fails to comply with the state statutes, rules, or regulations may be subject to civil penalties.

Whom Do I Contact For Applications, Assistance and Other Information?

Applicants may obtain applications and information from the Tennessee [Division of Ground Water Protection](#).

CITY OF MILLERSVILLE

Primary Business Address
1246 Louisville Highway
Millersville, TN 37072

Phone: 615-859-0880

Fax: 615-851-1825

Email: karen.smith@cityofmillersville.com

CITY OF MILLERSVILLE

REQUIREMENTS FOR SEPTIC CLEANING OPERATIONS



INFORMATIONAL BROCHURE

615-859-0880

MILLERSVILLE CODE OF ORDINANCES §82-155



KNOW THE LAW

Every person who operates equipment for the purpose of removing digested sludge from septic tanks, cesspools, and other sewage disposal installations on private or public property must register with the building inspector and furnish such records of work done within the corporate limits as may be deemed necessary by the health officer.

WHO NEEDS TO REGISTER?

- Every person who operates equipment for the purpose of removing digested sludge within the city limits of Millersville.

HOW DO I REGISTER?

- Registration forms are available at City Hall or you may print the PDF version online at: www.cityofmillersville.com
- Complete the form prior to the start of work and return it to the following address:

1246 Louisville Highway
Millersville, TN 37072

WHAT INFORMATION IS REQUESTED ON THE FORM?

- Project address
- Company performing work
- Tennessee State License number



- Contact name and number
- Explanation of work to be completed
- Why work has been requested

WHAT DO I DO WHEN WORK IS COMPLETE?

- You must furnish the city with records of the work completed.

WHAT ARE THE FEES?

- There are no city fees associated with this process.

WHAT CITY DEPARTMENT OVERSEES THIS PROCESS?

- The Codes Department for the City of Millersville

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AUTOMOTIVE REPAIR AND MAINTENANCE

Minimum Standards and BMP's

City of Millersville
Codes Administration
Stormwater Management



It is our water; take this serious-

Quick Facts From EPA Best Management Practices (BMP's)

- * Protect floor drains from discharges
- * Keep dumpster area clean and free of hazardous wastes
- * Never wash spilled material down storm drain or sanitary sewer drain
- * Use dry cleanup methods
- * Do not store drained vehicle fluids in open containers
- * Dispose of wastewater from closed-loop flushing systems as hazardous waste
- * Never wash parts outdoors
- * Do not dispose of spent parts-cleaning solution down the sanitary sewer, even if it is water-based
- * Keep waste disposal records as required by hazardous waste regulations for inspection
- * Change all fluids indoors
- * Use drip pans and transfer to appropriate containers as soon as possible
- * Have absorbent pads and booms on hand for spill response
- * Drain oil filters and other parts containing fluids before recycling them
- * Use closed-loop flushing systems to flush engines, radiators and transmissions to prevent discharges to the sanitary sewer
- * Avoid using spray-on solvent brake cleaner
- * Consider purchasing an aqueous brake washer
- * Use water-based cleaning products
- * Clean parts in a location equipped with drip pans, drain boards and drying racks



- * Avoid chlorinated solvents due to air quality and employee health concerns

To learn more about water pollution in industry, visit: www.epa.gov/ebtpages/water



Question E and F



2017 Fall Community Stream Cleanup Event

Sponsored by OHM and Hosted by the City of Goodlettsville

Goodlettsville, TN (September 9, 2017) – **OHM** and Goodlettsville are jointly sponsoring/hosting a community-wide stream cleanup event from 9:00 a.m. to noon. **All participants will meet at the Public Works Department @ 215 Cartwright Street in Goodlettsville for sign-in and supplies. We will then proceed to staging areas that will be within Goodlettsville.** Gloves, bags, t-shirts, water, grabbers and certificates are provided! Please bring rubber boots and rain gear if forecast. This is a rain or shine event! LUNCH is provided from our Sponsors **OHM** at **Ryan's in Rivergate, 12-3 pm.**

"OHM Advisors is a community advancement firm designing award-winning work across the architecture, engineering, and planning spheres. They believe in the power of multidisciplinary teamwork to find ideas that aren't just different – they're better. Nearly 400 employees throughout Tennessee, Michigan and Ohio partner with leaders at all levels of government, DOT's, school districts, universities, private companies and developers, in order to create great places for people."

OHM, the City of Goodlettsville and local volunteers, such as you, help to clean up and maintain the area's water resources. This cleanup event will be focusing on litter and debris removal from Madison Creek, Dry Creek Tributaries and Mansker's Creek due to the recent flooding events that has washed debris into our waterways and causing blockages. Public Works crew will be assisting with chainsaws and trucks.

"Last Spring your support broke all previous participation records, let's do it again!"

Citizens who are interested in local water quality and the health of our local water bodies are also encouraged to meet with the Mid Tennessee Stormwater Group. For more information on the program visit our website www.goodlettsville.gov or like us on Facebook @ Mid Tennessee Stormwater Group.

For more information, contact

Warren Garrett-Goodlettsville (615) 859-2740

CITY OF MILLERSVILLE AND GOODLETTSVILLE

COMMUNITY CLEANUP EVENT

SEPTEMBER 9, 2017

SPONSORED BY OHM ADVISORS, HOSTED BY MILLERSVILLE & GOODLETTSVILLE

THANKS TO ONE AND ALL for the outstanding event success through your continued participation on our annual stream/community cleanup events. This year we surpassed participation of all past events (42), with a total of 68 volunteers!

The community/stream cleanup event rocked with volunteers from Davidson County Democratic Chapter, OHM, Cornerstone Church, Pack 1200, local residents as well as friends of the city and employees from Millersville and Goodlettsville to assist with litter and debris removal! All volunteers were invited to a free lunch provided by OHM Advisors for their hard work, at the local Ryan's Buffet in Rivergate. This provided us the opportunity to network and fellowship with each other and to discuss future events and improve our custodial service to the residents through clean water and community education/participation.



WAIVER AND RELEASE OF CLAIMS

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4. Participant agrees to be photographed and have their likeness used by the City of Goodlettsville or City of Millersville for promotional use. No compensation given to/from either party.

Participant:

PRINT NAME

SIGN NAME

Warren Garrett

Warren Garrett

Marilyn Johnson

M. Johnson

Rob Dawson

Robert Dawson

John Hancock

John Hancock

James Harlet

J. Harlet

Sherry Montgomery

Sherry Montgomery

Andy Garrett

Andy Garrett

Rose Baker

Rose Baker

Leslie Bowman

Leslie Bowman

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PRINT NAME

SIGN NAME

Richard A. Vail

Richard A. Vail

Brandon Head

Brandon Head

Tim Lassiter

Tim Lassiter

Thomas King

Thomas King

Stephen Vail

Stephen Vail

BOB PELONI

Bob Peloni

MICHAEL BARR

Michael Barr

Melody Land Bischoff

Melody Land Bischoff

Eric Bischoff

Eric R. Bischoff

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PRINT NAME

SIGN NAME

STEVE CHIZER

[Signature]

Tammy Scalloni

[Signature]

JOE ARCURT

[Signature]

Harrison Hilt

[Signature]

Kayla Baker

[Signature]

Sengta Howse

[Signature]

Michael Howse

[Signature]

James Long

[Signature]

Shane Davis

[Signature]

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PRINT NAME

SIGN NAME

Troy Crowe

Troy D. Crowe

Jason Livik

Jason Livik

Wesley Blankenship

Wesley Blankenship

Kevin Thomas

Kevin Thomas

Kay Thomas

Kay Thomas

Tiffany McIntosh

Tiffany McIntosh

Tabatha M. Skipper

Tabatha M. Skipper

Gregg Edmonstone

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Troy Brady Ivester

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Participant:

PRINT NAME

SIGNATURE

Sandi Aldridge

Sandi Aldridge

Sheila Hobson

Sheila Hobson

Denver Schimming

[Signature]

Dalia Harmon

Dalia Harmon

~~James Sanchez~~

[Blank line]

~~Stephen Sanchez~~

[Blank line]

Robin Barnes

Robin Barnes

Ken Aldridge

Ken Aldridge

Jee Ann Mack

Jee Ann Mack

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PRINT NAME

SIGN NAME

Jordan Fernandes

[Handwritten signature]

Dorothy Jones

[Handwritten signature]

Deborah Stricklin

[Handwritten signature]

Kirsten Fernandes

[Handwritten signature]

Jasmine Black

[Handwritten signature]

[Blank line]

PARENTAL PERMISSION WAIVER AND RELEASE OF CLAIMS

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Participant:

MINOR'S NAME

Zephyr Bodily

PARENT/GUARDIAN SIGNATURE:

[Handwritten Signature]

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Participant:

MINOR'S NAME

Charlie Bowman

PARENT/GUARDIAN SIGNATURE:

Pat Bowman

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Participant:

MINOR'S NAME

Samin Jordan

PARENT/GUARDIAN SIGNATURE:

[Signature]

PARENTAL PERMISSION WAIVER AND RELEASE OF CLAIMS

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Participant:

MINOR'S NAME

Cameron Jai

PARENT/GUARDIAN SIGNATURE:

Richard A. Jai

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Participant:

MINOR'S NAME

GRACE BARR

PARENT/GUARDIAN SIGNATURE:



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MINOR'S NAME

Connor Green

PARENT/GUARDIAN SIGNATURE:

Jan Lin

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Participant:

MINOR'S NAME

Zachariah, Mikaila, Isabella, Ezra

PARENT/GUARDIAN SIGNATURE:

Roy D. Crowe

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Participant:

MINOR'S NAME

Winter Skipper, Aiyanna Skipper, Kerstin Skipper

PARENT/GUARDIAN SIGNATURE:

Garret M. Skipper

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Participant:

MINOR'S NAME

Jared Sanchez + Ethan Sanchez

PARENT/GUARDIAN SIGNATURE:

Dalia Harmon

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Participant:

MINOR'S NAME

Cameron Holladay

PARENT/GUARDIAN SIGNATURE:

Lee Ann Mark

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Participant:

MINOR'S NAME

Ty Tiyana Hunt Rylee A'oJedele

PARENT/GUARDIAN SIGNATURE:

Jamie Black



2018 Spring Stream Cleanup Event

Sponsored by OHM and Hosted by the City of Goodlettsville & Millersville

Goodlettsville, TN (June 9, 2018) – **OHM** and Goodlettsville are jointly sponsoring/hosting a community-wide stream cleanup event from 9:00 a.m. to noon. All participants will meet at the Public Works Department @ 215 Cartwright Street in Goodlettsville for sign-in and supplies. We will then proceed to staging areas that will be within Goodlettsville and Millersville. Gloves, bags, t-shirts, water, grabbers and certificates are provided! Please bring rubber boots and rain gear if forecast. This is a rain or shine event! (EXCEPT IF SEVERE WEATHER FORECAST) LUNCH is provided from our Sponsors **OHM** at Ryan's in Madison, 12-3 pm.

"OHM Advisors is a community advancement firm designing award-winning work across the architecture, engineering, and planning spheres. They believe in the power of multidisciplinary teamwork to find ideas that aren't just different – they're better. Nearly 400 employees throughout Tennessee, Michigan and Ohio partner with leaders at all levels of government, DOT's, school districts, universities, private companies and developers, in order to create great places for people."

OHM, the City of Goodlettsville, Millersville and local volunteers, such as you, help to clean up and maintain the area's water resources. This cleanup event will be focusing on litter and debris removal from Madison Creek, Dry Creek, Slaters and Mansker's Creek. Public Works crew will be assisting with supplies and trucks.

"Last Fall your support broke all previous participation records, let's do it again!"

Citizens who are interested in local water quality and the health of our local water bodies are also encouraged to meet with the Mid Tennessee Stormwater Group. For more information on the program visit our website www.goodlettsville.gov or like us on Facebook @ Mid Tennessee Stormwater Group.

For more information, contact

Warren Garrett-Goodlettsville (615) 859-2740

CITY OF MILLERSVILLE AND GOODLETTSVILLE

COMMUNITY CLEANUP EVENT

JUNE 9, 2018

SPONSORED BY OHM ADVISORS, HOSTED BY MILLERSVILLE & GOODLETTSVILLE

THANKS TO ONE AND ALL for the outstanding event success through your continued participation on our annual stream/community cleanup events. This Spring we enjoyed a wonderful turnout with 40 volunteers!

The community/stream cleanup event rocked with volunteers from Davidson County Democratic Chapter, OHM, Cornerstone Church, local residents as well as friends of the city and employees from Millersville and Goodlettsville to assist with litter and debris removal! All volunteers were invited to a free lunch provided by OHM Advisors for their hard work, at the local Ryan's Buffet in Rivergate. This provided us the opportunity to network and fellowship with each other and to discuss future events and improve our custodial service to the residents through clean water and community education/participation.

CITY OF MILLERSVILLE AND GOODLETTSVILLE



EVENT TOTALS:

Slaters Creek (Millersville)

6 car tires, Misc. car parts, 1 car battery, broken house furniture, Misc. lumber, 2 bikes, childrens toys, house siding and lots of plastic trash bags. **TOTAL----- 345 lbs.**

Dry Creek Tributary @ Hasty Ln. (Goodlettsville)

Brush Debris and dead fall removal, Plastic PVC Pipe, 2 bags litter **TOTAL-----2,030 lbs.**

Mansker Creek @ Northcreek (Goodlettsville)

Metal beach chair, Rug, Plastic PVC Pipe, Trash Can, Brush and Debris, 200 Gallon Plastic Tank, Wood Fence Frame, 5 Car Tires, 22 Trash Bags, Concrete Post, 2 Metal Wheels **TOTAL-----400 lbs.**

TOTAL OF COMBINED LOCATIONS-----2,775 LBS.

THANK YOU ALL!

WAIVER AND RELEASE OF CLAIMS

This Waiver, Indemnity Agreement and Release of Claims, is given into this 9th day of June 2018, by the below signed Participant to the Sumner County, City of Millersville, City of Goodlettsville, Cumberland River Compact, the Metropolitan Government of Nashville and Davidson County, TWRA, American Rivers, and Metro Beautification and Environment Commission.

WHEREAS, Participant seeks to participate in a project (the "Project") involving the clean-up of various City of Goodlettsville rights-of-way.

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- Participant agrees to be photographed and have their likeness used by the City of Goodlettsville for promotional use. No compensation given to/from either party.

NAME (PLEASE PRINT LEGIBLY)	ORGANIZATION/AFFILIATION	CERTIFICATE REQUESTED	VERIFICATION OF CREDIT HOURS REQUESTED
CLARKE WILLEY	TPM GROUP	N/A	
Lucas Barnes			
Walt Murf			
John Sizel			
ROSE BARBER	RESIDENT		
Paul Daults	Worrel fa club	no thanks	
Michael Barber	Millersville		
DEANNA TRAM	Millersville		
BRUCE TRAM	Millersville		
Paula Hepp	OHM		
Scott Stov	OHM		
DAVE HEPP	OHM		
JAEED HAYS	OHM		
Emily Kerns	OHM		
Matthew Brown	OHM		

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Deanna Hillbrand	OHM		
Sheila Johnson			
DEVER SETHMINKS			
Judy Baker	Cornerstone		
Max Baker	Cornerstone		
JUDANNE DUFFY	Cornerstone		
Samantha Rebovin	Cornerstone		
CHRISTIA LYBIE	CORNERSTONE		
Yasmeen Farooq	CORNERSTONE		
Dylan Farooq	CORNERSTONE		
DYANNE FAROOQ	CORNERSTONE		
Dwain Anderson	"		
Harrison Hill	OHM		
Michael Wharton	Cornerstone		
Kelly McDaniel	Cornerstone		

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Participant:

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PARENT/GUARDIAN SIGNATURE:

[Signature]

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Participant:

MINOR'S NAME

Dyon + Dyonne Farooq

PARENT/GUARDIAN SIGNATURE:

Yasmeen Farooq



Professional Development Hands-on Teacher Workshop Grades K-8 Saturday, September 30, 2017

Millersville Community Center
1181 Louisville Hwy
Millersville, TN 37072

September 30, 9:00am-4:00pm (Lunch Provided).

**Engaging, hands-on STREAM activities for you and your students!
Learn about Tennessee's water resources and
Lead your students to be environmental stewards.**

Who is invited? Anyone who provides education to students in grades K-8; public/private teachers and pre-service teachers-in-training; educational staff of parks, museums and educational centers.

- **Pre-registration deadline: September 26th.**
- No charge, but **PLEASE** let us know in if your plans change.

Receive classroom materials and learn how to use them:

- *Project WET Curriculum & Activity Guide*, online resources, and certification as a trained Project WET educator
- TN watershed maps and posters
- *Discover the Waters of Tennessee* (designed for grades 3-5)
- Activity supplies
- Correlations to TN science curriculum standards and common core available.
- Receive 6 PDH for participation.



TO REGISTER, call or email Jennifer Watson (Jennifer.watson@gallatin-tn.gov) (615)451-5965 provide the following information:

- **Your name**
- **Email address**
- **School** or other association, grade and subject level,
- **YOUR CELL PHONE NUMBER** for any last minute updates from us.
We will not share your phone number or retain it after the workshop.

AP Austin Peay
State University
Center of Excellence
for Field Biology

Sign-In Sheet

Date: 30 Sept 2017
 Facilitator:
 Location: Millersville

Check all that apply:

Name (Please Print)	Email (Please Print)	Check all that apply:						
		Pre-K Teacher	Elementary Teacher	Middle Teacher	High School Teacher	College Instructor	Pre-service (also check intended grade level)	Non-Formal Educator (Ranger, etc.)
1 Vikki Bradach	vbradach@gmail.com		X					X
2 Jenny Biggs	jbiggs2@utk.edu							X
3 Lee Anne Faust	lfaust1@utk.edu				X	X		X
4 Delana wells	dwlbookworm@live.com							X
5 Jeanette Scott	paul-scott@comcast.net	X	X	X				
6 Sherry Montgomery	smontgomery@gordlettsville.gov							X
7 Laura Puryear	laura.puryear@volstate.edu							X
8 Eric Fann	faune@rcschools.net		X	X	X			
9 Chelsea Broersma	Chelsea.Broersma@yahoo.com	X	X					
10 Chris Hooper	Christopher.hooper@summer schools.net			X				
11 Dianna Johnson	dianna.johnson@california.gov							X
12 Warren Garrett	wgarrett@gordlettsville.gov							X
13								
14								
15								
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23								

City Public Works



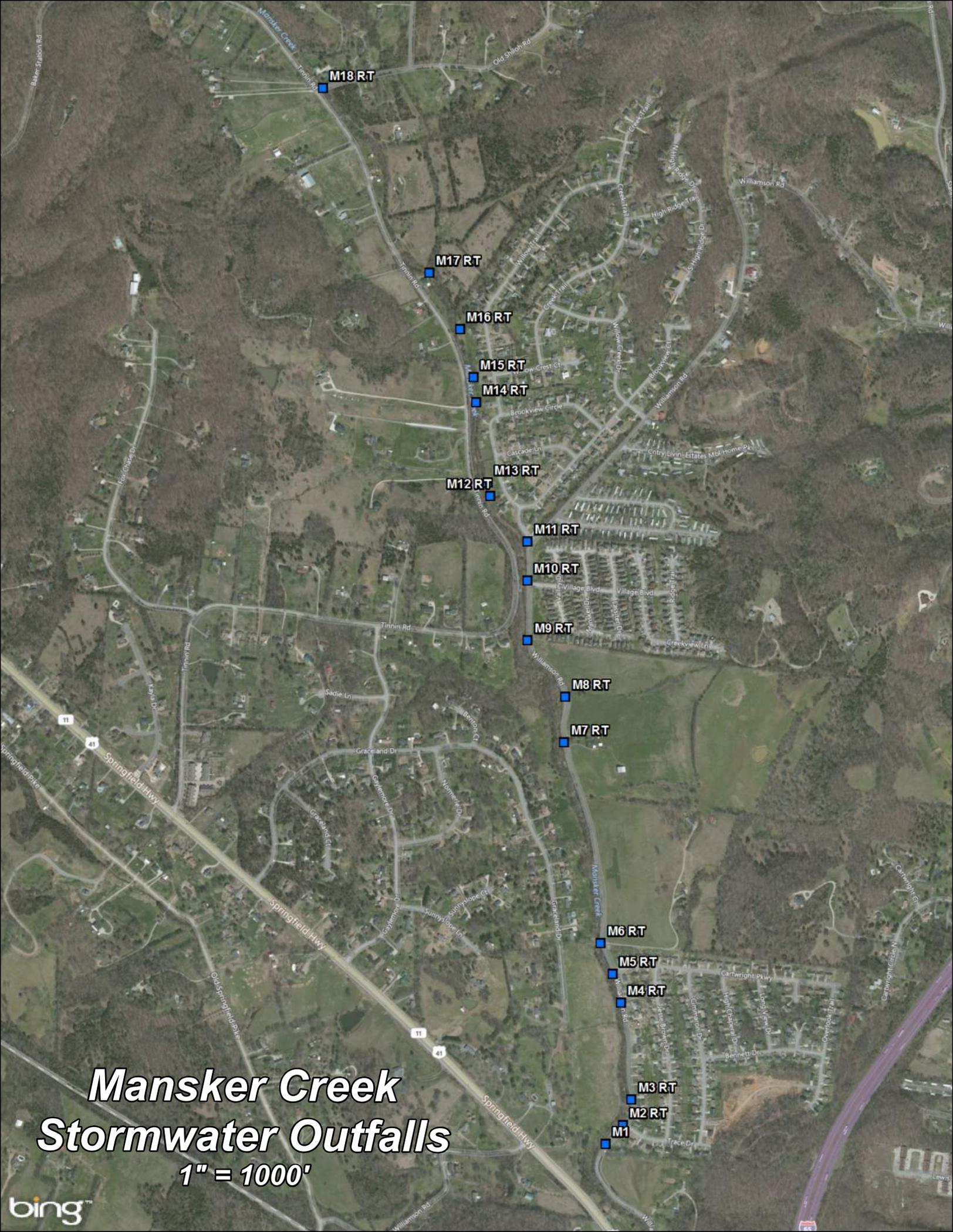


ILLICIT DISCHARGE DETECTION AND ELIMINATION (SECTION 4.2.3)

(Question 4)

Supporting Materials

Question A



Mansker Creek Stormwater Outfalls

1" = 1000'

Outfall Reconnaissance Inventory											
STREAM	OUTFALL ID	LAND USE	DATE	TIME	OUTFALL DESCRIPTION	DEPTH	TOP WIDTH	BOTTOM WIDTH	FLOW AMOUNT	PHYSICAL INDICATORS	GIS COORDINATE
Slaters Creek	ORI SC 00001	I-65	11/5/2013	11:43 A.M.	Open Drainage - Concrete (Parabolic)	Shallow	4'	open flume	None	Outfall damage - Spalling/Cracking/Chipping; causing bank erosion	36.40007 86.71797
Slaters Creek	ORI SC 00002	Residential (RB) I-65 (LB)	11/5/2013	11:50 A.M.	Closed box Pipe	60'	6'	6'	Moderate		36.39711 86.7166
Slaters Creek	ORI SC 00003	Interstate	11/5/2013	12:05 P.M.	Closed box Pipe	200'	6'	6'	None (ponding)	Water is pooled at exit (Three outfalls at one site prohibiting flow at each exit)	36.40062 86.71883
Slaters Creek	ORI SC 00004	Interstate and Slaters Creek Road	11/5/2013	12:12 P.M.	Open Drainage Concrete Flume	1'	4'	open flume	None	Runoff from I-65; dry with leaves in flume; some ponding at end of flume with indication of petroleum products	36.40062 86.71883
Slaters Creek	ORI SC 00005	Interstate and Slaters Creek Road with Auto Salvage Yard	11/5/2013	12:20 P.M.	Closed Pipe - circular concrete	12" circular			None - ponding at outlet	Ponding water appears to have some petroleum products in it	36.40062 86.71883
Slaters Creek	ORI SC 00001	Industrial (LB) Open Space (I-65)	11/27/2013	11:00 A.M.	Open Drainage - Concrete (Parabolic)	6"	3'	3'	Trickle	Gas/Oil Odor; Brown/orange color; Turbidity - Opaque; Oily deposits and stains; Inhibited vegetation; water crossing the interstate and flowing in to this concrete flume; water is mixed with oil or other petroleum products	None Available
Slaters Creek	STC 0001	Open Space and Residential	3/11/2014	1:00 P.M.	Open Drainage - earthen	3'	2-3'	2'	Moderate		36.3810393 86.7127928
Slaters Creek	STC 0002	Suburban Residential	3/11/2014	1:34 P.M.	Open Drainage - earthen	3'	5'	1'	None	lots of algae in creek	36.3789372 86.7124127
Slaters Creek	STC 0003	Suburban Residential	3/11/2014	1:46 P.M.	Closed CMP Circular Pipe	6" circular			None	Debris cluttered inside the pipe	36.6785558 86.7117691
Slaters Creek	STC 0004	Suburban Residential	3/11/2014	1:53 P.M.	Closed CMP Circular Pipe	8" Circular			None	lots of long stringy brown algae in creek	36.378227 86.713787
Slaters Creek	STC 0005	Suburban Residential	3/11/2014	2:00 P.M.	Closed steel Circular Pipe	12" circular			None	Deposits and rust colored stains at the flow line; lots of algae but the water is fairly clear.	36.377259 86.7108142

STREAM	OUTFALL ID	LAND USE	DATE	TIME	OUTFALL DESCRIPTION	DEPTH	TOP WIDTH	BOTTOM WIDTH	FLOW AMOUNT	PHYSICAL INDICATORS	GIS COORDINATE
Slaters Creek	STC 0006	Suburban Residential	3/11/2014	2:12 P.M.	Closed steel Circular Pipe	16' circular			None	Corrosion outfall damage; lots of thick algae growth	36.3758402 86.7109161
Slaters Creek	STC 0007	Residential	3/11/2014	2:30 P.M.	Closed PVC circular	6" circular			None	Substantial amount of algae growth in creek	36.3738614 86.7109323
Slaters Creek	STC 0008	Suburban Residential	3/11/2014	2:50 P.M.	Open Drainage - earthen	4'	8'	8'	Substantial	Turbidity - Slight cloudiness; lots of trash along the bank; this is a smaller stream that connects to the creek.	36.3725939 86.7103534
Slaters Creek	STC 0009	Residential	3/15/2014	11:45 A.M.	Closed steel Circular Pipe	2" circular			None	Outfall damage - corrosion; lots of trash and debris in the area.	36.3711206 86.1772407
Slaters Creek	STC 0010	Suburban Residential	3/15/2014	12:00 P.M.	Open Drainage - Concrete	6'	3'	3'	None	Turbidity - Slight Cloudiness; Outfall damage - spalling, cracking, chipping; lots of erosion damage (probably due to flood) car parts; old fence blocking flow and holding debris	36.37704514 86.7113808
Slaters Creek	STC 0011	Residential	3/15/2014	12:20 P.M.	Open Drainage - earthen	10'	7'	2'	Trickle	lots of algae and sediment otherwise creekbed is rock	36.3701236 86.7101506
Slaters Creek	STC 0012	Suburban Residential	3/15/2014	12:25 P.M.	Closed steel Circular Pipe	10" Circular			None	Spots with very thick and heavy algae growth	36.3698087 86.7098953
Slaters Creek	STC 0013	Residential	3/15/2014	12:35 P.M.	Closed PVC circular	12" circular			None	Pipe appears to be new and in good condition.	36.3696021 86.7098433
Slaters Creek	STC 0014	Suburban Residential	3/15/2014	12:44 P.M.	Open Drainage - earthen	4'	6'	3'	Trickle	Excessive vegetation	36.3688619 86.7098518
Slaters Creek	STC 0015	Residential	3/15/2014	1:00 P.M.	Closed PVC circular	6" circular			None	Lots of junk in the area such as tires, barrels and trash	36.3674548 86.7102764
Slaters Creek	STC 0016	Suburban Residential	3/15/2014	1:25 P.M.	Underground water source feeding the stream from beneath the creek bed					very clean and clear	36.3662021 86.7104269
Slaters Creek	STC 0017	Suburban Residential	3/15/2014	1:35 P.M.	Open Drainage - earthen	4'	4'	3'	Moderate	Small stream inlet with a few PVC pipes in water; lots of algae	36.366073 86.7104894

STREAM	OUTFALL ID	LAND USE	DATE	TIME	OUTFALL DESCRIPTION	DEPTH	TOP WIDTH	BOTTOM WIDTH	FLOW AMOUNT	PHYSICAL INDICATORS	GIS COORDINATE
Slaters Creek	STC 0018	Suburban Residential	3/15/2014	2:00 P.M.	Closed CMP Circular Pipe	12" circular			None	Lots of debris and erosion around pipe. Further upstream there is a patch of sediment that is distinctly different - flow line is gray but black in the middle.	36.3628303 86.7100499
Slaters Creek	STC 0019	Suburban Residential	3/15/2014	2:30 P.M.	Closed steel Circular Pipe	36" circular			Moderate	Pipe in fair condition; appears to be storm drainage from the other side of the road.	36.361834 86.7101054
Slaters Creek	STC 0020	Suburban Residential	3/15/2014	2:50 P.M.	Open Drainage - earthen	5'	4'	3'	None	Turbidity - cloudy; lots of erosion and dead vegetation around; lots of floating plant matter; some trash and plastic bags	36.359999 86.7122006
Slaters Creek	STC 0021	Suburban Residential	3/15/2014	3:05 P.M.	Open Drainage - earthen	12"	12"	6"	None	Turbidity - slight cloudiness; Excessive vegetation; debris from barn is scattered around creek algae is covering surface of water at some parts	36..5757 86.7122213
Slaters Creek	STC 0022	Suburban Residential	3/15/2014	3:30 P.M.	Open Drainage - earthen	3'	2'	2'	Moderate	Turbidity - slight cloudiness; small stream that flows into creek; lots of algae growth; lots of trash and debris; lots of trees mostly dead; clumps of "gunk" organic mater piled in still parts of water.	36.3535511 86.7126102
Slaters Creek	STC 0023	Suburban Residential	3/15/2014	3:50 P.M.	Open Drainage - earthen	4'	5'	4'	None	Small inlet full of trash and debris; slight turbidity with lots of sediment and moderate black algae growth; lots of aquatic life/fish. Lots of rusted metal that are being leached into the creek	36.3528783 86.7129765

STREAM	OUTFALL ID	LAND USE	DATE	TIME	OUTFALL DESCRIPTION	DEPTH	TOP WIDTH	BOTTOM WIDTH	FLOW AMOUNT	PHYSICAL INDICATORS	GIS COORDINATE
Slaters Creek	STC 0024	Suburban Residential	3/15/2014	4:10 P.M.	Open Drainage - earthen	2'-8'	8'	3'	Moderate	Turbidity - slight cloudiness; lots of brown algae; some trash and foamy bubble are present; two water headers and metal garbage found down stream	bet

Question D

pollutants; inspections of businesses or industries of a type associated with higher than usual discharges of contaminants or pollutants or with discharges of a type which are more likely than the typical discharge to cause violations of the municipality's NPDES stormwater permit; and joint inspections with other agencies inspecting under environmental or safety laws. Inspections may include, but are not limited to: reviewing maintenance and repair records; sampling discharges, surface water, groundwater, and material or water in drainage control facilities; and evaluating the condition of drainage control facilities and other BMPs.

19-111. Illicit discharges. (1). Scope. This section shall apply to all water generated on developed or undeveloped land entering the municipality's separate storm sewer system.

(a) Prohibition of illicit discharges.

(1) No person shall introduce or cause to be introduced into the municipal separate storm sewer system any discharge that is not composed entirely of Stormwater. It shall be illegal for any person, business, or organization to intentionally dump liquids or solids that are considered priority pollutants by the EPA onto the ground, parking lots, vehicle storage and maintenance lots, vehicle wash areas, or any other uncontained area where there is a potential for exposure to rain or storm water runoff and potential for the pollutant to reach public or private storm water drainage systems, City of Millersville waters or waters of the State of Tennessee.

(2) No person shall cause or allow an illicit discharge to the Stormwater system, or any component thereof, or onto driveways, sidewalks, parking lots, sinkholes, creek banks, or other areas draining to the Stormwater system. Illicit discharges include, but are not limited to:

- (a) Sewage discharges or overflows, including Sanitary Sewer Overflows (SSOs),
- (b) Discharges of wash water resulting from the hosing or cleaning of gas stations, auto repair garages, or other types of automotive services facility,
- (c) Discharges resulting from the cleaning, repair, or maintenance of any type equipment, machinery, or facility including motor vehicles, cement-related equipment, and portable toilet services, etc.,

- (d) Discharges of wash water from mobile operations such as mobile automobile washing, steam cleaning, power washing, and carpet cleaning, etc.,
 - (e) Discharges of wash water from the cleaning or hosing of impervious surfaces in industrial and commercial areas including parking lots, streets, sidewalks, driveways, patios, plazas, work yards, and outdoor eating or drinking areas, etc.,
 - (f) Discharges of runoff from material storage areas containing chemicals, fuels, grease, oil, or other hazardous materials,
 - (g) Discharges of pool or fountain water containing chlorine, biocides, or other chemicals: discharges of pool or fountain filter backwash water,
 - (h) Discharges of sediment and construction-related wastes, and other pollutant sources such as discarded building materials, chemicals, trash, fuel, paint etc. and
 - (i) Discharges of food-related wastes (e.g. grease, fish processing, restaurant kitchen mat and trash bin wash water, etc.
- (3) The commencement, conduct or continuance of any non-stormwater discharge to the municipal separate storm sewer system is declared to be unlawful and prohibited except as described as follows:
- (a) **Uncontaminated** discharges from the following sources:
 - (1) Water line flushing or other potable water sources,
 - (2) Landscape irrigation or lawn watering with potable water,
 - (3) Diverted stream flows permitted by the State of Tennessee,
 - (4) Rising ground water,
 - (5) Groundwater infiltration to storm drains,
 - (6) Pumped groundwater,
 - (7) Foundation or footing drains,
 - (8) Crawl space pumps,
 - (9) Air conditioning condensation,
 - (10) Springs,
 - (11) Non-commercial washing of vehicles,
 - (12) Approved non-profit organization car washing for charitable purposes
 - (13) Natural riparian habitat or wetland flows,

- (14) Swimming pools (if de-chlorinated - less than one PPM chlorine),
 - (15) Discharges pursuant to a valid and effective NPDES permit issued by the State of Tennessee
 - (16) Fire fighting activities, and
 - (17) Any other uncontaminated water source.
- (b) Discharges specified in writing by the administrator as being necessary to protect public health and safety.
 - (c) Dye testing is an allowable discharge if the administrator has so specified in writing.
- (4) Discharge due to water line flushing through a direct connection to the waters of the State of Tennessee is prohibited. Persons responsible for water line flushing activities are required to de-chlorinate discharges before such discharges come in contact with waters of the State of Tennessee.
- (5) This prohibition expressly includes, without limitation, all illicit discharges, regardless of time elapse since initial discharge, whether the discharge was permissible under law or practices applicable or prevailing at the time of initial release.
- (b) Prohibition of illicit connections.
- (1) The construction, use, maintenance or continued existence of illicit connections to the separate municipal storm sewer system is prohibited.
 - (a) No person shall connect or allowed to be connected, any sanitary sewer to the Stormwater system.
 - (2) This prohibition expressly includes, without limitation, illicit connections made in the past, regardless of whether the connection was permissible under law or practices applicable or prevailing at the time of connection.
- (c) Reduction of Stormwater Pollutants. Any person responsible for a property or premises, which is, or may be, the source of an illicit discharge shall undertake all practicable measures to implement, at the person's expense, the BMP's necessary to prevent the further discharge of pollutants to the municipal separate storm sewer system. Compliance with all terms and conditions of a valid NPDES permit authorizing the discharge of Stormwater associated with industrial activity, to the extent practicable, shall be deemed compliance with the provisions of this section.
- (1) Every person shall comply with the following minimum requirements

- (a) Littering. No person shall throw, deposit, leave, maintain, keep or permit to be thrown, deposited, placed or left, any refuse, rubbish, garbage or other discarded or abandoned objects, articles and accumulations, in or upon any street, alley, sidewalk, storm drain, inlet, catch basin, conduit or any other drainage structure, business place or upon any public or private plot of land in the city, so that the same might be or become a pollutant. No person shall throw or deposit litter in any pond, stream, creek, or any water conveyance in the city.
- (b) Owners of Abutting Property. The occupants, tenants, owners, lessees and/or proprietors of any real property in the City of Millersville in front of which there is a paved sidewalk shall be responsible for keeping such sidewalk free of dirt and litter to the maximum extent practicable (MEP). Sweepings from such sidewalk shall not be swept or otherwise made or allowed to go into the gutter, water conveyance, storm drain, drainage ditch or roadway. Sweepings that are not composed entirely of dirt or rock shall be disposed of in receptacles maintained on such real property as required for the disposal of garbage.
- (c) Owners and Operators of Parking Lots and Similar Structures. Persons owning or operating a paved parking lot, gas station, paved private street or road, or similar structure, shall clean those structures in a manner that does not result in discharge of pollutants to any storm water conveyance.
- (d) Best Management Practices for Construction Sites. All construction sites shall comply with §19-106, Tennessee Sediment and Erosion Control Handbook, and Tennessee's Guide to Selection and Design of Best Management Practices or any other ordinance that revises, supplements or replaces said section. Any construction worker, builder, homeowner or contractor performing work in the City of Millersville shall keep debris and dirt out of any roadway or storm water conveyance. The authorized enforcement officer may require any construction worker, builder, homeowner or contractor performing work in the City of Millersville to submit a Stormwater pollution

prevention plan prior to final approval or issuance of a building permit, whichever applies.

(e) Best Management Practices for Existing Conditions and New Activity.

The Stormwater Inspector may enforce controls on the volume and rate of Stormwater runoff for any existing condition or new activity such as, land disturbance, construction, new development and redevelopment within the city as may be appropriate to minimize the discharge and transport of pollutants. Should any activity or existing condition require the review of an engineer, all costs associated with the review shall be the responsibility of the contractor, owner, builder or worker as may be appropriate.

(f) Compliance with Best Management Practices. Where BMP guidelines

or requirements have been defined in the City of Millersville's Code of Ordinances or federal, state or city Stormwater Programs for any activity, operation or facility, which may cause or contribute to Stormwater pollution or contamination, and/or discharges of non-stormwater to any watercourse or Stormwater conveyance, every person undertaking such activity or operation, or owning or operating such facility, shall comply with such guidelines or requirements. Any person engaged in activities or operations, or owning facilities or property which will or may result in pollutants entering storm water, the storm drain system or water conveyance shall implement best management practices to the extent they are technologically achievable to prevent and reduce such pollutants. The owner or operator of a commercial or industrial establishment shall provide reasonable protection from accidental discharge of prohibited materials or other wastes into Stormwater conveyance or any watercourse. Facilities to prevent accidental discharge of prohibited materials or other wastes shall be provided and maintained at the owner or operator's expense.

(g) Watercourse Protection. Every person owning property through which

a watercourse passes shall be responsible to keep and maintain that part of the watercourse within the property reasonably free of trash, debris, excessive vegetation and other obstacles that would pollute, contaminate or significantly retard the flow of water through the

watercourse. In addition, the owner shall maintain existing privately owned structures within or adjacent to a watercourse, so that such structures will not become a hazard to the use, function or physical integrity of the watercourse. The owner or lessee shall not remove healthy bank vegetation beyond that which is actually necessary for maintenance, nor remove vegetation in such a manner as to increase the vulnerability of the watercourse to erosion. The property owner shall be responsible for maintaining and stabilizing that portion of the watercourse that is within their property lines in order to protect against erosion and degradation of the watercourse originating or contributed from their property.

- (2) Any person engaged in activities that may result in pollutants entering the Stormwater conveyance system shall, to the maximum extent practicable, undertake the measures set forth below to reduce the risk of non-stormwater discharge and/or pollutant discharge.

- (a) Business Related Activities

- (1) Stormwater Pollution Prevention Plan (SWPPP). The Stormwater Manager may require any business, not limited to new businesses, in the city engaged in activities that may result in a non-stormwater discharge to develop and implement a Stormwater Pollution Prevention Plan (SWPPP) that must include an employee training program. Business activities that may require a Stormwater Pollution Prevention Plan include, but are not limited to, maintenance, storage, manufacturing, assembly, equipment operations, automotive sales or services, vehicle loading or fueling, and cleanup procedures that are carried out partially or wholly outdoors. A SWPPP shall be required and a copy retained onsite of any business, old or new, situated on any stream bank or considered for any reason a “hot spot”. The SWPPP shall be updated at least every five (5) years or at the request of the Stormwater Manager.

- (2) Any person conducting business or industrial activities in the city shall prevent pollutants from entering the Stormwater

conveyance system and shall comply with all applicable federal, state and local laws, ordinances or regulations.

(b) Development

- (1) The Stormwater Manager may establish and impose such controls as he/she determines to be appropriate to minimize the long-term, post-construction discharge of Stormwater pollutants from new development or modifications to existing development. Controls may include source control measures to prevent pollution of Stormwater and/or treatment controls designed to remove pollutants from Stormwater.
- (2) Any person conducting development in the city shall prevent pollutants from entering the Stormwater conveyance system and shall comply with all applicable federal, state and local laws, ordinances or regulations. Pollutant sources such as construction materials, debris, trash, fuel, paint and stockpiles must be kept out of the rain as practicable. (inside a building, covered with plastic or tarps, or sealed tightly in a leak-proof container)
- (3) Concrete truck and other equipment washouts must be located away from any stream, storm drain inlets, or ditches and must be a clearly identified and protected area. All such washout areas must be periodically cleaned.
- (4) Park, refuel and maintain vehicles and equipment in one area of the site that is well away from streams, storm drains inlets or ditches to minimize the area exposed to possible spills and fuel storage. Spill kits must be kept nearby and used immediately in the event of a spill.
- (5) Construction site must be kept free of litter, construction debris and leaking containers.
- (6) Never hose down paved surfaces to clean dust, debris, or trash. Sweep up materials and dispose of them in the trash.
- (7) Never bury trash or debris.

(8) Reduce the use of hazardous materials as practicable then, dispose or recycle hazardous materials properly as outlined by the Environmental Protection Agency.

(c) Compliance with General Permits

(1) Any person conducting business, industrial, construction or development activities in the city that are subject to a permit issued by the State of Tennessee, City of Millersville or the United States Environmental Protection Agency, including the construction general permit and the industrial general permit, shall comply with all requirements of such permit.

(d) Inspections.

(1) The Stormwater Manager shall inspect all businesses located on or near a stream and other “hot spots” for illicit discharges and compliance with all Stormwater ordinances, permits and SWPPP’s at least once each year whether or not a complaint is received.

(2) An onsite inspection must be completed at all sites suspected of noncompliance with this chapter.

(3) Inspection forms specifically created for construction should be used during inspections on all new building sites or sites of land disturbance requiring a permit.

(4) Land Disturbance inspections shall be completed, using the inspection form created for this purpose, 1) following the installation of all BMP’s’ and prior to land disturbance, 2) following rain events, 3) at least once a month and 4) continuing until site is stable.

(5) The release of the site by the Stormwater Manager shall be in writing and passed on to the contractor, builder, owner as identified by documents presented to the Codes Department or owner of record according to property tax records, whichever applies. No site shall obtain a Certificate of Use or Occupancy until, where applicable, a Release of the site has been obtained by the Stormwater Manager.

(e) Containment and Notification of spills.

(1) Notwithstanding other requirements of law, as soon as any person has any knowledge of any illicit spill, or suspected release of materials which are resulting in, or may result in, illicit discharges or pollutants discharging

into Stormwater or the municipal separate storm sewer system, whether or not responsible for a facility or operation, or responsible for emergency response for a facility or operation, shall immediately notify the appropriate authority.

- (2) The person/s responsible for such discharge, either directly or indirectly, shall immediately take all necessary steps to ensure the discovery, containment, and cleanup of such release.
 - (a) A report shall be filed with the Stormwater Manager for the City of Millersville following the containment and cleanup of the illicit spill detailing the location of the spill, exact pollutant/s, outlining the discovery, containment method/s and specific cleanup steps used to bring the site into compliance. This report shall be filed at city hall within 7 days of the completion of the cleanup.
 - (b) When such spill, in the opinion of the Stormwater Manager is extensive, hazardous, not fully contained, cleanup is not adequate, or site is not compliant within a reasonable time, a report from a licensed professional may be required. The report shall contain the effects of the spill on land, air and/or water as well as all the cleanup requirements. The report shall be filed when the site has been fully cleaned and the licensed professional has approved the outcome. Failure to submit the report as required by the Stormwater Manager may result in municipal penalties. All costs of such a report will be the responsibility of the individual or agency accountable for cleanup of such spill. Such report shall be filed within 7 days of the completion of the cleanup.
- (3) In the event of such a release of hazardous materials the person/s responsible for such discharge, either directly or indirectly shall immediately notify emergency response agencies of the occurrence via emergency dispatch services.
- (4) In the event of a release of non-hazardous materials, the person/s responsible for such discharge, either directly or indirectly shall notify the Stormwater Manager in person or by telephone or facsimile no later than the next business day. Notifications in person or by telephone shall be confirmed by written report addressed and mailed to the Stormwater Manager within three (3) business days of the verbal notice. The report

shall detail the location of the spill, exact pollutant/s, outline the discovery, containment method/s and specific cleanup steps used to bring the site into compliance. If the discharge of prohibited materials emanates from a commercial or industrial establishment, the owner or operator of such establishment shall also retain an on-site written record of the discharge and the actions taken to prevent its recurrence. Such records shall be retained for at least ten years.

- (f) Illegal Dumping. It shall be illegal for any person to dump liquids or solids that are considered priority pollutants by the U.S. Environmental Protection Agency (EPA) on the ground where there is potential exposure to rain or Stormwater and potential for the pollutant to reach the Municipal Separate Storm Sewer System of the City of Millersville or any water conveyance. (The EPA Priority Pollutant List can be found at <http://www.epa.gov/waterscience/methods/pollutants.htm>.)
- (g) Enforcement. Violations of this section of the Stormwater Ordinance could result in notices of violation, stop work orders, and/or municipal monetary penalties.
- (h) Location of Portable Toilets. Portable toilets must be located no less than 50 feet away from any storm drain inlets, water conveyances or streams and must be located on a flat plane away from any impervious surface. Alternative locations may be approved by the inspector with or without additional safeguards.
- (i) Location of Concrete Washouts. Concrete washout areas must be located at least 50 feet from storm drain inlets, water conveyances, open ditches or streams.
- (j) Cleaning Impervious Surfaces.
 - (1) A vacuum must be used to remove water from any impervious surface during saw cut operations; nearby storm water inlets and other water conveyances must be protected.
 - (2) Before hosing down or pressure washing any impervious surface, the surface must be swept clean and all sweepings, not comprised entirely of rock and soil, disposed of in trash receptacles; rock and soil may be returned to the property as fill. Nearby storm drain outlets and other water conveyances must be protected to keep sediments out of streams and/or the Stormwater system.

19-112. Administrative enforcement

- (a) Notification of Violation. Whenever the Administrator finds that any permittee or any other person discharging storm water has violated or is violating this article or a permit or order issued hereunder, the administrator may serve upon such person

Question E

Standard Operating Procedure for:

2.1 IDDE: Inspections During Mapping



Purpose of SOP:

To record basic characteristics of individual storm drain outfalls, and evaluate suspect outfalls for illicit discharges.

Always:

- Conduct inspections during dry weather periods.
- Characterize and record the outfall's dimensions, shape, and component material.
- Characterize and record observations on basic sensory and physical indicators (e.g., odor, color, oil sheen).
- Follow procedure below if an obvious illicit discharge is encountered (such as raw sewage, paint, etc.).

Dry Weather Discharge

The CWP defines **dry weather** as a 48 hour period with no runoff-producing rainfall. NEIWPCC defines dry weather as a 48-72 hour period with less than 1/10-inch rainfall. Each community should refine the definition of dry weather to suit its specific conditions.

Whenever Possible:

- Photograph the outfall with a digital camera.
- Identify and label the outfall with a unique identifier. For example "SWO-013".
- If dry weather flow is present at the outfall, and the flow does not appear to be an obvious illicit discharge (e.g., flow is clear, odorless, etc.), attempt to identify the source of the flow (intermittent stream etc.), then document the discharge for future comparison.

Equipment list for mapping:

1. Existing paper maps
2. Field sheets
3. Camera (preferable digital)
4. GPS Unit
5. Spray paint (or other marker)
6. Cell phones or hand-held radios
7. Clip boards and pencils
8. First aid kit
9. Flash light or head lamp
10. Surgical gloves
11. Tape measure
12. Temperature probe
13. Waders
14. Watch with a second hand
15. Five 1-liter sample bottles

Never:

- Never put yourself in danger.
- Never enter private property without permission.

Procedures to follow if illicit discharge is detected:

- ? Call dispatch / supervisor.
- ? Trace upstream to locate the source.
- ? Take photos.
- ? Estimate flow/collect samples if instructed to do so.

Standard Operating Procedure for:		
2.2 IDDE: Long-Term Inspections		
Purpose of SOP:	Long-term dry weather inspections of outfalls are a primary means of detecting illicit discharges and identifying any necessary maintenance or repairs.	

Always:

- Perform more frequent inspections on outfalls with suspected illicit discharges and/or high priority areas.
- Conduct inspections during dry weather periods.
- Check the outfall's dimensions, shape, and component material.
- Characterize and record observations on basic sensory and physical indicators (e.g., odor, color, oil sheen).
- If an obvious illicit discharge is encountered (such as raw sewage, paint, etc.), follow the procedure below.
- Analyze inspection results for trends and evaluate the effectiveness of the IDDE Program.

Whenever Possible:

- Perform inspections of all the outfalls at least once per permit cycle (long term).
- Photograph the outfall with a digital camera.
- Identify and label the outfall with a unique identifier. For example "SWO-013".
- If dry weather flow is present at the outfall, and the flow does not appear to be an obvious illicit discharge (e.g., flow is clear, odorless, etc.), attempt to identify the source of the flow (intermittent stream, etc.) then document the discharge for future comparison.
- Identify the source of the discharge.

Never:

- Never put yourself in danger.
- Never enter private property without permission.

<p>Procedures to follow if illicit discharge is detected:</p> <ul style="list-style-type: none"> ? Call dispatch / supervisor. ? Trace upstream to locate the source. ? Take photos. ? Estimate flow/collect samples if instructed to do so.

Standard Operating Procedure for:		
2.3 IDDE: Opportunistic Inspections		
Purpose of SOP:	To ensure personnel follow proper procedures if they observe illicit discharges while conducting their regular duties.	

Always:

- Call dispatcher, supervisor, or code enforcement if you see evidence of an illicit discharge.
- Assess the general area of the illicit discharge to see if you can identify its source.

Whenever Possible:

- Use the Incident Tracking Sheet to document observations.
- Take photographs of the illicit discharge.
- Carry a Dry Weather Outfall Inspection Form.

Never:

- Never enter private property without permission.
- Never put yourself in danger.

Standard Operating Procedure for:		
2.4 IDDE: Citizen Call-in Inspections		
Purpose of SOP:	To collect appropriate information from a citizen reporting a potential illicit discharge to increase the chances of identifying and removing its source.	

Always:

- Use the Incident Tracking Sheet to collect the appropriate information.
- Document any further action taken.

Whenever Possible:

- Train Dispatch Personnel in the use of the Incident Tracking Sheet.
- Document and review incidents reported by citizens on an annual basis to look for patterns of illicit discharges.

Never:

- Never enter private property without permission.
- Never put yourself in danger.

Standard Operating Procedure for:		
2.5 IDDE: Septic System Inspections		
Purpose of SOP:	Failed septic systems can adversely impact water quality. Completing septic system inspections in suspect areas can assist in timely correction.	

Always:

- Use a certified inspector or a licensed site evaluator.
- Survey high risk areas (older areas or areas near lakes or impaired waterbodies).

Whenever Possible:

- Document septic system inspections in a summary report for future reference.

Never:

- Never enter private property without permission.
- Never put yourself in danger.

Standard Operating Procedure for:		
2.6 IDDE: Tracing Illicit Discharges		
Purpose of SOP:	To efficiently and systematically identify the source of an illicit discharge.	

Always:

- Review / consider information collected when illicit discharge was initially identified (Incident Tracking Sheet or Dry Weather Outfall Inspection Form).
- Survey the general area / surrounding properties to identify potential sources of the illicit discharge as a first step.
- Trace illicit discharges using the procedures below.

Whenever Possible:

- Use weirs, sandbags, or dams to trap intermittent discharges during dry weather.
- Smoke test or televise the storm drain system to trace high priority, difficult to detect illicit discharges.

Never:

- Never enter private property without permission.
- Never put yourself in danger.

Tracing Procedures

Flowing discharges – use visual tracing and/or dye testing.

Non-flowing discharges – inspect storm drain access points for staining/ residual evidence and/or use dye testing.

Standard Operating Procedure for:		
2.7 IDDE: Removing Illicit Discharges		
Purpose of SOP:	Proper removal of an illicit discharge will ensure it does not recur. Using legal methods for the removal will minimize the municipality's liability.	

Always:

- Determine who is financially responsible:
 - Municipality
 - Private property owner
 - Exempt person
- Suspend access to storm drain if an "imminent and substantial danger" exists.
- If the discharge is from an exempt facility (see box below) notify the facility operator and the appropriate enforcement authority.
- Repair/correct cause of discharge if municipality is responsible.

Never:

- Never repair/correct cause of discharge on private property until directed to do so by the appropriate municipal authority (stormwater program manager, etc.)

Exempt Facility	Alternate Regulation They Are Subject To	Enforcement Authority
Maine Turnpike Authority and Maine DOT (in selected urbanized areas)	Maine General Permit for the Discharge of Stormwater from MDOT and MTA MS4s	Maine DEP
Portsmouth Naval Shipyard, Southern Maine Community College, USM Gorham, Bangor Air National Guard	Maine General Permit for the Discharge of Stormwater from State and Federally Owned MS4s	Maine DEP
Industrial Facilities with selected SIC codes (See Table 2-8 for a complete list)	Multi Sector General Permit for Industrial Activities	USEPA (Until October 2005) Maine DEP (After October 2005)

Standard Operating Procedure for:		
2.8 IDDE: Tracking / Evaluating Illicit Discharges		
Purpose of SOP:	Taking time to track and evaluate illicit discharge locations and types is necessary for an effective IDDE program.	

Always:

- Review illicit discharge activities annually to identify patterns, trends, areas of high or low illicit discharge activity and revise inspection procedures accordingly.
- Select a tracking system that fits the municipality:
 - Three ring binder method (small communities)
 - MS4 ASIST Professional Database (medium and large communities)
 - Custom Database (medium and large communities)

Whenever Possible:

- Use a tracking program that can be linked to your mapping data.

City of Millersville, Tennessee
ENFORCEMENT RESPONSE PLAN

I. Description of each type of enforcement response

A. Verbal Warning

- 1. The MS4 permit includes minimum verbal warning requirements that the violations nature and the required corrective action must be specific in the verbal warning.**
- 2. A date for a follow-up inspection to confirm that a problem has been addressed should be a part of the verbal warning.**
- 3. A verbal warning is not a prerequisite if the conditions warrant a more formal written notice.**
- 4. Recordkeeping: The records would include documenting the verbal warnings and records from any follow-up site visit(s) or other actions.**

B. Written Notices

1. Written Warning

- a) A written warning should include a description of the noncompliance, corrective actions needed to address the issue and a follow-up inspection date.**
- b) A date for a follow-up inspection to confirm that the problem has been addressed should be part of the written warning.**
- c) Recordkeeping: Maintain copies of the written warning and documentation from any follow-up site visit(s) or other actions.**

2. Notice of Violation (NOV)

- a) The NOV should include a description of the noncompliance, corrective actions needed to address the issue and a follow-up inspection date.**
- b) The NOV should require the party committing the violation to submit an explanation of the violation and a plan for the satisfactory correction and prevention of the violation conditions, including specific required actions.**
- c) The response is submitted to the City Manager**

d) Submitting this NOV response plan does not relieve the party committing the violation of violations that occurred either before or after the receipt of the NOV. Monetary penalties (civil and administrative penalties) may be assessed for NOV's at the City's discretion.

C. Citations with Administrative Penalties

1. Compliance Order

a) The City building official may issue this order to a person who has violated or continues to violate the Stormwater Ordinance, a permit issued under the ordinance or an order issued under the Stormwater ordinance.

b) *This order can direct the violator to install adequate structures and devices and to implement procedures for proper operation within a specific time period.*

c) Monetary penalties (civil and administrative penalties) will be assessed with the compliance order.

d) Recordkeeping: The city must keep a copy of the compliance order as well as documentation from any follow-up site visit(s) or other actions.

D. Stop Work Orders

1. Cease and Desist Order

a) The Stormwater Manager or Enforcement Officer may issue this order for any person who has violated or continues to violate the Stormwater ordinance or any permit or order issued under the Stormwater Ordinance.

b) This order requires that the violator must comply with the order and must take appropriate remedial or preventive action to properly address the continuing or threatened violation. This can include stopping work and terminating the discharge.

c) Monetary penalties (civil and administrative penalties) may be assessed with the cease and desist order.

d) Recordkeeping: The city must keep a copy of the cease and desist order as well as documentation from any follow-up site visit(s) or other actions.

E. Withholding of Plan Approvals or Other Authorizations

1. The City's Stormwater Ordinance does not allow a building permit to be issued until an applicant has already obtained a land disturbance permit as required by the Stormwater ordinance.

2. Following construction, all applicants must submit as-built drawings for any structures on-site after final construction is completed. These as-built drawings must show final design specifications for all Stormwater management facilities and must be sealed by a registered professional engineer licensed to practice in Tennessee.

3. The City's Stormwater ordinance states that occupation permits will not be granted until all BMP corrections have been made and have been accepted by the city.

4. Where authorizations are withheld related to an unresolved Stormwater ordinance violation, the permit applicant must receive a clear explanation of why the authorization is being withheld and what corrective action(s) could be taken to correct the violation and to reconsider approval for other authorization for a project.

5. Recordkeeping: The city should maintain records of any withholding of authorizations related to unresolved Stormwater ordinance violations as well as records from any follow-up site visit(s) or other actions.

F. Additional Measures

1. Consent Orders

a) The city building official may enter into consent orders, assurances of voluntary compliance or other similar documents establishing an agreement with the person responsible for the noncompliance.

b) A consent order will include specific corrective actions to be taken to correct the noncompliance along with a specified time period to finish the corrective actions.

c) A consent order has the same force and effect as administrative orders such as the compliance order and the compliance order and the cease and desist order.

d) Recordkeeping: The city should keep copies of the consent order records as well as records fro, any follow-up site visit(s) or other actions.

2. Show Cause Hearings

a) The City Manager or his designee is able to order a person who violates the Stormwater Ordinance or a permit or order issued under the Stormwater Ordinance to “show cause” why a proposed enforcement action should not be taken.

b) A notice for this hearing must be served on the person specifying the time and place for the meeting, the proposed enforcement action, the reasons for the proposed enforcement action and a request for the violator to show cause why this proposed enforcement action should not be taken.

c) The meeting notice must be either served personally or delivered by registered or certified mail (return receipt requested) at least ten (10) days before the hearing.

d) Recordkeeping: The city should maintain copies of the show cause hearing records as well as records from any follow-up site visit(s) or other actions.

3. Civil Penalties

a) The city may assess civil penalties to the party violating the Stormwater Ordinance’s provisions.

b) These penalties will be no less than fifty dollars (\$50) per day and no more than five thousand dollars (\$5000) per day.

c) Each day the violation counts as a separate violation.

d) The City Manager or his designee may consider the following in assessing civil penalties for violations:

(1) Harm done to the Environment

(2) Harm to the Public Health (human harm)

(3) How long the damage will affect the natural environment and/or human use of that environment

(4) Quantity of Pollutants discharged OR the area affected by the pollution based on the size of the development or construction site

(5) The remediation efforts of those responsible for the violation and equities of the situation which outweigh the benefit of imposing any penalty or damage assessment, including:

(a) *Notification of relevant agencies*

(b) *Cleanup efforts*

(c) *Previous violations of the responsible parties*

(d) *Economic benefit gained by the violator*

Each assessment category will be based on a scale of 1 to 10, with 1 representing the best case and 10 representing the worst case. The total score from each category will be added to create a final civil penalty score, which will determine the per day penalty to be assessed.

Value Assignments: The Stormwater Manager will assign all values based on Professional Knowledge Assessment (PKA). The civil penalty assessment policies and procedures may be altered or changed to better fit specific circumstances and situations. Any changes will be made based on the PKA of the City of Millersville Stormwater Manager. Values for each assessment category will be based on Table 1: *Assessment Criteria*.

The City of Millersville shall have authority to recover expenses incurred in investigating violations of, and enforcing compliance with, this ordinance, or any other actual damages caused by the violation.

TO FOLLOW: Table 1: Assessment Criteria.

Table 1: Assessment Criteria.

	1	2.5	5	7.5	10
Human Impact (HAZMAT Scale)	Minimal Essentially non-toxic	Slight Exposure may cause irritation but only minor residual injury, even without medical treatment	Moderate Intense or prolonged exposure could cause temporary effects or possible residual injury unless prompt medical treatment is given	Serious Short or moderate exposure could cause serious temporary or residual injury, even with prompt medical treatment	Extreme Very short exposure could cause death or major residual injury, even with prompt medical treatment
Environmental Impact	Little/No Harm	Aquatic life leaves area	Few invertebrates die	Several invertebrates die	Significant multi-species kill
Clean-up Efforts	Remediation/clean-up efforts were timely and effective or, no measures were required	Clean-up/remediation efforts were timely but partially ineffective.	Clean-up/remediation efforts were mostly ineffective.	Clean-up/remediation efforts were completely ineffective.	No action taken to perform required clean-up or remediation
Notification of Agencies	Appropriate Agencies are notified or not applicable	Failed to notify one or more critical agencies inadvertently	Inadvertent failure to notify any agencies	Intentional failure to notify one or more agencies in a timely manner	Deliberate attempt to conceal or intentional failure to notify

Table 1 Notes:

a) For Environmental and Human Impacts:

(1) Reference materials such as Material Data Safety Sheets (MSDS), textbooks, etc. may be used if necessary.

(2) Environment and Human values will be based on the PKA of the Stormwater Manager, while taking into consideration the effects the material discharged has on the environment and humans respectively.

b) For Quantity Values (See Chart 2):

(1) If the Human or Environmental Impact value in Section 1 is greater than 4, then the “total gallons” scale is to be used to quantify the spill or discharge.

(2) If the Human or Environmental Impact value in Section 1 is less than or equal to 4, then the “discharge rate” scale is to be used to quantify the spill or discharge.

c) The Long Lasting Effects value will be based on the PKA of the Stormwater Manager, taking into consideration the effect the discharged material has on the environment over time, and/or the magnitude of damage done to the environment and its ability to recover.

d) The Notification of Agencies value will be based on the PKA of the Stormwater manager based the following:

(1) If it was required in a previous Notice of Violation (NOV) issued to the site.

(2) The discharge was a “reportable quantity” as required by State or Federal guidelines.

(3) It posed either a threat to human health or significant impact to the environment.

e) The Clean-up Efforts value will be based on the PKA of the Stormwater Manager based on the effectiveness of required remediation and/or required housekeeping/clean-up efforts.

f) Violations refer to NOV's and/or violations that resulted in fines.

g) Economic benefit gained by the violator shall be evaluated based on the PKA of the Stormwater Manager.

Assessment Scoring: The per-day civil penalty to be assessed for a violation will be based on Chart 1: *Penalty amount based on Calculation of Civil Penalties*.

Chart 1: Penalty amount based on Calculation of Civil Penalties.

<u>Penalty Score</u>	<u>Range Per-Day Fine</u>	<u>Penalty Score</u>	<u>Range Per-Day Fine</u>
0-4	\$50	27-32	\$1,500
5-9	\$100	33-38	\$2,000
10-14	\$250	39-43	\$3,000
15-20	\$500	44-47	\$4,000
21-26	\$1,000	48-50	\$5,000

CHART 2 FOLLOWS

Chart 2: Quantity of Discharge or Area Effected Rating Scale

Section 2: Quantity of Discharge (a) or Area Effected (b or c)				
(a) Non-Construction Related		(b) Development	(c) Construction Site	
Discharge Rate (Gal/Min)	Total Gallons	Acreage	Acreage	Rating
0-10	0-1	1	1	1
11-20	1-5	2-3	2	2
21-30	6-10	4-6	3	3
31-40	11-20	7-10	4	4
41-50	21-30	11-15	5	5
51-60	31-50	16-20	6	6
60-70	51-100	21-30	7	7
71-80	101-1000	31-40	8	8
81-90	1001-5000	41-50	9	9
>90	>5000	>50	>10	10

The following Excel spreadsheet has built in calculations that automatically assess the “per-day” penalties based on the PKA following review of the Assessment Criteria. This data is entered in the light yellow spaces and Total Penalty Points are automatically determined. Chart 1 is then used to determine the total per-day penalty.

Figure 1: Excel Spreadsheet for the Calculation of Civil Penalties (follows on the next page)

Facility or Site Name:				
Note: 1 = Best Case; 10 = Worst Case. Fill in all Light Yellow blocks				
Section 1: Harm to the Environment and Public health				
(1 to 10)	Harm to the Environment			
(1 to 10)	Harm to the Public Health (human harm)			
(1 to 10)	Long Lasting effects			
Section 2: Quantity of Discharge (a) or Area Affected (b or c)				
(a) Non-Construction Related		(b) Development	(c) Construction Site	
Discharge Rate (Gal/Min)	Total Gallons	Acreage	Acreage	Rating
0-10	0-1	1	1	1
11-20	0-5	2-3	2	2
21-30	6-10	4-6	3	3
31-40	11-20	7-10	4	4
41-50	21-30	11-15	5	5
51-60	31-50	16-20	6	6
60-70	51-100	21-30	7	7
71-80	101-1000	31-40	8	8
81-90	1001-5000	41-50	9	9
>90	>5000	>50	>10	10
Quantity				
Section 3: Remediation Efforts				
(1 to 10)	Notification of Agencies			-10
(1 to 10)	Clean up Efforts			-10
Section 4: Previous Violations				
	0 Violations	0		
	1 Violations	4		
	2 Violations	6		
	3 Violations	8		
	4 or More Violations	10		
		Violation Penalty		
Penalty Calculation				
(1 to 30)	Harm Total	0		
(1 to 10)	Quantity Total	0		
(1 to 20)	Remediation Credit	-20		
(1 to 10)	Economic Gain for Violator	0		
(0 to 10)	Previous Violations	0		
	Total Penalty Points	-20		
Fine Assessed	Per Day Times		Days =	\$0
	as of			
	TRUE	\$50		
	FALSE	0		

0

Question F, G, H



March 20, 2018

Barati Bahman
1402 Louisville Highway
Millersville, TN 37072

RE: Notice of Violation – City of Millersville Ordinance No. 10-562.
NPDES Permit No. TNR056092 (EXPIRED)
Sumner County, TN

Dear Mr. Barati:

On February 21, 2018, this office responded to a complaint regarding the presence of petroleum fumes near a tributary to Slaters Creek. This letter serves to document the observations of the investigation, report violations of the City Of Millersville Stormwater Ordinance and to notify you that corrective actions are required. Civil penalties will be assessed in accordance with Chapter 19, Article I, Section 19-113 of the Millersville Code of Ordinances.

Permit Verification

NPDES Permit Number TNR056092, Sector M became effective on December 10, 2002 and expired on December 31, 2006. This permit previously authorized Ace Auto Salvage to discharge its storm water runoff to a wet weather conveyance to Slaters Creek. The City has no evidence of permit coverage since the expiration. Industrial activities related to the dismantling of motor vehicles require coverage under the Tennessee Stormwater Multi-Sector General Permit (TNR050000).

Facility Site Review

Ace Auto Salvage is an auto salvage yard (SIC code 5015) located on approximately 8.44 acres in the City of Millersville. The entire site is used for industrial purposes and the facility consists of an office, two covered garages, a vacant residential structure and scrap vehicle storage. There is also a car crusher and various other heavy machinery onsite. The site is accessed via a concrete driveway from Louisville Highway (US-31W). Nearly all of the vehicles are stored on unpaved areas, and a significant amount of exposed soil is visible. There is an abundance of scrap metal, used tires, auto parts, trash and debris scattered over the property. Much of the vehicle storage yard is severely eroded with limited to no stabilization.

The on-site car crusher is not positioned on an appropriate solid pad and no structural controls are in place. The tank used to store drained fluids is not in adequate working condition – the hose from which fluids are drained was not connected to the tank and there was visible spillage in the area. There were numerous instances of visible oil/grease/petroleum on the ground and improper storage of fuel containers.

The owner of the property did not provide evidence of required permit coverage. A Stormwater Pollution Prevention Plan (SWPPP) was not available for review and there was no structural controls in place. Owner does not have records of required self-monitoring activity. The facility has not submitted annual stormwater reports for several years.

Effluent/Receiving Stream

The entire site is positioned in a valley and discharges to a tributary to Slaters Creek, a 303(d) impaired stream. The site outfall is approximately 425 feet from the outfall to Slaters Creek. Stormwater drains to the right-of-way Louisville Highway (US-31W) and is collected in catch basins that drain directly to the tributary. There are multiple locations of concentrated discharge from the property. There are no stormwater controls targeting sediment or pollutants.



The inspection occurred during a rain event and the stormwater leaving the property was visibly contaminated with high levels of sediment. There were also strong odors of petroleum present. The water flowing in the tributary was extremely discolored as it entered Slaters Creek, with visible . See attached photos.

Specific Violations of City of Millersville Stormwater Ordinance

Based on the City's findings during an initial inspection of your property on 2/21/2018 and subsequent inspection on 2/28/2018, your property is found to be in violation of the following Ordinance items:

Sec. 19-110

- (a) Requirements for all existing locations and developments. The following requirements shall apply to all locations and development at which land disturbing activities have occurred previous to the enactment of this chapter:
- (1) Denuded areas must be vegetated or covered under the standards and guidelines specified in the BMP manual and on a schedule acceptable to the administrator.
 - (2) Cuts and slopes must be properly covered with appropriate vegetation and/or retaining walls constructed.
 - (3) Drainage ways shall be properly covered in vegetation or secured with riprap, channel lining, etc., to prevent erosion.
 - (4) Trash, junk, rubbish, etc. shall be cleared from drainage ways.
 - (5) Stormwater runoff shall be controlled to the extent reasonable to prevent pollution of local waters.

Sec. 19-111

- (1) Scope. This section shall apply to all water generated on developed or undeveloped land entering the municipality's separate storm sewer system

(a) Prohibition of Illicit Discharges

1. No person shall introduce or cause to be introduced into the municipal separate storm sewer system any discharge that is not composed entirely of stormwater. It shall be illegal for any person, business, or organization to intentionally dump liquids or solids that are considered priority pollutants by the EPA onto the ground, parking lots, vehicle storage and maintenance lots, vehicle wash areas, or any other uncontained area where there is a potential for exposure to rain or stormwater runoff and potential for the pollutant to reach public or private stormwater drainage systems, City of Millersville waters or waters of the State of Tennessee.
2. No person shall cause or allow an illicit discharge to the stormwater system, or any component thereof, or onto driveways, sidewalks, parking lots, sinkholes, creek banks, or other areas draining to the stormwater system. Illicit discharges include, but are not limited to:
 - c. Discharges resulting from the cleaning, repair, or maintenance of any type equipment, machinery, or facility including motor vehicles, cement-related equipment, and portable toilet services, etc.,
 - f. Discharges of runoff from material storage areas containing chemicals, fuels, grease, oil, or other hazardous materials,
 - h. Discharges of sediment and construction-related wastes, and other pollutant sources such as discarded building materials, chemicals, trash, fuel, paint etc.,...

- (c) Reduction of stormwater pollutants. Any person responsible for a property or premises, which is, or may be, the source of an illicit discharge shall undertake all practicable measures to implement, at the person's expense, the BMP's necessary to prevent the further discharge of pollutants to the municipal separate storm sewer system. Compliance with all terms and conditions of a valid NPDES permit authorizing the discharge of stormwater associated with industrial activity, to the extent practicable, shall be deemed compliance with the provisions of this section.

1. Every person shall comply with the following minimum requirements
 - a. Littering. No person shall throw, deposit, leave, maintain, keep or permit to be thrown, deposited, placed or left, any refuse, rubbish, garbage or other discarded or abandoned



objects, articles and accumulations, in or upon any street, alley, sidewalk, storm drain, inlet, catch basin, conduit or any other drainage structure, business place or upon any public or private plot of land in the city, so that the same might be or become a pollutant. No person shall throw or deposit litter in any pond, stream, creek, or any water conveyance in the city.

- f. Compliance with best management practices. Where BMP guidelines or requirements have been defined in the City of Millersville's Code of Ordinances or federal, state or city stormwater programs for any activity, operation or facility, which may cause or contribute to stormwater pollution or contamination, and/or discharges of non-stormwater to any watercourse or stormwater conveyance, every person undertaking such activity or operation, or owning or operating such facility, shall comply with such guidelines or requirements. Any person engaged in activities or operations, or owning facilities or property which will or may result in pollutants entering stormwater, the storm drain system or water conveyance shall implement best management practices to the extent they are technologically achievable to prevent and reduce such pollutants. The owner or operator of a commercial or industrial establishment shall provide reasonable protection from accidental discharge of prohibited materials or other wastes into stormwater conveyance or any watercourse. Facilities to prevent accidental discharge of prohibited materials or other wastes shall be provided and maintained at the owner or operator's expense.

- (2) Any person engaged in activities that may result in pollutants entering the stormwater conveyance system shall, to the maximum extent practicable, undertake the measures set forth below to reduce the risk of non-stormwater discharge and/or pollutant discharge.

- (a) Business related activities.

1. Stormwater pollution prevention plan (SWPPP). The stormwater manager may require any business, not limited to new businesses, in the city engaged in activities that may result in a non-stormwater discharge to develop and implement a stormwater pollution prevention plan (SWPPP) that must include an employee training program. Business activities that may require a stormwater pollution prevention plan include, but are not limited to, maintenance, storage, manufacturing, assembly, equipment operations, automotive sales or services, vehicle loading or fueling, and cleanup procedures that are carried out partially or wholly outdoors. A SWPPP shall be required and a copy retained onsite of any business, old or new, situated on any stream bank or considered for any reason a "hot spot". The SWPPP shall be updated at least every five years or at the request of the stormwater manager.
2. Any person conducting business or industrial activities in the city shall prevent pollutants from entering the stormwater conveyance system and shall comply with all applicable federal, state and local laws, ordinances or regulations.

- (c) Compliance with general permits.

1. Any person conducting business, industrial, construction or development activities in the city that are subject to a permit issued by the State of Tennessee, City of Millersville or the United States Environmental Protection Agency, including the construction general permit and the industrial general permit, shall comply with all requirements of such permit.

- (e) Containment and notification of spills.

- a. Notwithstanding other requirements of law, as soon as any person has any knowledge of any illicit spill, or suspected release of materials which are resulting in, or may result in, illicit discharges or pollutants discharging into stormwater or the municipal separate storm sewer system, whether or not responsible for a facility or operation, or responsible for emergency response for a facility or operation, shall immediately notify the appropriate authority.
- b. The person/s responsible for such discharge, either directly or indirectly, shall immediately take all necessary steps to ensure the discovery, containment, and cleanup of such release.
 - i. A report shall be filed with the stormwater manager for the City of Millersville following the containment and cleanup of the illicit spill detailing the location of the spill, exact pollutant/s, outlining the discovery, containment method/s and specific cleanup steps used to bring the



- site into compliance. This report shall be filed at city hall within seven days of the completion of the cleanup.
- ii. When such spill, in the opinion of the stormwater manager is extensive, hazardous, not fully contained, cleanup is not adequate, or site is not compliant within a reasonable time, a report from a licensed professional may be required. The report shall contain the effects of the spill on land, air and/or water as well as all the cleanup requirements. The report shall be filed when the site has been fully cleaned and the licensed professional has approved the outcome. Failure to submit the report as required by the stormwater manager may result in municipal penalties. All costs of such a report will be the responsibility of the individual or agency accountable for cleanup of such spill. Such report shall be filed within seven days of the completion of the cleanup.
 - c. In the event of such a release of hazardous materials the person/s responsible for such discharge, either directly or indirectly shall immediately notify emergency response agencies of the occurrence via emergency dispatch services.
 - d. In the event of a release of non-hazardous materials, the person/s responsible for such discharge, either directly or indirectly shall notify the stormwater manager in person or by telephone or facsimile no later than the next business day. Notifications in person or by telephone shall be confirmed by written report addressed and mailed to the stormwater manager within three business days of the verbal notice. The report shall detail the location of the spill, exact pollutant(s), outline the discovery, containment method(s) and specific cleanup steps used to bring the site into compliance. If the discharge of prohibited materials emanates from a commercial or industrial establishment, the owner or operator of such establishment shall also retain an on-site written record of the discharge and the actions taken to prevent its recurrence. Such records shall be retained for at least ten years.
 - (f) Illegal dumping. It shall be illegal for any person to dump liquids or solids that are considered priority pollutants by the U.S. Environmental Protection Agency (EPA) on the ground where there is potential exposure to rain or Stormwater and potential for the pollutant to reach the Municipal Separate Storm Sewer System of the City of Millersville or any water conveyance. (The EPA Priority Pollutant List can be found at <http://www.epa.gov/waterscience/methods/pollutants.htm>.)

Penalty Assessment

Under the authority provided in Tennessee Code Annotated §68-221-1106, it is declared that any person violating the provisions of this article may be assessed a civil penalty by the City of Millersville of not less than \$50.00 per day or more than \$5,000.00 per day. Each day of violation may constitute a separate offense subject to the maximum fine under the authority provided in the Tennessee Code §68-221-1106.

A stormwater penalty invoice is attached to this Notice of Violation.

Required Corrective Actions

1. Obtain NPDES Permit Coverage under the Tennessee Stormwater Multi-Sector General Permit (TSMP).
2. Develop and implement a Stormwater Pollution Prevention Plan (SWPPP). This shall include all the elements set forth in Sector M of the TSMP.
3. Install appropriate structural controls to manage stormwater runoff and prevent pollution. A guide for Auto Salvage yard Best Management Practices, published by the EPA, is attached for reference.
4. Stabilize all areas of exposed soil, particularly areas subject to vehicular traffic.
5. Remove, repair or replace any defective storage containers for oil, fuel, grease, or other potential pollutants.
6. Remove and properly dispose of trash and debris.
7. Conduct comprehensive site evaluation, stormwater training and self-monitoring of storm water quality before December 31, 2018.
8. Begin conducting and documenting quarterly visual inspections before June 30, 2018.



A letter addressing the violations cited in this Notice shall be returned to this office within 30 days of receipt of this letter. A follow-up inspection will be scheduled upon receipt of your response.

We appreciate your cooperation in this matter.

Sincerely,
City of Millersville

Name, Title

Encl: Photos from 2/21/18 site inspection
SW Penalty Invoice
EPA Fact Sheet for Auto Salvage Yards

cc: TDEC Division of Water Resources
Robert Pelosi, PE – OHM Advisors
Robert Wheeler – City Attorney



Ace Auto Salvage entrance from Louisville Highway.



View from entrance looking into lot.



Access drive to the rear of property, left of office/garage.



From car crushing area looking towards the road.



Car crusher and front-end loader.



Fuel storage tank and scrap pile.



Interior view of fuel tank. Hose disconnected.



Fuel spill on exposed soil.



Miscellaneous auto parts and debris scattered on exposed soil near a concentrated flow of stormwater runoff.



Polluted runoff entering a drainage basin on the property. No preventative measures in place.



Concentrated runoff from vehicle storage area.



Concentrated runoff from vehicle storage area entering a drainage structure. Filter sock placed by City.



Polluted water discharging into catch basin near entrance, within TDOT right-of-way.



Looking upstream towards site entrance along TDOT roadway ditch line.



Downstream end of culvert under Louisville highway, discharging to tributary.



View of tributary.



Outfall of tributary to Slaters Creek.



Outfall of tributary to Slaters Creek.



Upstream view of Slaters Creek from bridge at Rader Rd. Approximately 0.3 miles downstream from tributary outfall.



Downstream view of Slaters Creek from bridge. Approximately 0.3 miles downstream from tributary outfall.



STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF WATER RESOURCES

Nashville Environmental Field Office
711 R.S. Gass Boulevard
Nashville, TN 37216

Phone 615-687-7000 Statewide 1-888-891-8332 Fax 615-687-7078

April 23, 2018

Mr. Bahman Barati
Ace Auto Salvage, Inc.
1402 Louisville Highway
Millersville, TN 37072

Certified Mail Receipt
7017 0660 0000 4967 8593

Subject: Complaint Investigation – Notice of Violation
 Ace Auto Salvage
 Slater's Creek, Sumner County, TN
 DWR Complaint #47573

Dear Mr. Barati:

On February 21, 2017, staff from the City of Millersville and the Division of Water Resources (Division) conducted a complaint investigation at the Ace Auto Salvage site located at 1402 Louisville Highway and identified violations that are in need of corrective actions. Additional information related to these violations and the requested corrective actions can be found on the following page.

Unauthorized non-stormwater discharges (i.e. stormwater mixed with petroleum products) are a violation of Tennessee Code Annotated §69-3-114(a) of the *Tennessee Water Quality Control Act of 1977*. Therefore, this letter will serve as a formal Notice of Violation.

In order to begin bringing this site into compliance the Division requests that you complete the corrective actions outlined on the following page within specified timelines. If any corrective actions or stabilization measures have already been implemented please submit photographic documentation of them along with your written response to this letter.

During our site visit, the division observed the following items that are in need of corrective actions:

- Sediment and petroleum products (oil, grease and gasoline) actively discharging into a tributary of Slater's Creek.
- Ace Auto Salvage does not have an active Tennessee Stormwater Multi-Sector General Permit for Industrial Activities (TMSP) and therefore is in violation with the TMSP and Tennessee Water Quality Control Act of 1977.

Please submit the following items to the Nashville Environmental Field Office within the specified timeframe:

1. Immediately eliminate any non-stormwater discharges that are occurring at the site.
2. On or before **May 8, 2018**, submit written and time date stamped photographic documentation to the Division indicating what measures have been taken to eliminate the non-stormwater discharge.
3. On or before **May 8, 2018**, Submit Form CN-1108 *Notice of Intent (NOI) for Stormwater Discharges Associated with Industrial Activity under the Tennessee Multi-Sector General Permit (TMSP)* along with a topographic map showing the location of the facility and pay any fees associated with the TMSP application
4. On or before **June 7, 2018**, develop and submit a Stormwater Pollution Prevention Plan (SWPPP) for the facility that meets the proper "Sector" requirements.

Form CN-1108 as well as information about applying for the TMSP can be found at the following link:
<https://www.tn.gov/environment/permit-permits/water-permits/npdes-permits/npdes-stormwater-permitting-program/npdes-industrial-stormwater-general-permit.html>

All application materials can be submitted to Mr. Jim McAdoo with the Division. Please contact Mr. McAdoo at (615) 532-0684 or by email at jim.McAdoo@tn.gov for assistance with applying for the TMSP.

Failure to remedy these violations within the specified timeframes may result in possible further action, which may include monetary penalties. If you have any questions, please contact Mr. Bill Murph at (615) 687-7124 or by e-mail at Bill.Murph@tn.gov.

Sincerely,



Bill Murph
Division of Water Resources

pc: Mr. Michael Barr, City of Millersville
Mr. Jim McAdoo, TDEC-DWR, Jim.McAdoo@tn.gov
DWR Compliance and Enforcement



CONSTRUCTION SITE STORMWATER RUNOFF POLLUTANT CONTROL
(SECTION 4.2.4)

(Question 5)

Supporting Materials

Question A

- (2) Alternative minimum requirements for on-site management of stormwater discharges have been established in a stormwater management plan that has been approved by the Administrator.
- (3) Provisions are made to manage stormwater by an off-site facility. The off-site facility must be in place and designed to provide the level of stormwater control that is equal to or greater than that which would be afforded by on-site practices. Further, the facility must be operated and maintained by an entity that is legally obligated to continue the operation and maintenance of the facility.
- (c) Downstream damage, etc. prohibited. In order to receive a waiver, the applicant must demonstrate to the satisfaction of the Administrator that the waiver will not lead to any of the following conditions downstream:
 - (d) Deterioration of existing culverts, bridges, dams, and other structures;
 - (1) Degradation of biological functions or habitat;
 - (2) Accelerated stream bank or streambed erosion or siltation;
 - (3) Increased threat of flood damage to public health, life or property.
 - (e) Land disturbance permit not to be issued where waiver requested. No land disturbance permit shall be issued where a waiver has been requested until the waiver is granted. If no waiver is granted, the plans must be resubmitted with a stormwater management plan.

19-106. Stormwater system design and management standards.

Stormwater design or BMP manual.

- (a) Adoption. The City of Millersville adopts as its stormwater design and best management practices (BMP) manual the following publications, which are incorporated by reference in this ordinance as is fully set out herein:
 - (1) Tennessee Sediment and Erosion Control Hand Book:
[http://www.mtas.utk.edu/knowledgebase.nsf/2efb230af01fb972852569d1007223c2/db039e1ad7a4293b85256c4d00477e7b/\\$FILE/sediment%20and%20erosion%20control.pdf](http://www.mtas.utk.edu/knowledgebase.nsf/2efb230af01fb972852569d1007223c2/db039e1ad7a4293b85256c4d00477e7b/$FILE/sediment%20and%20erosion%20control.pdf)
 - (2) Tennessee's Guide to Selection and Design of Best Management Practices. <http://eerc.ra.utk.edu/WRRC.html>
 - (3) Appendix A Water Quality Buffer Zone Policy
 - (4) Appendix B Dry Detention Basin Policy

- (b) This manual includes a list of acceptable BMPs including the specific design performance criteria and operation and maintenance requirements for each stormwater practice. The manual may be updated and expanded from time to time, by the administrator or a new manual may be adopted by resolution by the City Commission. Storm water facilities that are designed, constructed and maintained in accordance with these BMP criteria will be presumed to meet the minimum water quality performance standards.
- (c) General performance criteria for stormwater management. Unless granted a waiver or judged by the Administrator to be exempt, the following performance criteria shall be addressed for stormwater management at all sites:
- (1) All site designs shall control the peak flow rates of stormwater discharge associated with design storms specified in this ordinance or in the BMP manual and reduce the generation of post construction stormwater runoff to pre-construction levels. These practices should seek to utilize pervious areas for stormwater treatment and to infiltrate stormwater runoff from driveways, sidewalks, rooftops, parking lots, and landscaped areas to the maximum extent practical to provide treatment for both water quality and quantity.
 - (2) To protect stream channels from degradation, specific channel protection criteria shall be provided as prescribed in the BMP manual.
 - (3) Stormwater discharges to critical areas with sensitive resources (i.e., cold water fisheries, shellfish beds, swimming beaches, recharge areas, water supply reservoirs) may be subject to additional performance criteria, or may need to utilize or restrict certain stormwater management practices.
 - (4) Stormwater discharges from “hot spots” may require the application of specific structural BMPs and pollution prevention practices such as the installation of multi-stage water filtration units.
 - (5) Prior to or during the site design process, applicants for land disturbance permits shall consult with the Administrator to determine if they are subject to additional stormwater design requirements.
 - (6) The calculations for determining peak flows as found in the BMP manual shall be used for sizing all stormwater facilities.

(d) Minimum control requirements.

- (1) Stormwater designs shall meet the multi-stage storm frequency storage requirements as identified in the BMP manual unless the administrator has granted the applicant a full or partial waiver for a particular BMP.
- (2) If hydrologic or topographic conditions warrant greater control than that provided by the minimum control requirements, the administrator may impose any and all additional requirements deemed necessary to control the volume, timing, and rate of runoff.

(e) Stormwater management plan requirements. The stormwater management plan shall include sufficient information to allow the administrator to evaluate the environmental characteristics of the project site, the potential impacts of all proposed development of the site, both present and future, on the water resources, and the effectiveness and acceptability of the measures proposed for managing Stormwater generated at the project site. To accomplish this goal the stormwater management plan shall include the following:

- (1) Topographic Base Map: A topographic base map of the site which extends beyond the limits of the proposed development and indicates:
 - (a) Existing surface water drainage including streams, ponds, culverts, ditches, sink holes, wetlands; and the type, size, elevation, etc., of nearest upstream and downstream drainage structures;
 - (b) Current land use including all existing structures, locations of utilities, roads, and easements;
 - (c) All other existing significant natural and artificial features;
 - (d) Proposed land use with tabulation of the percentage of surface area to be adapted to various uses; drainage patterns; locations of utilities, roads and easements; the limits of clearing and grading;
 - (e) Proposed structural BMPs;
 - (f) A written description of the site plan and justification of proposed changes in natural conditions.

- (2) Calculations: Hydrologic and hydraulic design calculations for the pre-development and post-development conditions for the design storms specified in the BMP manual. These calculations must show that the proposed stormwater management measures are capable of controlling runoff from the site in compliance with this ordinance and the guidelines of the BMP manual. Such calculations shall include:
- (a) A description of the design storm frequency, duration, and intensity where applicable;
 - (b) Time of concentration;
 - (c) Soil curve numbers or runoff coefficients including assumed soil moisture conditions;
 - (d) Peak runoff rates and total runoff volumes for each watershed area;
 - (e) Infiltration rates, where applicable;
 - (f) Culvert, Stormwater sewer, ditch and/or other stormwater conveyance capacities;
 - (g) Flow velocities;
 - (h) Data on the increase in rate and volume of runoff for the design storms referenced in the BMP manual; and
 - (i) Documentation of sources for all computation methods and field test results.
- (3) Soils Information: If a stormwater management control measure depends on the hydrologic properties of soils (e.g., infiltration basins), then a soils report shall be submitted. The soils report shall be based on on-site boring logs or soil pit profiles and soil survey reports. The number and location of required soil borings or soil pits shall be determined based on what is needed to determine the suitability and distribution of soil types present at the location of the control measure.
- (4) Maintenance and Repair Plan: The design and planning of all stormwater management facilities shall include detailed maintenance and repair procedures to ensure their continued performance. These plans will identify the parts or components of a stormwater

management facility that need to be maintained and the equipment and skills or training necessary. Provisions for the periodic review and evaluation of the effectiveness of the maintenance program and the need for revisions or additional maintenance procedures shall be included in the plan. A permanent elevation benchmark shall be identified in the plans to assist in the periodic inspection of the facility.

- (5) Landscaping Plan: The applicant must present a detailed plan for management of vegetation at the site after construction is finished, including who will be responsible for the maintenance of vegetation at the site and what practices will be employed to ensure that adequate vegetative cover is preserved. Where it is required by the BMP, this plan must be prepared by a registered landscape architect licensed in Tennessee.
- (6) Maintenance Easements: The applicant must ensure access to the site for the purpose of inspection and repair by securing all the maintenance easements needed. These easements must be binding on the current property owner and all subsequent owners of the property and must be properly recorded in the land record.
- (7) Maintenance Agreement:
 - (a) The owner of property to be served by an on-site stormwater management facility must execute an inspection and maintenance agreement that shall operate as a deed restriction binding on the current property owner and all subsequent property owners.
 - (b) The maintenance agreement shall:
 - (1) Assign responsibility for the maintenance and repair of the stormwater facility to the owner of the property upon which the facility is located and be recorded as such on the plat for the property by appropriate notation.
 - (2) Provide for a periodic inspection by the property owner for the purpose of documenting maintenance and repair needs and ensure

compliance with the purpose and requirements of this ordinance. The property owner will arrange for this inspection to be conducted by a registered professional engineer licensed to practice in the State of Tennessee who will submit a sealed report of the inspection to the administrator. It shall also grant permission to the city to enter the property at reasonable times and to inspect the stormwater facility to ensure that it is being properly maintained.

- (3) Provide that the minimum maintenance and repair needs include, but are not limited to: the removal of silt, litter and other debris, the cutting of grass, grass cuttings and vegetation removal, and the replacement of landscape vegetation, in detention and retention basins, and inlets and drainage pipes and any other stormwater facilities. It shall also provide that the property owner shall be responsible for additional maintenance and repair needs consistent with the needs and standards outlined in the BMP manual.
- (4) Provide that maintenance needs must be addressed in a timely manner, on a schedule to be determined by the administrator.
- (5) Provide that if the property is not maintained or repaired within the prescribed schedule, the administrator shall perform the maintenance and repair at its expense, and bill the same to the property owner. The maintenance agreement shall also provide that the City's cost of performing the maintenance shall be a lien against the property.

(c) The municipality shall have the discretion to accept the dedication of any existing or future stormwater management facility, provided such facility meets the requirements of this ordinance, and includes adequate and perpetual access and sufficient areas, by easement or otherwise, for inspection and regular maintenance. Any stormwater facility accepted by the municipality must also meet the municipality's construction standards and any other standards and specifications that apply to the particular stormwater facility in question.

(8) Sediment and Erosion Control Plans: The applicant must prepare a sediment and erosion control plan for all construction activities that complies with §19.106(5) below.

(f) Sediment and erosion control plan requirements. The sediment and erosion control plan shall accurately describe the potential for soil erosion and sedimentation problems resulting from land disturbing activity and shall explain and illustrate the measures that are to be taken to control these problems. The length and complexity of the plan is to be commensurate with the size of the project, severity of the site condition, and potential for off-site damage. The plan shall be sealed by a registered professional engineer licensed in the state of Tennessee. The plan shall also conform to the requirements found in the BMP manual, and shall include at least the following:

- (1) Project Description - Briefly describe the intended project and proposed land disturbing activity including number of units and structures to be constructed and infrastructure required.
- (2) A topographic map with contour intervals of five (5) feet or less showing present conditions and proposed contours resulting from land disturbing activity.
- (3) All existing drainage ways, including intermittent and wet-weather. Include any designated floodways or flood plains.
- (4) A general description of existing land covers. Individual trees and shrubs do not need to be identified.
- (5) Stands of existing trees as they are to be preserved upon project completion, specifying their general location on the property. Differentiation shall be made between existing trees to be preserved,

trees to be removed and proposed planted trees. Tree protection measures must be identified, and the diameter of the area involved must also be identified on the plan and shown to scale. Information shall be supplied concerning the proposed destruction of exceptional and historic trees in setbacks and buffer strips, where they exist. Complete landscape plans may be submitted separately. The plan must include the sequence of implementation for tree protection measures.

- (6) Approximate limits of proposed clearing, grading and filling.
- (7) Approximate flows of existing stormwater leaving any portion of the site.
- (8) A general description of existing soil types and characteristics and any anticipated soil erosion and sedimentation problems resulting from existing characteristics.
- (9) Location, size and layout of proposed stormwater and sedimentation control improvements.
- (10) Proposed drainage network.
- (11) Proposed drain tile or waterway sizes.
- (12) Approximate flows leaving site after construction and incorporating water run-off mitigation measures. The evaluation must include projected effects on property adjoining the site and on existing drainage facilities and systems. The plan must address the adequacy of outfalls from the development: when water is concentrated, what is the capacity of waterways, if any, accepting stormwater off-site; and what measures, including infiltration, sheeting into buffers, etc., are going to be used to prevent the scouring of waterways and drainage areas off-site, etc.
- (13) The projected sequence of work represented by the grading, drainage and sedimentation and erosion control plans as related to other major items of construction, beginning with the initiation of excavation and including the construction of any sediment basins or retention facilities or any other structural BMP's.
- (14) Specific remediation measures to prevent erosion and sedimentation run-off. Plans shall include detailed drawings of all control measures

Question B

19-104. Land Disturbing Permits.

(a) When required. Every person will be required to obtain a land disturbance permit from the City of Millersville Stormwater Management Department in the following cases:

- (1) Land disturbing activity that disturbs one (1) or more acres of land and involves grubbing, clearing, grading or excavation;
- (2) Land disturbing activity of less than one (1) acre of land if such activity is part of a larger common plan of development that affects one (1) or more acre of land and involves grubbing, clearing, grading or excavation;
- (3) Land disturbing activity of less than one (1) acre of land, if in the discretion of the Stormwater Manager such activity poses a unique threat to water, or public health or safety;
- (4) The creation and use of borrow pits, fill areas and / or stockpiles.

(b) Building permit. No building permit shall be issued until the applicant has completed a Notice of Intent and obtained a land disturbance permit where the same is required by this ordinance.

(1) Prior to issuance of a building permit for small lots, the owner or operator of the lot disturbing less than 1 acre shall prepare and adhere to small lot erosion prevention and sediment control plan that identifies the erosion prevention and sediment control measures to be employed on the site,

(a) The small lot erosion prevention plan shall be prepared in accordance with the requirements of City of Millersville Best Management Practices.

(b) The Stormwater Manager has the discretion to require a full Stormwater Management Plan as deemed necessary to protect streams and adjacent properties from erosion and off-site sedimentation.

Question C

(e) Failure to meet or maintain design or maintenance standards.

- (1) If a responsible party fails or refuses to meet the design or maintenance standards required to properly maintain the Stormwater systems within the City of Millersville for the purpose of flood prevention, channel protection, water quality and/or public safety for Stormwater facilities, erosion prevention, sediment control and/or Stormwater systems under this ordinance, the Stormwater Manager, after reasonable notice, may choose to begin levying fines of not less than \$50.00, or more than \$5,000.00, assessed each day the violation continues or may choose to correct a violation of the design standards or maintenance needs by ordering corrective action to be performed by the city or others until all necessary work to place the facility in proper working condition is completed.
- (2) In the event that the Stormwater Management Facility becomes a danger to public safety or public health, the Stormwater Manager shall notify in writing the party responsible for maintenance of the Stormwater Management Facility. Upon receipt of that notice, the responsible person shall have seven (7) days to begin maintenance and repair of the facility in an approved manner and shall complete the repair within thirty (30) days. Failure to comply will result in fines of not less than \$50.00 and not more than \$5000.00 assessed each day the site remains in violation.
 - (a) In the event that corrective action is not completed within the thirty (30) days, the Stormwater Manager may take necessary corrective action. The cost of any action by the City of Millersville under this section shall be charged to the responsible party. In such cases where a performance bond or other security exists, the city shall utilize the bond for funding of the corrective actions. In such cases where a performance bond or other security does not exist or is not sufficient to cover the cost incurred, the owner shall reimburse the city for all of its direct and related expenses. If all expenses incurred by the city have not been received within 10-days from the date the owner receives the

invoice, a lien shall be recorded in the county of residence against such property.

19-109. Buffers.

- (a) New development and significant redevelopment shall include a waterway buffer if the property includes or is adjacent to any “blue line” streams or intermittent “blue line” streams as indicated on USGS map, and for all waterways where a floodway and floodplain have been determined. The buffer shall be an area where the surface is left in its natural state and is not disturbed by construction.
- (b) If the buffer must extend at least 50 feet perpendicular to the floodway on each side of the waterway. If a floodway has not been determined, the buffer must extend at least 25 feet beyond each side of the top of bank of stream, creek, or unnamed waterway.
- (c) The administrator may grant exemptions as needed for roads and utilities which cross waterways and pedestrian trails and walkways proximate to waterways. The administrator may also reduce the buffer zone requirements when extreme loss of buildable area, as defined by a 50% or greater loss on a lot or parcel occurs.
- (d) All water quality buffer zones must be protected during development activities. Prior to the initiation of development activities, ensure adequate visibility of the water quality buffer zones by staking and flagging. Permanent boundary markers, in a form approved by the Millersville Public Works Department, shall be installed at the completion of the development activities.

19-110. Existing Locations and Developments

- (a) Requirements for all existing locations and developments. The following requirements shall apply to all locations and development at which land disturbing activities have occurred previous to the enactment of this ordinance:
 - (1) Denuded areas must be vegetated or covered under the standards and guidelines specified in the BMP manual and on a schedule acceptable to the administrator.
 - (2) Cuts and slopes must be properly covered with appropriate vegetation and/or retaining walls constructed.
 - (3) Drainage ways shall be properly covered in vegetation or secured with riprap, channel lining, etc., to prevent erosion.
 - (4) Trash, junk, rubbish, etc. shall be cleared from drainage ways.



**PERMANENT STORMWATER MANAGEMENT AT NEW DEVELOPMENT
AND REDEVELOPMENT PROJECTS**

(SECTION 4.2.5)

(Question 6)

Supporting Materials

Question A

management facility that need to be maintained and the equipment and skills or training necessary. Provisions for the periodic review and evaluation of the effectiveness of the maintenance program and the need for revisions or additional maintenance procedures shall be included in the plan. A permanent elevation benchmark shall be identified in the plans to assist in the periodic inspection of the facility.

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Question B

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Question C

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- (3) Land disturbing activity of less than one (1) acre of land, if in the discretion of the Stormwater Manager such activity poses a unique threat to water, or public health or safety;
- (4) The creation and use of borrow pits, fill areas and / or stockpiles.

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(a) The small lot erosion prevention plan shall be prepared in accordance with the requirements of City of Millersville Best Management Practices.

(b) The Stormwater Manager has the discretion to require a full Stormwater Management Plan as deemed necessary to protect streams and adjacent properties from erosion and off-site sedimentation.



STORMWATER MANAGEMENT FOR MUNICIPAL OPERATIONS

(SECTION 4.2.6)

(Question 7)

Supporting Materials

Question A

Standard Operating Procedure for:		
3.11 Vehicle and Equipment Storage		
Purpose of SOP:	To protect stormwater from petroleum products that may drip or leak from vehicles and equipment being stored or from dirt and sediment that accumulate in the storage areas.	

Always:

- Inspect parking areas for staining/leaks on a schedule established by the appropriate personnel.
- Use drip pans for vehicles that drip a lot (provide a labeled location to empty and store drip pans).
- Address a known leak or drip as soon as possible.

Whenever Possible:

- Store vehicles inside.
- Store vehicles on paved areas if you can street sweep regularly to remove drips/leaks/dirt.
- Perform street sweeping of paved areas on a schedule established by the appropriate personnel, and dispose of street sweepings properly.
- Maintain vehicles to prevent leaks from occurring.
- Perform a pre-trip inspection of vehicle.

Never:

- Never store leaking vehicles over a storm drain.

Other Related SOPs:
<ul style="list-style-type: none"> - Street Sweeping - Spill Cleanup - Petroleum and Chemical Disposal - General Facility Housekeeping

Standard Operating Procedure for:		
3.12 Vehicle and Equipment Washing		
Purpose of SOP:	To protect stormwater using proper vehicle and equipment washing techniques, proper washing locations, and proper disposal of wash water.	

Always:

- Wash vehicles and equipment in a designated area.
- Discharge all wash water containing degreasers, acids, bases, and/or metal brighteners to an on-site treatment facility, the sanitary sewer in accordance with the treatment plant standards, or an approved holding tank. If these are not available, discharge to a vegetated buffer.

Whenever Possible:

- Use a biodegradable, phosphate free soap.
- Use a commercial car wash for light duty vehicles.
- Wash cars on gravel, grass, or other permeable surfaces.
- Educate personnel on proper washing practices.
- Maintain vehicles and equipment to prevent leaks/drips, which would more easily enter wash water.
- Obtain and use drain guards (filter inserts) to catch sediments, petroleum products, etc. that might enter the storm drains as a result of vehicle washing.
- Minimize water and soap use when rinsing or washing vehicles.

Never:

- Never perform engine washing outside or over a storm drain.
- Never wash vehicles over a storm drain or near drinking water wells.

Other Related SOPs:	
-	General Facility Housekeeping
-	Alternative Products Use/Storage/Disposal

Standard Operating Procedure for:

3.13 Vehicle and Equipment Fueling



Purpose of SOP:

To prevent stormwater contamination originating from vehicle and equipment fueling.

Always:

- Fuel carefully to minimize drips to the ground surface.
- Maintain clean fuel dispensing areas using dry cleanup methods.
- Utilize fueling safeguards. Clearly label and tag all valves to reduce human error.
- Train employees and subcontractors on proper fueling methods and spill cleanup techniques.
- Maintain fuel storage tanks in accordance with local, state and federal laws.
- Have absorbent spill cleanup kits and materials available at fueling areas.
- Immediately clean up spills and properly dispose of contaminated soil and cleanup materials.

Whenever Possible:

- Install a canopy or roof over aboveground storage tanks.
- Regularly inspect fueling equipment for corrosion and structural failure, cracks in foundations, and physical damage to container systems.
- Use designated fueling areas built upon a level impervious surface (hard cement is best). If paved with asphalt, add a protective coating to create an impervious surface.
- Design fueling areas to minimize stormwater exposure. Prevent run-on and ponding of water, and use secondary containment systems.
- Protect storm drains from fueling areas using berms and dikes.
- Use drip pans or absorbent pads during fueling to collect leaks.
- Add automatic shutoff mechanisms and vapor recovery nozzles to fueling equipment.
- Install protective guards around fueling equipment, tanks, and piping to prevent collisions.

Never:

- "Top off" fuel tanks. Post signs to remind employees.
- Hose down or bury a fuel spill.

Other Related SOPs:

- General Facility Housekeeping
- Alternative Products Use/Storage/Disposal
- Vehicle Maintenance

Standard Operating Procedure for:		
3.14 Spill Cleanup		
Purpose of SOP:	To protect stormwater by educating employees on proper spill cleanup procedures, state reporting requirements and preventative actions.	

Always:

- Stop the source of the spill.
- Contain any liquids.
- Contact the **TDEC** to report any size spill.

- Cover the spill with absorbent material such as kitty litter, sawdust, or oil absorbent pads. Do not use straw. Dispose of used absorbent material properly.
- Use water only when necessary and minimize use.
- Contact municipal officials _____ (phone #).
- Develop and maintain a Spill Prevention, Control, and Countermeasure (SPCC) Plan if the facility stores more than 1,320-gallons of petroleum.
- Fit petroleum and chemical storage containers with secondary containment structures.
- Keep a spill kit in areas where petroleum or hazardous materials are stored.
- Train employees in spill response procedures and equipment.
- Deploy containment booms if spill could potentially reach a storm drain or waterbody.
- Position mats to contain drips from equipment or vehicles until they can be repaired.

Whenever Possible:

- Seal the floor with paint to prevent absorption of fluids into concrete.
- Install low-level or low-pressure alarms and/or cut-off systems on hydraulic equipment.

Never:

- Never wash a spill into the storm drain or a water body.
- Never leave a spill without cleaning it up.

Other Related SOPs:	
-	Petroleum and Chemical Handling
-	Petroleum and Chemical Storage
-	General Facility Housekeeping
-	Fertilizer and Pesticide Storage and Disposal

Standard Operating Procedure for:		
3.15 Parts Cleaning		
Purpose of SOP:	To protect stormwater by practicing proper parts cleaning techniques and disposing of waste cleaners properly.	

Always:

- Perform all cleaning in a designated area to minimize the potential for spills.
- Store waste cleaners in properly labeled containers in accordance with regulations.
- Dispose of all waste cleaners properly with a licensed contractor.

Whenever Possible:

- The variety of cleaners should be minimized to make recycling and disposal simpler.
- Use citrus-based cleaners and dispose of properly.
- Use steam cleaning and pressure washing instead of solvents; however wastewater must be discharged to an oil/water separator and the waste water treatment plant notified.

Never:

- Never dispose of spent cleaners down the floor drains, sinks or storm drain inlets.

Other Related SOPs:	
	<ul style="list-style-type: none"> - Spill Cleanup - Alternative Product Use/Storage/Disposal - Petroleum and Chemical Handling - Petroleum and Chemical Disposal - Petroleum and Chemical Storage

Standard Operating Procedure for:		
3.16 Spare Parts Storage		
Purpose of SOP:	To protect stormwater by properly storing spare parts. Improper storage of materials can result in pollutants and toxic materials entering ground and surface water supplies.	

Always:

- Store spare parts in a designated area.
- Use drip pans for any parts that are dripping.

Whenever Possible:

- Store spare parts inside or under cover.
- Monitor storage areas for staining/leaks on a schedule decided on by the appropriate personnel.
- Clean the majority of petroleum products from the parts that are to be stored.

Other Related SOPs:
<ul style="list-style-type: none"> - Street Sweeping - Spill Cleanup - Vehicle and Equipment Storage

Standard Operating Procedure for:		
3.17 Alternative Products Use/Storage/Disposal		
Purpose of SOP:	To protect stormwater by using alternative products in an effort to decrease the presence of more toxic products in stormwater.	

Always:

- Use, store, and dispose of alternative products according to manufacturer's specifications.

Whenever Possible:

- Use alternative products when deemed appropriate:
 - Instead of solvent-based parts cleaners use citrus-based cleaners or steam/pressure wash to an oil/water separator.
 - Instead of herbicides use bark mulch.
 - Instead of fertilizer use compost or manure.
 - Instead of pesticides plant marigolds, onion, or garlic as deterrents; release or attract beneficial insects.
- Train employees on the benefits of using alternative products.
- Minimize waste by purchasing recyclable products that have minimal packaging.
- Use less harmful deicers such as calcium magnesium acetate, potassium acetate, or organic deicers such as Magic Salt™.
- Use a "pre-mix" of 4 to 1 sodium chloride and calcium chloride, which is the most cost-effective alternative to straight salt.
- Substitute synthetic fertilizers with natural compost and organic fertilizers to improve soil pH, texture and fertility, and cause less leaching to groundwater.
 - Use no-phosphorus lawn fertilizer (phosphorus is rarely lacking in Maine soils).
 - Use natural or certified organic fertilizers with low phosphorus levels (8-2-4, 6-2-4, 9-1-1, 6-1-1).
- Use slow-release nitrogen fertilizers.
- Reduce or eliminate mown lawn in areas that are not actively used.
- Consider converting unused turf to meadow or forest.

Other Related SOPs:	
	- General Facility Housekeeping
	- Lawncare - Fertilizing
	- Lawncare - Weed and Pest Control
	- Lawncare - Mowing and Watering
	- Vehicle and Equipment Washing
	- Parts Cleaning
	- Salt Application
	- Petroleum and Chemical Storage
	- Petroleum and Chemical Handling

Standard Operating Procedure for:		
3.18 Petroleum and Chemical Disposal		
Purpose of SOP:	To protect stormwater from petroleum and chemical products due to improper disposal practices.	

Always:

- Dispose of petroleum/chemicals according to manufacturer's specifications and state and federal regulations.
- Maintain tracking of chemicals and petroleum products being disposed off-site.
- Store waste petroleum/chemical products in a designated area labeled as such.
- Label each waste container with its contents.
- Transport used petroleum and chemical products with a licensed transporter and maintain records for three years.
- Train employees on proper disposal practices.
- Drain used oil filters for 24-hours before disposal (disposal in regular trash allowed).
- Inspect waste storage areas for staining/leaks on a regular basis.

Whenever Possible:

- Minimize the number of solvents used to reduce the variety of waste generated and to make recycling easier.
- Use safer alternatives. (see Alternative Products SOP)
- If burning used oil for on-site heat, analyze for ^{TN} Waste Oil parameters (Arsenic, Lead, Cadmium, Chromium, F- listed Halogens, Flashpoint, PCBs) approximately once every 1,000 gallons.

Never:

- Never place hazardous waste in solid waste dumpsters.
- Never pour liquid waste down floor drains, sinks or outdoor storm drain inlets.
- Never mix petroleum waste and chemical waste.
- Never dispose of any gasoline-contaminated waste in the regular trash. Dispose of it only as a hazardous waste.

Other Related SOPs:	
-	General Facility Housekeeping
-	Spill Cleanup
-	Alternative Products Use/Storage/ Disposal

Standard Operating Procedure for:

3.19 Petroleum and Chemical Handling



Purpose of SOP:

To protect stormwater by properly managing petroleum products and chemicals used by municipalities.

Always:

- Train employees in hazardous material handling, safety, spill cleanup and reporting on an annual basis.
- Handle petroleum products and chemicals according to manufacturer's specifications.
- Conduct oil changes indoors for equipment that fits indoors.
- Use proper protective equipment.
- Maintain Material Safety Data Sheets (MSDS) for all chemicals used.
- Make MSDS sheets available on materials that require special handling, storage and/or disposal.
- Create a sign-off sheet for employees stating that they know the location of the MSDS(s).

Whenever Possible:

- Assess hazardous material needs to minimize the amount and variety of hazardous material in storage.
- Transfer materials from one container to another indoors in a well ventilated area. Properly label containers.
- Train new employees within six months of hire.

Never:

- Never treat or dispose of hazardous materials unless licensed to do so.
- Never mix petroleum or chemicals unless directed by manufacturer's instructions.

Other Related SOPs:

- Parts Cleaning
- Spill Cleanup
- General Facility Housekeeping
- Alternative Products Use/Storage/Disposal
- Mowing/Trimming

Standard Operating Procedure for:

3.20 Petroleum and Chemical Storage - Bulk



Purpose of SOP:

To protect stormwater by properly storing bulk petroleum products and chemicals (containers larger than 55 gallons).

Always:

- Store materials away from high traffic areas, posted with appropriate signage.
- Store materials according to manufacturer's specifications in approved containers and conditions.
- Be prepared for possible spills by having a spill kit nearby.
- Develop and use a Spill Prevention Control and Countermeasure (SPCC) plan if storing more than 1,320 gallons of petroleum (required).
- Store incompatible hazardous materials in separate areas.
- Inspect storage areas for leaks or drips frequently.
- Store bulk items within secondary containment areas if bulk items are stored outside.
- Conduct annual employee training to reinforce proper storage techniques for petroleum and chemical products.

Whenever Possible:

- Store bulk chemicals and petroleum products inside or under cover.
- Provide secondary containment for interior storage.

Never:

- Never store bulk chemicals or petroleum products near a storm drain.

Other Related SOPs:

- Chemical Handling
- Spill Cleanup
- General Facility Housekeeping

Standard Operating Procedure for:

3.21 Petroleum and Chemical Storage – Small Quantity



Purpose of SOP:

To protect stormwater from pollution by properly storing petroleum products or chemicals (containers smaller than 55-gallons).

Always:

- Store materials away from high traffic areas.
- Store materials according to manufacturer's specifications (e.g. in a flammable materials storage cabinet).
- Dispose of unused or waste materials properly.
- Train employees on proper storage procedures for petroleum and chemical products.
- Store materials in their original containers to maintain appropriate labeling.
- Be prepared for spills by having a spill kit nearby.
- Frequently inspect the storage areas for leaks or spills.
- Conduct annual employee training to reinforce proper storage techniques for petroleum and chemical products.

Never:

- Never store petroleum or chemical products near a floor drain or stormwater inlet.

Other Related SOPs:

- Spill Cleanup
- General Facility Housekeeping

Standard Operating Procedure for:		
3.22 Garbage Storage		
Purpose of SOP:	To protect stormwater from contamination by properly storing garbage. Garbage and leachate can be transported by stormwater and enter the storm drain system and receiving waterbodies.	

Always:

- Dispose of hazardous materials according to manufacturer's specifications and applicable regulations.
- Cover rubbish bins to keep rubbish and leachate in and wind and rain out.

Whenever Possible:

- Store garbage containers beneath a covered structure or inside to prevent contact with stormwater.
- Install berms, curbing or vegetation strips around storage areas to control water entering/leaving storage areas.
- Locate dumpsters on a flat, concrete surface that does not slope or drain directly into the storm drain system.
- Locate dumpsters and trash cans in convenient, easily observable areas.
- Provide properly-labeled recycling bins to reduce the amount of garbage disposed.
- Inspect garbage bins for leaks regularly, and have repairs made immediately by responsible party.
- Keep bins free of improperly discarded trash.
- Provide training to employees to prevent improper disposal of general trash.
- Minimize waste by purchasing recyclable products that have minimal packaging.
- Request/use dumpsters without drain holes.

Never:

- Never place hazardous wastes in a dumpster or trash bin.

Other Related SOPs:
- General Facility Housekeeping

Standard Operating Procedure for:

3.23 General Facility Housekeeping



Purpose of SOP: To protect stormwater by maintaining a clean, organized facility.

Always:

- Keep a tidy facility.
- Store hazardous materials as specified by the manufacturer.

Whenever Possible:

- Store materials and wastes inside or under cover if outside.
- Substitute less or non-toxic materials for toxic ones.
- Perform a routine cleaning of the facility.
- Inspect facility (interiors, exterior, parking areas, etc.) for stains.
- Conduct regular employee training and public education to reinforce proper housekeeping.

Other Related SOPs:

- Spill Cleanup
- Street Sweeping
- Alternative Product Use/Storage/Disposal

Standard Operating Procedure for:		
3.24 Floor Drains		
Purpose of SOP:	To protect stormwater from pollution caused by discharges of hazardous materials to the subsurface, ground surface, waterway or storm sewer through floor drains.	

Always:

- Keep a spill kit in the vicinity of the floor drains.
- Obtain and use drain mats to cover floor drains in the event of spills.
- Use floor drains that are connected to a holding tank or to the sanitary sewer via an oil/water separator.

Whenever Possible:

- Register floor drains

- Minimize water use or run a dry shop.

Never:

- Never dump hazardous materials down the floor drains.
- Never store leaking vehicles over floor drains.
- Never store hazardous or petroleum products in the vicinity of floor drains.
- Never use floor drains if you are unsure of their discharge location.

Other Related SOPs:	
-	Spill Cleanup
-	Fertilizer and Pesticide Storage and Disposal
-	Petroleum and Chemical Handling
-	Petroleum and Chemical Storage
-	Petroleum and Chemical Disposal

Standard Operating Procedure for:		
3.25 Painting		
Purpose of SOP:	To protect stormwater by properly storing, using and disposing of paint and preparation materials.	

Always:

- Store waste paints, solvent, and rags in covered containers.
- Contact the TDEC to determine if air emission permits are required.
- Perform abrasive blasting and spray painting in accordance with regulations.
- Properly clean, store, and dispose of paint and associated waste materials.
- Train employees on Best Management Practices concerning painting activities, cleanup and disposal.

Whenever Possible:

- Use less toxic paints such as latex or water-based paints.
- Use drop cloths under any painting or preparation activity such as scraping or sandblasting.
- Use techniques such as brushing and rolling to avoid overspray.
- Use vacuum sanders to collect paint dust.
- Perform abrasive blasting and spray painting in an enclosed or covered area that is safe for personnel.

Never:

- Never dispose of paint or waste paint products into the storm drain system, a waterbody, or onto the ground.

Other Related SOPs:	
	- General Facility Housekeeping
	- Petroleum and Chemical Storage, Small Quantity
	- Alternative Products Use/Storage/Disposal

Standard Operating Procedure for:		
3.26 Street Sweeping		
Purpose of SOP:	To remove sediment, debris and other pollutants from streets, parking areas, and paved surfaces through regular, properly timed sweeping schedules.	

Always:

- Dispose of sweeping residual properly (reuse is unrestricted if evidence of litter and visual petroleum contamination is absent).
- Sweep in a pattern that prevents materials from being pushed into storm drains/catch basin inlets.
- Sweep all publicly accepted paved streets and parking lots at least once per year as soon as possible after snowmelt.

Whenever Possible:

- Perform additional sweeping on a seasonal schedule.
- Sweep in locations that generate debris, such as construction entrances, sand/salt loading areas, vehicle fueling areas, vehicle equipment, and s **3-25** as or on an as needed basis.
- Street sweep before a major rain event.
- Use dry vacuum assisted street sweepers (the most effective).
- Maintain street sweeping equipment for maximum effectiveness.
- Locate storage and disposal areas and manage street sweeping waste so that wastes cannot be transported into storm drain systems, waterbodies or wetlands.

Never:

- Never store street sweeping residuals in areas where stormwater could transport fines to the storm drain system or a waterbody.

Other Related SOPs:	
-	Vehicle and Equipment Storage
-	Sand and Salt Storage

Standard Operating Procedure for:

3.27 Road Maintenance – Snow Disposal



Purpose of SOP:

To protect stormwater by minimizing the impact of snow piles which contain sand, salt, and trash and which generate concentrated releases of pollutants during spring snowmelt conditions.

Always:

- Identify sensitive ecosystems prior to disposal and avoid snow disposal in these areas.
- Obtain a Waste Discharge License from TDEC if snow storage is near wetlands, aquifer recharge areas, ponds, streams, or tidal and river areas.
- Remove trash/waste from snow dump areas as soon as possible after snow melt.

Whenever Possible:

- Select storage locations that do not drain into surface waters and where environmental impacts of spring melt are minimal.
- Store snow on areas that are well above the groundwater table on a flat, vegetated slope.
- Avoid disposal on pavement, concrete, and other impervious surfaces.
- Do not pile snow in wooded areas, around trees or in vegetative buffers.
- Divert run-on of water from areas outside the snow piles.
- Manage remaining materials after snowmelt by containing and cleaning up the sediment, sand, and debris.
- Have the TDEC review your snow storage/disposal location(s).

Never:

- Never dispose of snow in wetlands, lakes, streams, rivers, shellfish beds, mudflats, or near drinking water sources.

Other Related SOPs:
- General Facility Housekeeping
- Sand and Salt Storage

Standard Operating Procedure for:		
3.28 Road Maintenance – Sand and Salt Storage		
Purpose of SOP:	To protect stormwater by properly storing deicing materials. Sand, salt and other deicing materials used during winter can be transported by runoff into the storm drain system and eventually into waterbodies if not stored properly.	

Always:

- Cover sand/salt and salt piles that are situated on impervious surfaces.
- Register all new sand/salt storage areas with the **TDEC**

Whenever Possible:

- Contain wash water from trucks used for salting and sanding in a holding tank for disposal or discharge into sanitary sewers.
- Place salt piles in areas not subject to flooding.
- Cover sand/salt and salt piles with a tarp (polyethylene) during non-freezing spring and summer months when storage facilities are not available.
- Contain stormwater runoff from areas where salt is stored by using buffers to diffuse runoff before entering waterbodies.
- Use diversion berms to minimize run-on to storage areas.
- Cleanup “track out” after storm events.
- Have the **TDEC** review your snow storage/disposal location(s).

Never:

- Never dispose of wash water from sanding and salting trucks into the storm drain system, a waterbody or septic system drain fields.

Other Related SOPs:	
-	General Facility Housekeeping
-	Street Sweeping
-	Alternative Products Use/Storage/Disposal

Standard Operating Procedure for:

3.29 Road Maintenance – Salt Application



Purpose of SOP:

To protect stormwater by improving application techniques of salt, sand, and other deicing materials.

Always:

- Calibrate sand/salt trucks in accordance with TDOT

Whenever Possible:

- Use the minimum amount of salt and sand needed to get the job done.
- Use coarse, clean sand, which is free of fine particles and dust and easier to clean in the spring.
- Train drivers to improve application techniques and reduce losses.
- Establish "low salt and/or sand areas" near sensitive environments. Sand may be detrimental in areas sensitive to sedimentation, such as streams, and salt can impact water supply wells.
- Remove snow manually from driveways and sidewalks.
- Limit toxic metals in specifications for deicers.
- Cleanup road grit as soon as possible.
- Use less harmful deicers such as calcium magnesium acetate, potassium acetate, or organic deicers such as Magic Salt™.
- Consider TDEC temperatures when determining volume of salt to apply.
- Control the rate of spreading by equipping trucks with ground-speed sensors.

Other Related SOPs:

- General Facility Housekeeping
- Alternative Products Use/Storage/Disposal

Question B

Pollution Prevention/Good Housekeeping for Municipal Operations

The permittee must develop or continue to develop and implement an employee training program for employees responsible for municipal operations at facilities within the jurisdiction of the permittee that handle, generate and/or store materials which constitute a potential pollutant of concern for MS4s. Examples of these materials may include, but are not limited to, lubricants, fuels, sand, gravel, soil, salt, pesticide, fertilizer, garbage, trash, clippings, vehicles, equipment, and other wastes. The goal of the training program should be to identify pollutants and prevent and/or reduce stormwater pollution from activities such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and stormwater system maintenance. New employees must be trained within six months of their employment or movement into an applicable job category. **All responsible employees must receive training at least once within the permit term or (within 6 months of hire.)** (Feb. 8, 2017 thru Sept. 30, 2021) Training should be documented and included in the Annual Report.

The Mid Tennessee Stormwater Group jointly with John Chlarson from **MTAS** will be hosting a training class for all Municipal employees in the Middle Tennessee Region that would like to participate. The following department's employees will require training: (training will be conducted twice annually)

- Public Works (streets)
- Waste Water (sewer)
- Parks
- Vehicle Maintenance
- Stormwater
- Trash Collection
- Building Maintenance
- Horticulture
- Any other employee that meets criteria above.

WHERE:

Gallatin Civic Center
210 Albert Gallatin Ave.
Gallatin, TN. 37066

WHEN:

Tuesday-March 6, 2018
10 am to 12 pm

HOW:

RSVP Jennifer.watson@gallatintn.gov
(615) 451-5965



Reviewing and Updating Stormwater Management Programs

(Section 4.4)

Question 8

Supporting Materials

Mid-Tennessee Stormwater Group Meeting Minutes

Date: Wednesday, July 12, 2017

Time: 10 a.m.

Place: Gallatin Civic Center -210 Albert Gallatin Avenue, Gallatin, TN 37066.

Present: Warren Garrett, Trey Hightower, Jennifer Watson, Adam Meadors, Gina Hutson, Tracey Barrow, Rick Mayo, Brian Mulligan, Paul Davis, Larry Smith, Lyle Patterson, Liana Dranes, Gwen Griffith, John Dewaal, Joe Phillips, Cindy Wheeler, Shelia White, Joe Moss, Guinn Nolen, Michael Barr, Sherry Montgomery, Duane Allen, Marshall Boyd, Nick Tuttle, Guy Patterson, Beverly Goodwin, Dan Nedwidek, Amy Murray, Scott Gorneau.

1. Trey Hightower/Jen-Hill Construction Materials/Focal Point

a. Focal Point is a nonproprietary bio-retention mix that reduces the footprint of conventional bio-retention areas, saving money and allowing owners to maximize usable land on their developments. Please see attached brochures and flyers for your records. Jen-Hill Construction Materials provided an excellent power point with data that we all can use to help meet our goal of TSS removal, Gain usable square footage, Improve system performance, Reduce material requirements & cost as well as improve property aesthetics & value. Jen-Hill Construction Materials also carries all of the EPSC materials we use every day for public works drainage projects. Please see attached information

2. City of Goodlettsville

a. Discussed with group the development of an educational flyer created to educate and inform local businesses of illicit discharges through blowing grass into storm drains. Please see attached flyer.

b. The City of Goodlettsville briefly reminded the group of the current Annual Report due dates as well as the addition of important attachments both required and optional. Remember that the report is due on September 30, 2017. Must present to public for review and comment either on a website, at a public meeting or both. Attached is the Table of Contents Goodlettsville is providing (optional).

Required attachments are;

- 303d list.
- Approved TMDL list.
- If you discharge to any ETW's

3. Dr. Gwen Griffith

a. (Cumberland River Compact) introduces "Climate resiliency planning for Sumner County"

b. Dr. Gwen Griffith with the Cumberland River Compact discussed a recent study and program on Sumner County's Growth and Resilience. Presentation included in-depth discussion of research and

work happening in Sumner County as the County deals with the fast-paced growth currently occurring while maintaining its natural resources - all in an effort to balance nature and growth while protecting water quality in the region. Cumberland River Compact helps with educational programs. CRC is looking for input, advice, and engagement from stormwater managers. What data/analysis would benefit and be relevant within your area and stormwater program? CRC is currently working on low-head dam removal, stream clean-up, and various adaptive management programs throughout the Cumberland River basin region. Creek program through CRC for the Cumberland River basin showcases recreational access opportunity points. Discussed ways CRC can assist with mitigation and in-lieu fee programs. How stormwater is a direct benefit and how flood mitigation is a direct benefit for landowners. For more information, contact Gwen at gwen.Griffith@cumberlandrivercompact.org or call (615) 837-1151 Please see attached PPT.

Nashville Urban 5k Runoff takes place on August 26th. Booth space is available. See Jennifer Watson for details and information. \$5 off coupons are available and sponsorship opportunities abound.

3 PDH webinar at UT on July 24th. Exploring Regenerative Stormwater Conveyances for Tennessee Design, Installation, and Performance Evaluation.

Thank you all for the interaction and presentations! Thank you Trey for providing lunch!

Thanks to Amy Murray for sending notes for the minutes!

We hope everyone gained some valuable information from today's meeting, thanks to everyone for the great interaction!

This information will be available on our Facebook page.

Additional Comments and Discussion

Please encourage all local municipalities/counties to attend our monthly meetings. The meetings provide an opportunity for the stormwater community to network and help each other by discussing current and ongoing issues.

- **Next Meeting:** July 19, 2017

(Details on next Agenda)

Adjourned:

12:00 pm

Respectfully submitted,

Mid-Tennessee Stormwater Group

Wednesday, July 19, 2017

10 a.m.

Civic Center, Gallatin Tennessee

Name (printed)	Affiliation
Warren Garrett	Goodlettsville
Joe Phillips	White House
Cindy Wheeler	White House
Shelia White	COWH
JOE MOSS	COWH
Shirley Nolen	Goodlettsville
Michael Barr	Millersville
Tracey Barrow	Sumner County
Gina Hutson	Sumner County
RICK MAYO	COLLIER ENGINEERING
Sherry Montgomery	City of Goodlettsville
BRIAN MULLIGAN	ADS (ADVANCED DRAINAGE SYS)
Duane Allen	City of Hendersonville
MARSHALL BOWD	" "
NICK TUTTLE	GALLATIN
Gray Patterson	RETIRED
Beverly Goodwin	Goodlettsville citizen
Dan Nedelick	NorthStar Environmental
Amy Murray	

Topics covered: see agenda and minutes

Facilitator: Warren Garrett

Name	City/County/Company
Jennifer Watson	Galcatin
Tracey Barrow	Summer County
Rick Mayo	College Engineers
Brian Muligan	ADS (ADVANCED DRAINAGE SYS)
Paul Davis	
Larry Smith	City of Belle Meade
Lyle Patterson	" " " " " "
Liana Dranes	City of Lebanon
Gwen Griffith	Cumberland River Compact
Adam Meadors	Mt. Juliet
John Dewaal	DeWaal & Assoc.
	Belle Meade

Mid-Tennessee Stormwater Group Meeting Minutes

Date: Wednesday, August 9, 2017

Time: 10 a.m.

Place: Gallatin Civic Center -210 Albert Gallatin Avenue, Gallatin, TN 37066.

Present: Warren Garrett, Daniel Lockart, Rick Mayo, Derrick Long, Mike Bertotti, Alan Dollar, Michael Barr, Jennifer Watson, Tracey Barrow, Gina Hutson, Carlton Cobb, Zachary Stilp, Brian Mulligan, Joe Phillips, Dean Baddorf.

1. Date has been set for the next Good Housekeeping Training from MTAS by John Chlarson. It will be on **Tuesday September 26, 2017 here at the Gallatin Civic Center 10 am**. All MS4's are encouraged to utilize this training session for any employee that may have missed the last session, or any new employees that must have training within six months of hire. See below:

4.2.6. Pollution Prevention/Good Housekeeping for Municipal Operations

New employees must be trained within six months of their employment or movement into an applicable job category.

All responsible employees must receive training and/or retraining within the permit term. Training should be documented and included in the Annual Report.

2. Discussion of target audiences when it comes to Education and Outreach per permit. Please see below:

4.2.1. Public Education and Outreach

Permittees shall implement a public education and outreach program. The program must focus on the steps that the public (including residential, commercial, industrial, or institutional stakeholders) can take to minimize the discharge of pollutants of concern to receiving streams. For example, in certain areas known as hot spots, the permittee should focus education on the particular pollutant(s) of concern and address outreach to the communities where the hot spots are located. Permittees are encouraged to emphasize the water quality improvement aspect of education programs and document related or expected water quality improvements.

If not already developed, the permittee shall develop a Public Information and Education Plan (PIE) within 12 months of permit coverage. The plan shall include detailed specific goals and identify specific public information events/activities that are designed to meet those goals as well as a schedule indicating when the events will occur over the remainder of the permit cycle. The PIE shall document all public education and outreach components, and also incorporate an evaluation of components to assess overall effectiveness and the need for improvement. The evaluation methods could include but not be limited to: direct evaluations/observations, surveys, tracking the number of attendees, interviews, review of media clippings, or tracking the number of stormwater related calls, emails and letters received.

At a minimum, the PIE shall also include targeted educational campaigns addressing the following issues. For flexibility, an issue may be omitted if the permittee can provide justification.

- a. General public awareness of the impacts on water quality from general housekeeping maintenance/activities;
- b. Home owner associations and other operators of permanent BMPs awareness of the importance of maintenance activities;
- c. Local engineering and development community awareness of the stormwater ordinances, regulations, and guidance materials related to long-term water quality impacts;
- d. General public and professional chemical applicators awareness on the proper storage, use, and disposal of pesticides, herbicides, and fertilizers use;
- e. General public and related commercial and professional stakeholder's awareness on the proper storage, use, and disposal of oil and other automotive-related fluids;
- f. General public and municipal employees on the awareness of identifying and reporting procedures for illicit connections/discharges, sanitary sewer seepage, spills, etc.;
- g. Local engineering, development, and construction community awareness of stormwater ordinances, regulations and guidance materials related to construction phase water quality impacts; and
- h. Municipal employee/contractor awareness of water quality impacts from daily operations.

A summary of this information shall be included in the annual report. The PIE plan and education and outreach records must be maintained in the SWMP.

CONTECH-Dean Baddorf provided a thorough presentation on the following water quality units that they provide:

The Jellyfish Filter is a stormwater quality treatment technology featuring high surface area and high flow rate membrane filtration at low driving head. By incorporating pretreatment with light-weight membrane filtration, the Jellyfish Filter removes floatables, trash, oil, debris, TSS, fine silt-sized particles, and a high percentage of particulate-bound pollutants; including phosphorus and nitrogen, metals and hydrocarbons.

The high surface area membrane cartridges, combined with up flow hydraulics, frequent backwashing, and rinse able/reusable cartridges ensures long-lasting performance.

The CDS is a swirl concentrator hybrid technology that uses continuous deflective separation – a combination of swirl concentration and indirect screening to screen, separate and trap debris, sediment, and hydrocarbons from stormwater runoff. The indirect screening capability of the system allows for 100% removal of floatables and neutrally buoyant material debris 2.4 mm or larger, without binding. CDS retains all captured pollutants, even at high flow rates, and provides easy access for maintenance. CDS is used to meet trash Total Maximum Daily Load (TMDL) requirements, for stormwater quality control, inlet and outlet pollution control, and as pretreatment for filtration, detention/infiltration, bioretention, rainwater harvesting systems, and a variety of green infrastructure practices.

HDS products work well as standalone or end-of-pipe treatment systems and can easily be implemented in a retrofit scenario. They are particularly effective at removal of solids, trash and debris – and can help you meet TMDL requirements for these pollutants.

HDS systems are also optimal pretreatment systems – and an important building block in a low impact development (LID) design. By removing solids, trash and debris prior to detention, infiltration or re-use systems, you can significantly increase their service life.

The primary goal of an inspection is to assess the condition of the cartridges relative to the level of visual sediment loading as it relates to decreased treatment capacity. It may be desirable to conduct this inspection during a storm to observe the relative flow through the filter cartridges. If the submerged cartridges are severely plugged, then typically large amounts of sediments will be present and very little flow will be discharged from the drainage pipes. If this is the case, then maintenance is warranted and the cartridges need to be replaced. This short version inspection document is not intended to replace the StormFilter Inspection and Maintenance Procedures Manual and it is recommended that all persons review the manual carefully.

Thank you to CONTECH, Allan Dollar, Zachary Stilp and Dean Baddorf for the presentation and lunch!

We hope everyone gained some valuable information from today's meeting, thanks to everyone for the great interaction!

This information will be available on our Facebook page.

Additional Comments and Discussion

Please encourage all local municipalities/counties to attend our monthly meetings. The meetings provide an opportunity for the stormwater community to network and help each other by discussing current and ongoing issues.

- Next Meeting: September 13, 2017

(Details on next Agenda)

Adjourned:

12:00 pm

Respectfully submitted,

W. Garrett

Stormwater Coordinator/Goodlettsville TN.

Forming Partnerships

Operators of regulated small MS4s are encouraged to utilize partnerships with other governmental entities to fulfill this minimum control measure's requirements. It is generally more cost-effective to use an existing program, or to develop a new regional or state-wide education program, than to have numerous operators developing their own local programs. Operators also are encouraged to seek assistance from non-governmental organizations (e.g., environmental, civic, and industrial organizations), since many already have educational materials and perform outreach activities.

Mid-Tennessee Stormwater Group
 Wednesday, August 9, 2017
 10 a.m.
 Civic Center, Gallatin Tennessee

Name (printed)	Affiliation
Warren Garrett	City of Goodlettsville
Daniel LaKart	ADS
RICK MAYO	COLLIER ENGINEERING
Derrick Long	City of Dickson
Mike Bertotti	Amer Foster Wheeler
Alan Dellar	Contech
MICHAEL BARR	MUNINGVILLE
Jennifer Watson	city of Gallatin
Troy B...	Sumner County
Giina Hutson	Sumner County
Carlton Cobb	Portland
Zachary Stip	Contech
BRIAN MUNIGON	ADS
Joe Phillips	COWH
Dean Baddorf	Contech

Topics covered: see agenda and minutes

Facilitator: Warren Garrett

Mid-Tennessee Stormwater Group Meeting Minutes

Date: Wednesday, September 13, 2017

Time: 10 a.m.

Place: Gallatin Civic Center -210 Albert Gallatin Avenue, Gallatin, TN 37066.

Present: Warren Garrett, Dan Nedvidek, Larry Wilbanks, Mike Bertotti, Greg Edrington, Rick Mayo, Rick Roark, Cynthia Hernandez, Michael Barr, Paul Davis, Tracey Barrow, Adam Meadors, Liana Dranes, Helen Morrison, Duane Allen, Joe Phillips, Justin Bryan, Daniela Rodriguez.

1. Brief discussion from Goodlettsville regarding Construction Inspections and pitfalls between site inspector and city inspections as well as breakdowns of communication.
2. Goodlettsville presented NOV that was given to a local subdivision for multiple violations as well as letter from TDEC in response to an illicit discharge from site into local tributary. Paperwork is attached to email.
3. Brief discussion regarding mass mailing of the "Tennessee Homeowners Guide" from waterworks to target audience of local residents. The City of Goodlettsville is preparing to mail these out via third party to all city residents with the utility bill. This will meet the measurable education and outreach requirements of the Permit.
4. Brief discussion and sample letter of NOV for local resident stacking lawn clippings next to Madison Creek. Letter was sent along with educational flyer. (attached)
5. Discussion of walk-through of local construction site for MS4's to compare different opinions and observations. Each individual will fill out a TDEC inspection form as they normally would, (withhold personal information.) The received inspection forms will be used to compile a power point presentation showing the differences and procedures that take place. We will present the findings at a future MTSG meeting.

NorthStar Environmental Group:

NorthStar Environmental Group is proud to announce the expansion of their storm water compliance division! Their staff is dedicated to leveraging public and private relationships to assist you with MS4 permit compliance. They stand ready to help with any aspect of your program.

Training – EPSC, sample collection, permit compliance.

Mapping – Comprehensive mapping of storm water outfalls, control structures, sampling points and water quality hot spots.

Monitoring – Wet and dry weather sample collection, precipitation tracking with remote monitoring stations.

Outfall Screening – Screening and inventory of dry and wet weather outfalls.

Public Education and Outreach – Development of education and outreach programs. Benchmarking and evaluation of existing programs.

Inspections – Staff augmentation for conducting construction/post construction site inspections.

IDDE Investigation/Response – Mapping, tracking and response to illicit discharge events.

Cleaning – Storm drain, control structure and BMP maintenance, inspection, cleaning and repair.

Program Evaluation – Evaluation program effectiveness and permit compliance.

Permit Assistance Permit renewals and annual reporting, including the development and measurement of performance indicators.

Water Quality Studies – Design and implementation of storm water quality studies. Including remote data collection with real time data viewing, long term monitoring, and drainage basin declination.

TMDL Program Assistance – Assistance with TMDL required monitoring and reporting.

Dan provided an overview of mapping of Karst systems in Bowling Green Ky. He was instrumental in putting this information together for the City, he also has vast experience with GIS mapping of over 2000 miles for TDOT drainage network. His group is available for all or part of the program requirements above.

If you are interested in learning more about our service offerings please contact Dan Nedvidek.

Thank you to NorthStar, Dan Nedvidek and Larry Wilbanks for the presentation and lunch!

We hope everyone gained some valuable information from today's meeting, thanks to everyone for the great interaction!

This information will be available on our Facebook page.

Additional Comments and Discussion

Please encourage all local municipalities/counties to attend our monthly meetings. The meetings provide an opportunity for the stormwater community to network and help each other by discussing current and ongoing issues.

- **Next Meeting:** October 11, 2017

(Details on next Agenda)

Adjourned:

12:00 pm

Respectfully submitted,

W. Garrett

Mid-Tennessee Stormwater Group
 Wednesday, September 13, 2017
 10 a.m.
 Civic Center, Gallatin Tennessee

Name (printed)	Affiliation
Warren Garrett	City of Goodlettsville
Dan Nedvidak	North Star Environmental
Larry Wilbanks	North Star Environmental
Mike Bertott	Amec Foster Wheeler
CAROL EDINGTON	CITY OF GOODLETTSVILLE
RICK MAYO	COLLIER ENGINEERS
Rick Roark	Midwest Construction Products
Larry Wilbanks	North Star
Cynthia Hernandez	Tennessee Environmental Council
Michael Barr	City of Millersville
Paul Davis	
Tracey Barrow	Sumner County
Adam Meadors	Mt. Juliet
Liana Dranes	City of Lebanon
Helen Morrison	Hendersonville
Dwane Allen	City of Hendersonville
Jon Phillips	City of White House
JUSTIN BRYAN	CEC, INC.
DANIELA RODRIGUEZ	CEC, INC.

Topics covered: see agenda and minutes

Facilitator: Warren Garrett

Mid-Tennessee Stormwater Group Meeting Minutes

Date: Wednesday, October 11, 2017

Time: 10 a.m.

Place: 101 Maple Drive North, Hendersonville TN.

Present: Warren Garrett, Michael Barr, Paul Davis, Adam Meadors, Helen Morrison, Duane Allen, Joe Phillips, Eric Bischoff, Zachary Stilp, Brian Mulligan, Brandon Head, Daniel Lockart, Adam Meadors, Gina Hutson, Steve Casey, Jeff Shaver.

1. Brief discussion from Hendersonville's Helen Morrison regarding Construction Inspections and pitfalls between site inspector and city inspections as well as breakdowns of communication.
2. Helen provided the discussion with walk-through of a local construction site (92 New Shackle Island Road) for MS4's and Vendors to compare different opinions and observations. Each individual filled out a TDEC inspection form as they normally would. The inspection forms will be reviewed with a power point presentation showing the challenges and accomplishments that took place at our next meeting.
3. John McFadden wanted to remind all MS4's of the importance of planting trees and water quality. TEC is aggressively pursuing a 250K tree day please be sure and sign up or register for either a planting event or distribution point!

Thanks to Duane and Helen for the invitation as well as hosting of the Inspection event!

We hope everyone gained some valuable information from today's meeting, thanks to everyone for the great interaction!

This information will be available on our Facebook page.

Additional Comments and Discussion

Please encourage all local municipalities/counties to attend our monthly meetings. The meetings provide an opportunity for the stormwater community to network and help each other by discussing current and ongoing issues.

- o **Next Meeting:** November 8, 2017

(Details on next Agenda)

Adjourned:

12:00 pm

Respectfully submitted,

Mid-Tennessee Stormwater Group Meeting Minutes

Date: Wednesday, November 8, 2017

Time: 10 a.m.

Place: Gallatin Civic Center -210 Albert Gallatin Avenue, Gallatin, TN 37066.

Present: Warren Garrett, Austin Brock, Duane Allen, Helen Morrison, Eric Bischoff, Michael Barr, Zachary Stilp, Eric Gardner, Brian Mulligan, Clarke Wiley, Justin Bryan, Paul Davis.

1. City of Hendersonville presented: A power point on our group site inspection from 10/11/17 to Hendersonville Self-Storage at 92 New Shackle Island Road, and follow up inspection. Helen and Duane discussed plan review procedures, initial inspections, TDEC inspection forms, issues with EPSC engineering design flaws, and problems with 3rd party EPSC inspectors. Overall, a very good discussion on issues each MS4 is facing. The power point is available to any who are interested contact Helen @ hmorrison@hvilletn.org.
2. TAB program ending June 2018. TNSA will be working to develop an equivalent program that would be acceptable to TDEC at a similar cost to the participants.
3. We will be holding pot luck next month on the 13th. Please bring a dish to share with the group. We may have extra attendees as well! It's Christmas time!!!! I will bring a cake from Chef's in Goodlettsville.
4. Remember that Public Education and Outreach minimum control measures must be measurable with a target audience.

Thanks to Duane and Helen! ☺

We hope everyone gained some valuable information from today's meeting, thanks to everyone for the great interaction!

This information will be available on our Facebook page.

Additional Comments and Discussion

Please encourage all local municipalities/counties to attend our monthly meetings. The meetings provide an opportunity for the stormwater community to network and help each other by discussing current and ongoing issues.

- **Next Meeting:** December 13, 2017

(Details on next Agenda)

Adjourned:

Mid-Tennessee Stormwater Group

Wednesday, November 8, 2017

10 a.m.

Gallatin Civic Center -210 Albert Gallatin Avenue, Gallatin, TN 37066.

Name (printed)	Affiliation
Warren Garrett	Co of Goodlettsville
Austin Brock	Advanced Drainage Systems
Duane Allen	City of Hendersonville
Helen Morrison	Hendersonville PW
Eric Bischoff	OHM-Advisors
Michael Barr	Millersville
Zachary Stilp	Contech ES
Eric Gardner	CEC
BRIAN MULLIGAN	ADVANCED DRAINAGE SYSTEMS
CLARKE WILLEY	Tpm ENV
JUSTIN BRYAN	CEC
Paul Davis	MTSG

Topics covered: see agenda and minutes

Facilitator: Warren Garrett

Mid-Tennessee Stormwater Group Meeting Minutes

Date: Wednesday, December 13, 2017

Time: 10 a.m.

Place: Gallatin Civic Center -210 Albert Gallatin Avenue, Gallatin, TN 37066.

Present: Warren Garrett, Guinn Nolan, Austin Brock, Paul Davis, Jennifer Watson, Susie Pemelton, Beverly Goodwin, Liana Dranes, Michael Barr, Gina Hutson, Ray Hunter, Tracey Barrow, Stephanie Williams, David Withers, Helen Morrison, Gerri Peterson, Justin Bryan, Jeff Shaver, Greg Edrington, Zachary Stilp, LeeAnne Faust, Mike Bertotti, Carlton Cobb, Brian Mulligan, Duane Allen, Nicole Witzel.

1. Thank you to the Community Advisory Panel for continued dedication and service to the City of Goodlettsville. Appreciation Awards were distributed to CAP Volunteers for the year 2017. The goal is to continue on with our current group through at least 2018, we can discuss terms at our meeting in January 2018 if necessary. Merry Christmas.

2. *Natural Heritage Program, Division of Natural Areas, Tennessee Department of Environment and Conservation*

An environmental consultant's 2015 find of a juvenile *Ambystoma barbouri* from Nolensville, TN, inspired researchers to redouble efforts to find new populations in under-surveyed portions of middle Tennessee. Surveys produced 2 new county records, 2 previously undocumented drainages, 7 additional stream systems, and 20 newly identified breeding populations. The Streamside Salamander, listed by the TWRA as in "Need of Management," is believed extant from 41 locations and extirpated from at least one historic and one contemporary site. Though ostensibly protected by public lands in two counties, it remains a conservation concern in the rapidly urbanizing lands in and around Nashville. Many new populations have been documented only in response to development permit review or related water quality investigations. As a winter breeder, this species historically is overlooked by field surveys conducted outside of the breeding season, and easily is missed by winter surveys if not specifically targeted. Sumner County has proven especially significant for the species, in that since its discovery during the winter of 2015-2016 ten populations have been documented in the Central Basin portion of the county.

3. I was not able to stay and collect any more information from David a Stephanie due to a Dr. Appointment. I know that David distributed pin drives to everyone as well as the presentation via email. Please save this information to your files. I am sorry I could not stay and enjoy what they had to say, as well as fellowship lunch. I hope everyone enjoyed the meeting! Thank you to everyone for bringing a special side dish or desert!

MERRY CHRISTMAS and HAPPY NEW YEAR!

Thank you to David and Stephanie!

Mid-Tennessee Stormwater Group
 Wednesday, December 13, 2017
 10 a.m.

Gallatin Civic Center -210 Albert Gallatin Avenue, Gallatin, TN 37066.

Name (printed)	Affiliation
Warren Garrett	City of Goodlettsville
Shirley Nelson	Goodlettsville
Austin Brock	Advanced Drainage
Paul Davis	TNSA & CAP
Jennifer Watson	City of Gallatin
Susie Penmetton	Leville
Beverly Woodruff	" AP Goodlettsville
Liana Drapes, Stormwater Coord.	City of Lebanon
MICHAEL BARR	MILLERSVILLE
Erina Hutson	Sumner County
Ray Hunter	"
Tracey Barrow	"
Stephanie Williams	TDEC DNA
DAVID WITHERS	TDEC DNA
Helen Morrison	Hville PW
Gerri Peterson	Hville PW
JUSTIN BRYAN	CEC
Jeff Shaver	CEC
GREG EDINGTON	CITY OF GOODLETTSVILLE

Zachary Stilt
 Contech Engineered Solutions

Topics covered: see agenda and minutes
 Kellann Faust
 UofTN Extension, Sumner Co.

Facilitator: Warren Garrett

Mike Bertotti
 Amec Foster Wheeler

Carlton Cobb
 Portland

BRIAN MULLIGAN
 ADS

Duane Allen
 Hendersonville

Nicole Witzel
 TSU

Mid-Tennessee Stormwater Group Meeting Minutes

Date: Wednesday, January 10, 2017

Time: 10 a.m.

Place: Gallatin Civic Center -210 Albert Gallatin Avenue, Gallatin, TN 37066.

Present: Warren Garrett, Rick Mayo, Austin Brock, Mike Bertotti, Brian Mulligan, Lyle Patterson, Gina Hutson, Nick Tuttle, Greg Edrington, Justin Bryan, Adam Meadors, Carlton Cobb, John Dewaal, Dan Nedvidek, Paul Davis, Rick Roark

1. "Using Flocculants in Stormwater Management"

Topics Covered:

1. History of Stormwater regulations
2. How Dirty is Stormwater?
3. 0-250 NTU's allowable discharge from construction sites, normal discharge is 1000.
4. How NTU's are measured.
5. TSS Dry weight measurement.
6. Impacts of sediment in Water---Aquatic Life/Infrastructure & Water Quality.
7. Flocculation & Coagulation
8. Types of Flocculants & Coagulants.
9. Coagulant—Alum
10. Flocculant—(PAMs) Biopolymers
11. Variable that impact Flocculant performance.
12. Common Installations.
13. Sediment Bags
14. Residual Biopolymer Test Kit
15. Project in Birmingham Northern Beltline
 - a. Stormwater Treatment Strategy
 - b. Polymer Deployment
 - c. Initial Testing
 - d. Case Studies
2. Measurable Data Form for Six Minimum Measures

Thank you Rick for the very informative and engaging presentation as well as a great lunch!!

We hope everyone gained some valuable information from today's meeting, thanks to everyone for the great interaction!

This information will be available on our Facebook page.

Additional Comments and Discussion

Please encourage all local municipalities/counties to attend our monthly meetings. The meetings provide an opportunity for the stormwater community to network and help each other by discussing current and ongoing issues.

- Next Meeting: February 14, 2018

(Details on next Agenda)

Adjourned: 12:30 PM

Respectfully submitted,

W. Garrett

Stormwater Coordinator/Goodlettsville TN.

Forming Partnerships

Operators of regulated small MS4s are encouraged to utilize partnerships with other governmental entities to fulfill this minimum control measure's requirement. It is generally more cost-effective to use an existing program, or to develop a new regional or state-wide education program, than to have numerous operators developing their own local programs. Operators also are encouraged to seek assistance from non-governmental organizations (e.g., environmental, civic, and industrial organizations), since many already have educational materials and perform outreach activities.

Mid-Tennessee Stormwater Group
 Wednesday, January 10, 2018
 10 a.m.

Gallatin Civic Center -210 Albert Gallatin Avenue, Gallatin, TN 37066.

Name (printed)	Affiliation
W. Garrett	City of Goodlettsville
Rick Mayo	concrete ENGINEERS
Austin Brock	Advanced Drainage Systems
Mike Bertotti	Anee Foster Wheeler / Wood Group
BRIAN MULLIGAN	ADS PIPE
LYLE PATTERSON	CITY OF BELLE MEADE
Giina Hertzow	SUMNER COUNTY
NICK TUTTLE	GALLATIN
GREEN EDRINGTON	CITY OF GOODLETTSVILLE
JUSTIN BRYAN	CEC, INC
Adam Meadors	City of Mt. Juliet
Carlton Cobb	City of Portland
John Dowgal	Dewnaal & Associates
Dan Nedvidek	NorthStar Environmental
Paul Davis	MTSG
Rich Roark	

Topics covered: see agenda and minutes

Facilitator: Warren Garrett

Mid-Tennessee Stormwater Group Meeting Minutes

Date: Wednesday, February 14, 2017

Time: 10 a.m.

Place: Gallatin Civic Center -210 Albert Gallatin Avenue, Gallatin, TN 37066.

Present: Warren Garrett, Rick Mayo, Austin Brock, Brian Mulligan, Lyle Patterson, Gina Hutson, Greg Edrington, Justin Bryan, Adam Meadors, Paul Davis, Ashley Morris, Mitchell Lasley, Helen Morrison, Duane Allen, Tracey Barrow, Jeff Shaver, Clarke Wiley, Mike Woodcock, John Keck, Ernie Woodcock.

Topics Covered:

“Pipe Bursting and Lining”

Michael E. Woodcock – Portland Utilities Construction Company, LLC

The Breakdown

1. The next generation of CIPP
2. Fiberglass Reinforcement
3. Stronger Physical Properties
4. Shelf life of up to 6 months
5. Product stored in UV protected containers
6. Cost considerations for MS4-Larger diameters = less cost
7. Products has superior quality controls by use of Light Train and Computerized Application
8. Also provides a Tamper proof curing documentation
9. Product wrapped with outer foil providing extra protection
10. Product is not sensitive to cool spots caused by active infiltration
11. Environmental benefits-no water required-no styrene contaminated water disposal

Pipe Bursting Procedure and Advantages

1. Trenchless rehabilitation and replacement technology
2. Fractures and splits existing pipe while pulling through new liner
3. Replaces aged and deteriorating culverts
4. Capable of bursting and lining 4” – 42” diameter pipe
5. Capabilities are HDPE Ductile and CMP
6. CMP has a maximum pull of 100’ or less
7. CMP ARCH also included minus pipe bursting and up to 54”

Thanks to Michael and group from PUCC for the information and lunch! We do appreciate professionals bringing their products and expertise to our attention. Our goal is to utilize the best technology at the best price while also considering longevity.

We hope everyone gained some valuable information from today's meeting, thanks to everyone for the great interaction!

This information will be available on our Facebook page.

Additional Comments and Discussion

Please encourage all local municipalities/counties to attend our monthly meetings. The meetings provide an opportunity for the stormwater community to network and help each other by discussing current and ongoing issues.

- Next Meeting: March 14, 2018

(Details on next Agenda)

Adjourned: 12:00 PM

Respectfully submitted,

W. Garrett

Stormwater Coordinator/Goodlettsville Tn./MTSG Chair

Forming Partnerships

Operators of regulated small MS4s are encouraged to utilize partnerships with other governmental entities to fulfill this minimum control measure's requirement. It is generally more cost-effective to use an existing program, or to develop a new regional or state-wide education program, than to have numerous operators developing their own local programs. Operators also are encouraged to seek assistance from non-governmental organizations (e.g., environmental, civic, and industrial organizations), since many already have educational materials and perform outreach activities.

Mid-Tennessee Stormwater Group

Wednesday, February 14, 2018

10 a.m.

Gallatin Civic Center -210 Albert Gallatin Avenue, Gallatin, TN 37066.

Name (printed)	Affiliation
Warren Garrett	City of Goodlettsville
RICK MAYO	COLLIER ENGINEERING
Adam Meadors	City of Mt. Juliet
Ashley Morris	WAYPOINT ANALYTICAL - Canton
Mitchell Lasley	GreenLID Design, LLC
BRIAN MULLIGAN	ADVANCED DRAINAGE SYSTEMS
LYLE PATTERSON	City of Belle Meade
Helen Morrison	Hendersonville
Dwane Allen	C.O.H.
Tracey Barrow	Summer County
Carol G. Wadlow	PUCE
Austin Brock	Advanced Drainage Systems
Paul Davis	MTSG
Gina Hutson	SUMMER COUNTY
JUSTIN BRYAN	CEC
JEFF SHAVER	CEC
CLARKE WILLEY	TDM
Greg Edmington	City of Goodlettsville
Mike Woodcock	Portland Utilities Construction, LLC
John Keck	Portland Utilities Construction

Topics covered: see agenda and minutes

Facilitator: Warren Garrett

Mid-Tennessee Stormwater Group Meeting Minutes

Date: Wednesday, March 14, 2017

Time: 10 a.m.

Place: Gallatin Civic Center -210 Albert Gallatin Avenue, Gallatin, TN 37066.

Present: Warren Garrett, Rick Mayo, Gina Hutson, Greg Edrington, Justin Bryan, Adam Meadors, Paul Davis, Clarke Wiley, Mike Bertotti, Helen Morrison, Duane Allen, Bryan Price, Carlton Cobb, Steve Casey, Jeff Shaver, Eric Bischoff, Michael Barr, Zach Baker, Rick Roark, Rodd Hunter, Jason Mitchell, Andy Constantine, Glen Ballinger

Topics Covered:

Profile Products

The Breakdown

Glen Ballinger presented a 60-70-minute presentation that introduced us to new technologies in Erosion Control and Vegetation establishment. Typical erosion methods, such as rolled erosion blankets and rip rap channels can be costly and time consuming.

Glen conducted an overview of the basics of hydro mulching and how these products can replace the traditional methods of erosion control that is used today. First their group will look at soil structure and determine what is required for sustainable vegetation. Their newest product, *Proganics* is a vital part of the process. This product is one of the best new technologies to hit the market. We saw how to effectively utilize this product when quality topsoil is not available and it is necessary to increase organics of the soil layer.

Glen and group showed basic applications, advantages and disadvantages, and design surrounding the use of hydro mulching. Next, they reviewed how to get the maximum benefits from a TRM (turf reinforcement mat) in channel and ditch erosion and how to protect our waters to reduce sediment in surrounding lakes, rivers and streams.

Lastly, they introduced a design software that will allow you to design your own project by evaluating many products on the market today.

A certificate will be issued for **1-PDH**

Russell Chambless with Pennington Seed discussed vegetation choices / options and more details about successfully establishing sustainable turf grass.

Andy Constantine with Platypus Anchors discussed using various earth driven anchor systems to reduce risk of slope failure and regrading failures.

This product is a revolution in the field, I know I came away with a sense of urgency with implementing this product as soon as possible for the benefit of slope stabilization and water quality issues faced by all of us on our construction sites.

We all received the important literature from Glen, Russell, Andy, Jason and Rodd. Please keep this information handy and ready if this would be something that might fit your needs.

I want to thank Jason and Rodd for already collecting samples from one of our construction sites for analysis on 3/15/2018. I am anxious to see the results of soil type, fertilizer applied (if any) as well as their suggestions for improvement.

Also we thank Glen very much for the follow up lunch he sponsored for the group afterwards at Chubbs restaurant in Gallatin!

Glen may just send out the PDH to all listed attendees so keep your eyes open for a reply email. Thank you all for your individual presentations to bring these products together!

We hope everyone gained some valuable information from today's meeting, thanks to everyone for the great interaction!

This information will be available on our Facebook page.

Additional Comments and Discussion

Please encourage all local municipalities/counties to attend our monthly meetings. The meetings provide an opportunity for the stormwater community to network and help each other by discussing current and ongoing issues.

- Next Meeting: April 11, 2018

(Details on next Agenda)

Adjourned: 12:20 PM

Respectfully submitted,

W. Garrett

Stormwater Coordinator/Goodlettsville Tn./MTSG Chair

Forming Partnerships

Operators of regulated small MS4s are encouraged to utilize partnerships with other governmental entities to fulfill this minimum control measure's requirement. It is generally more cost-effective to use an existing program, or to develop a new regional or state-wide education program, than to have numerous operators developing their own local programs. Operators also are encouraged to seek assistance from non-

Mid-Tennessee Stormwater Group

Wednesday, March 14, 2018

10 a.m.

Gallatin Civic Center -210 Albert Gallatin Avenue, Gallatin, TN 37066.

Name (printed)	Affiliation
Warren Garrett	City of Goodlettsville
CLARKE WILLEY	TPM Group
Mike Bertott.	Wood / Amec Foster Wheeler
Crina Hutson	Sumner County
Helen Morrison	Aville
Duane Allen	C.O.H
RICK MAYO	collier ^{rick.mayo@collierengineering.com} ENGINEERING
Bryan Price	City of Portland
Carlton Cobb	City of Portland
Steve Casey	Civil & Environmental Consultants
Jeff Shover	"
Justin Bryan	"
Eric Bischoff	OHM-Advisors
Michael Barr	Millersville
Zach Baker	GreenLID Design
Rick Koark	Midwest Construction Products
Rodd Hunter	TriStar Environmental
Jason Mitchell	TriStar Environmental
ANDY CONSTANTINE	PLATIPUS ANCHORS

(PDH)

Topics covered: see agenda and minutes

Facilitator: Warren Garrett

Mid-Tennessee Stormwater Group
Wednesday, March 14, 2018
10 a.m.

Gallatin Civic Center -210 Albert Gallatin Avenue, Gallatin, TN 37066.

Name (printed)	Affiliation
Adam Meaders	City of Mt. Juliet
Paul Davis	MTG TNSA

Topics covered: see agenda and minutes

Facilitator: Warren Garrett

Mid-Tennessee Stormwater Group Meeting Minutes

Date: Wednesday, April 11, 2018

Time: 10 a.m.

Place: Gallatin Civic Center -210 Albert Gallatin Avenue, Gallatin, TN 37066.

Present: Warren Garrett, Jennifer Watson, Gina Hutson, Liana Dranes, Adam Meadors, Michael Barr, Joe Phillips.

Topics Covered:

1. MTSG meeting on May 9, 2018 will be hosted by Addam Meadors, Jennifer and I will be attending the TNSA Board meeting on the 9th in Franklin.
2. Group covered calendar of events to share with each other. Please send me your calendar of events if you want them posted monthly on Facebook and our minutes.
3. Hendersonville requested that MTSG MS4's provide two months per year for personal interaction of group since schedules may prohibit some from attendance of at least one. August 8, 2018 will be set aside for our next MTSG Meeting only.
4. Stream Cleanup Event of Millersville and Goodlettsville this Saturday April 14th. 9am to noon. Volunteers will meet at Goodlettsville Public Works for sign in and cleanup location, Cornerstone Nashville will provide 30 volunteers to assist as well as providing protective prayer prior to commencement of work. OHM Firm will provide lunch from 12 to 3 pm at Ryan's in Madison.
5. Cornerstone provides up to 300 volunteers throughout Nashville to volunteer events on the second Saturday of every month. I can provide you with contact information.
6. June 6, 2018 will be hosted by White House Cindy Wheeler with a presentation of Soil Testing and Analysis.
7. July 11, 2018 will be hosted by Lebanon's Liana Dranes regarding Public Education and Outreach program.
8. August 8, 2018 will be our second MS4 Only meeting to accommodate those who were unable to attend today.

We hope everyone gained some valuable information from today's meeting, thanks to everyone for the great interaction!

This information will be available on our Facebook page.

Additional Comments and Discussion

Please encourage all local municipalities/counties to attend our monthly meetings. The meetings provide an opportunity for the stormwater community to network and help each other by discussing current and ongoing issues.

- **Next Meeting:** May 9, 2018

(Details on next Agenda)

Adjourned: 11:20 PM

Respectfully submitted,

W. Garrett

Stormwater Coordinator/Goodlettsville Tn./MTSG Chair

Forming Partnerships

Operators of regulated small MS4s are encouraged to utilize partnerships with other governmental entities to fulfill this minimum control measure's requirement. It is generally more cost-effective to use an existing program, or to develop a new regional or state-wide education program, than to have numerous operators developing their own local programs. Operators also are encouraged to seek assistance from non-governmental organizations (e.g., environmental, civic, and industrial organizations), since many already have educational materials and perform outreach activities.

Mid-Tennessee Stormwater Group Meeting Minutes

Date: Wednesday, May 6, 2018

Time: 10 a.m.

Place: Gallatin Civic Center -210 Albert Gallatin Avenue, Gallatin, TN 37066.

Present: Eric Bischoff, Gina Hutson, Adam Meadors, Clarke Willey, Rick Mayo, Duane Allen, Helen Morrison, Joe Phillips, Tracey Barrow, Daniel Lockart, Jeff Shaver, Larry Smith, Greg Edrington, Justin Bryan, Daniela Rodriguez.

Topics Covered:

1. TPM Group—Clarke Willey

Target audience for the presentation: Designers, engineers and city and county plan reviewers

Primary learning objectives for the presentation: put some tangible consequences on design decisions=maintenance

Briefly describe the conclusions or analysis you intend to present: There is more than one way, one solution to solve the design problem and actual site conditions and soil greatly impact manageability. A solution that works flawless in the Chesapeake Bay can be costly and ineffective in Memphis. That selecting a culvert pipe (of metal over plastic or concrete) could have long term health welfare and safety consequences down the road. That locating a SCM Chamber in a location may be costing the owner 3x the maintenance cost if they had just designed, drawn, located the structure 10 feet closer to a paved surface. That confines space maintenance costs 3x a non-confined space service. That LID solutions are not maintenance free and far from it.

Conclusion: the solution is going to cost money, with a little thought one can spend the same money with dramatically better results.

2. City of White House is scheduled for a full program audit including document review. Joe passed out an audit checklist provided by TDEC.

Thank you to all who attended. A special thank you to Clarke and Adam!

We hope everyone gained some valuable information from today's meeting, thanks to everyone for the great interaction!

This information will be available on our Facebook page.

Additional Comments and Discussion

Please encourage all local municipalities/counties to attend our monthly meetings. The meetings provide an opportunity for the stormwater community to network and help each other by discussing current and ongoing issues.

- **Next Meeting:** June 6, 2018

(Details on next Agenda)

Adjourned: 11:00 AM

Respectfully submitted,

W. Garrett

Stormwater Coordinator/Goodlettsville Tn./MTSG Chair

Forming Partnerships

Operators of regulated small MS4s are encouraged to utilize partnerships with other governmental entities to fulfill this minimum control measure's requirement. It is generally more cost-effective to use an existing program, or to develop a new regional or state-wide education program, than to have numerous operators developing their own local programs. Operators also are encouraged to seek assistance from non-governmental organizations (e.g., environmental, civic, and industrial organizations), since many already have educational materials and perform outreach activities.

Mid-Tennessee Stormwater Group

Wednesday, May 6, 2018

10 a.m.

Gallatin Civic Center -210 Albert Gallatin Avenue, Gallatin, TN 37066.

Name (printed)	Affiliation
Eric Bischoff	OHM-Advisors
Gina Hutson	Sumner County
Adam Meadors	City of Mt. Juliet
CLARKE WILLEY	TDM GROUP
RICH MAYO	COLLIER ENGINEERING
Duane Allen	City of Hendersonville
Helen Morrison	City of Hendersonville
Joe Phillips	City of White House
Tracey Barrow	Sumner County
Daniel Lakart	ADS
JEFF SAWYER	CEL
Larry Smith	City of Belle Meade
GREG EDRINGTON	CITY OF GOODLETTSVILLE
JUSTIN BRYAN	CEC
Daniela Rodriguez	CEC

Topics covered: see agenda and minutes

Facilitator: Adam Meadors

**Mid-Tennessee Stormwater Group Meeting
Minutes**

Date: Wednesday, June 6, 2018

Time: 10 a.m.

Place: Gallatin Civic Center -210 Albert Gallatin Avenue, Gallatin, TN 37066.

Present: Warren Garrett, Joe Phillips, Cindy Wheeler, Mike Bertotti, Dan Nedridd, Rick Mayo, Eric Bischoff, Adam Meadors, Ashley Morris, Helen Morrison, Duane Allen, Daniela Rodriguez, Steve Casey, Paul Davis, Liana Draner, Benji Freels.

Topics Covered:

Cindy Wheeler from the City of White House presented on Hydrologic Determination's for deciphering between a Wet Weather Conveyance or a Stream. She supplied everyone with a field determination sheet as well as a Guidance sheet to assist. Please see attachments for future reference. The following are the primary indicators for determination, however you should consult a HD certified individual before assuming the determination if any questions arise.

TDEC is very short handed in field personnel and may request MS4's to provide their own HD if requested.

PRIMARY FIELD INDICATORS OBSERVED	YES	NO
1. Hydrologic feature exists solely due to a process discharge	WWC	
2. Defined bed and bank absent, dominated by upland vegetation	WWC	
3. Watercourse dry anytime during February through April 15, under Normal precipitation/groundwater conditions	WWC	
4. Daily flow and precipitation records showing feature only flows in Direct response to rainfall	WWC	
5. Presence of multiple populations of obligate lotic organisms with ➤ 2-month aquatic phase	Stream	
6. Presence of fish (except Gambusia)	Stream	
7. Presence of naturally occurring ground water table connection	Stream	
8. Flowing water in channel and 7 days since last precipitation in Local watershed	Stream	
9. Evidence watercourse has been used as a supply of drinking water	Stream	

Very valuable information and great presentation. Thank you Cindy for the amount of information and a great follow up conversation! I don't really understand why the biology end of the assessment since that normally encompasses the health aspect of a determined stream.

We hope everyone gained some valuable information from today's meeting, thanks to everyone for the great interaction!

This information will be available on our Facebook page.

Additional Comments and Discussion

Please encourage all local municipalities/counties to attend our monthly meetings. The meetings provide an opportunity for the stormwater community to network and help each other by discussing current and ongoing issues.

- **Next Meeting:** July 11, 2018

(Details on next Agenda)

Adjourned: 11:20 AM

Respectfully submitted,

W. Garrett

Stormwater Coordinator/Goodlettsville Tn./MTSG Chair

Forming Partnerships

Operators of regulated small MS4s are encouraged to utilize partnerships with other governmental entities to fulfill this minimum control measure's requirement. It is generally more cost-effective to use an existing program, or to develop a new regional or state-wide education program, than to have numerous operators developing their own local programs. Operators also are encouraged to seek assistance from non-governmental organizations (e.g., environmental, civic, and industrial organizations), since many already have educational materials and perform outreach activities.

Mid-Tennessee Stormwater Group
 Wednesday, June 6, 2018
 10 a.m.

Gallatin Civic Center -210 Albert Gallatin Avenue, Gallatin, TN 37066.

Name (printed)	Affiliation
Warren Garrett	City of Goodlettsville
Joe Phillips	city of white House
Cindy Wheeler	" " "
Mike Bertotti	Wood Group (Formerly Amec Foster Wheeler)
Dan Norvidal	Northstar Env
RICK MAYO	COLLIER ENGINEERING
Eric Bischoff	OHM-Advisors
Adam Meaders	City of Mt. Juliet
Ashley Morris	Waypoint Analytical
Helen Morrison	Hendersonville
Dvane Allen	C.O.H.
Daniela Rodriguez	CEC
Steve Casey	CEC
Paul Davis	MTSG
Liana Dranes	City of Lebanon Stormwater
Benji Freels	City of Lebanon SW.

Topics covered: see agenda and minutes

Facilitator: Warren Garrett



ENFORCEMENT RESPONSE PLAN

(SECTION 4.5)

(Question 9)

Supporting Materials

Question A

shall detail the location of the spill, exact pollutant/s, outline the discovery, containment method/s and specific cleanup steps used to bring the site into compliance. If the discharge of prohibited materials emanates from a commercial or industrial establishment, the owner or operator of such establishment shall also retain an on-site written record of the discharge and the actions taken to prevent its recurrence. Such records shall be retained for at least ten years.

- (f) Illegal Dumping. It shall be illegal for any person to dump liquids or solids that are considered priority pollutants by the U.S. Environmental Protection Agency (EPA) on the ground where there is potential exposure to rain or Stormwater and potential for the pollutant to reach the Municipal Separate Storm Sewer System of the City of Millersville or any water conveyance. (The EPA Priority Pollutant List can be found at <http://www.epa.gov/waterscience/methods/pollutants.htm>.)
- (g) Enforcement. Violations of this section of the Stormwater Ordinance could result in notices of violation, stop work orders, and/or municipal monetary penalties.
- (h) Location of Portable Toilets. Portable toilets must be located no less than 50 feet away from any storm drain inlets, water conveyances or streams and must be located on a flat plane away from any impervious surface. Alternative locations may be approved by the inspector with or without additional safeguards.
- (i) Location of Concrete Washouts. Concrete washout areas must be located at least 50 feet from storm drain inlets, water conveyances, open ditches or streams.
- (j) Cleaning Impervious Surfaces.
 - (1) A vacuum must be used to remove water from any impervious surface during saw cut operations; nearby storm water inlets and other water conveyances must be protected.
 - (2) Before hosing down or pressure washing any impervious surface, the surface must be swept clean and all sweepings, not comprised entirely of rock and soil, disposed of in trash receptacles; rock and soil may be returned to the property as fill. Nearby storm drain outlets and other water conveyances must be protected to keep sediments out of streams and/or the Stormwater system.

19-112. Administrative enforcement

- (a) Notification of Violation. Whenever the Administrator finds that any permittee or any other person discharging storm water has violated or is violating this article or a permit or order issued hereunder, the administrator may serve upon such person

written notice of the violation. Within ten (10) days of the receipt date of this notice, an explanation of the violation and a plan for the satisfactory correction and prevention thereof, to include specific required actions, shall be submitted to the Administrator. Submission of this plan in no way relieves the discharger of liability for any violations occurring before or after receipt of the notice of violation.

- (b) Consent Orders. The Administrator is empowered to enter into consent orders, assurances of voluntary compliance, or other similar documents establishing an agreement with the person responsible for the noncompliance. Such orders will include specific action to be taken by the person to correct the noncompliance within a time period also specified by the order. Consent orders shall have the same force and effect as administrative orders issued pursuant to paragraphs (4) and (5) below.
- (c) Show Cause Hearing. The Administrator may order any person who violates this article or storm water permit or order issued hereunder, to show cause why a proposed enforcement action should not be taken. Notice shall be served on the person specifying the time and the place for the meeting, the proposed enforcement action and the reasons for such action, and a request that the violator show cause why this proposed enforcement action should not be taken. The notice of the meeting shall be served personally or by certified mail (return receipt requested) at least ten (10) days prior to the hearing.
- (d) Compliance Order. When the Administrator finds that any person has violated or continues to violate this article or a permit or order issued hereunder, he may issue an order to the violator directing that, following a specific time period, adequate structures, devices, be installed or procedures implemented and properly operated. Orders may also contain such other requirements as might be necessary and appropriate to address the noncompliance.
- (e) Cease and Desist Orders. When the Administrator finds that any person has violated or continues to violate this article or any permit or order issued hereunder, the administrator may issue an order to cease and desist from all such violations and direct those persons in noncompliance to:
 - (1) Comply forthwith; or
 - (2) Take such appropriate remedial or preventive action as may be needed to properly address a continuing or threatened violation, including halting operations and terminating the discharge.

19-113. Penalties

- (a) Violations - Any person who shall commit any act declared unlawful under this article, who violates any provision of this article, who violates the provisions of any permit issued pursuant to this article, or who fails or refuses to comply with any lawful communication or notice to abate or take corrective action by the City of Millersville, shall be guilty of a civil offense.
- (b) (2) Penalties – Under the authority provided in Tennessee Code Annotated §68-221-1106, it is declared that any person violating the provisions of this article may be assessed a civil penalty by the City of Millersville of not less than fifty dollars (\$50.00) per day or more than five thousand (\$5,000.00) per day. Each day of violation may constitute a separate offense subject to the maximum fine under the authority provided in the Tennessee Code §68-221-1106.
- (c) Measuring civil penalties – In assessing a civil penalty, the Stormwater Manager may consider:
 - (1) The harm done to the public health or the environment;
 - (2) Whether the civil penalty imposed will be a substantial economic deterrent to the illegal activity;
 - (3) The economic benefit gained by the violator;
 - (4) The effectiveness of action taken by the violator to cease the violation;
 - (5) Any unusual or extraordinary enforcement costs incurred by the City of Millersville;
 - (6) Any equities of the situation which outweigh the benefit of imposing any penalty or damage assessment.
- (d) Recovery of damages and costs - In addition to the civil penalty in subsection (2) above, the City of Millersville may recover:
 - (1) All damages proximately caused by the violator to the municipality, which may include any reasonable expenses incurred in investigating violations of, and enforcing compliance with, this article, or any other actual damages caused by the violation.
 - (2) The cost of the municipality’s maintenance of storm water facilities when the owner of such facilities fails to maintain them as required by this article.

19-114. Appeals. Pursuant to Tennessee Code Annotated § 68-221-1106(d), any person aggrieved by the imposition of a civil penalty or damage assessment as provided by this article may appeal said penalty or damage assessment. Upon issuance of a citation or notice of violation