



Document:	Murfreesboro PIE Plan		
SWMP Catalog #:	PEPP	01.010	Created: June, 2012
Purpose:	To describe the City’s plan for education and participation of the public, including business operators, on stormwater and surface water quality, as required in the NPDES MS4 permit section 4.2.1 and as local situations indicate the need; to list the instructions needed for staff to carry out the plan		
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Owner Dept.:	Water Resources Department		
Approval:	Department Director		

Table of revisions

Date	Description	Approval initialed	Dated
June, 2013	Updated PIE document, including a more rigorous rationale and updated list of projects for MTSU		
Jan. 17, 2014	Changed the SWMP catalog no.; added Policy & Goals, and Principles sections to this catalogue document	RLH	01/17/2014
Sept., 2019	Review and update for audit	RLH	9/6/2019

See next page for background information related to this SWMP document.

Background

The first of six federally-mandated minimum measures of a Phase II, small MS4 stormwater quality management program is public education and outreach. Because sources of pollution to stormwater can happen anywhere rain falls, anyone outdoors can have an effect on runoff quality. Washing, fueling, sweeping, disposing wastewater and trash, mowing, painting, camping, are common activities that might result in pollution. Even tossing out a cup of coffee can be a source of contamination, albeit a tiny fraction, to stormwater runoff. Thousands of tiny inputs of contamination, however, will degrade a stream. For this reason, practically everyone needs to be educated about the importance of stormwater quality.

The latest (9/30/2016) NPDES permit issued by the Tennessee Department of Environment and Conservation includes a requirement for a *Public Information and Education (PIE) plan*, section 4.2.1.

Water and Sewer Department stormwater staff developed an initial, working PIE plan at the end of June, 2012. Changes are inevitable as new information, opportunities and needs arise. Key City departments in stormwater and surface water quality education are Water and Sewer, Parks and Recreation, and Planning and Engineering. MTSU, a co-permittee with the City under the NPDES permit, is also a partner and contractor to the City on stormwater education.

Policy & Goals

To implement education, including not only media, but hands-on activities, on stormwater and surface water quality so that residents understand the connection between their activities and water quality; so that they value water resources and act accordingly.

Principles

- i. Staff is to maintain sound, scientifically based knowledge on storm and surface water quality within the City's jurisdiction.
- ii. Communicate with accurate messages.
- iii. To comply with the education requirements and goals of the MS4 permit
- iv. To lead public education and participation efforts as necessary to achieve goals and compliance, but also to listen to and partner with other educators.

Procedure

Contained in the PIE plan that follows.

PIE plan begins next page.

Public Information and Education (PIE) Plan
for Stormwater/MS4 Program
City of Murfreesboro, Tennessee

Introduction

As a part of the NPDES stormwater permit under which the City is regulated, TDEC included the requirement that cities prepare a written plan that details specific goals and specific public information events/activities that will occur over the remainder of the permit cycle.

NPDES Permit Requirements

- i. The MS4 shall implement a public education and outreach program;
- ii. the program shall focus on steps that the public (and institutions) can take to reduce pollutants in stormwater runoff;
- iii. it must target specific pollutants and sources that may cause or contribute to impairment;
- iv. it must address *hot spots* and their particular pollutants of concern; and
- v. permittees are encouraged to pursue educational programs that lend themselves to water quality improvements.

By the end of the first year of permit coverage, the permittee (i.e., City of Murfreesboro) shall develop a Public Information and Education Plan (PIE). The PIE plan shall include targeted educational campaigns addressing the following issues:

- a. General public awareness concerning housekeeping and maintenance activities
- b. Home owner associations and commercial property managers about need for maintenance activities for permanent stormwater control structures (ponds, vaults, bioretention, etc.)
- 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
- e. General public and professional chemical applicators 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.

See the appendix to this PIE plan for the full language of the permit.

Goals of PIE Plan

In general, the goals of this PIE plan are the following:

- i. to set forth a plan to educate citizens of Murfreesboro on the value of water resources, and *on impacts of stormwater discharge to water bodies and the steps that the public (along with commercial, industrial, or institutional entities) can take to reduce pollutants in stormwater runoff* (8/31/2010 TN NPDES permit, section 4.2.1);
- ii. to fulfill the NPDES stormwater permit (MS4) requirement for a PIE plan; and
- iii. to provide a structure for planning education projects, for inter-departmental communication, and for budgeting and recordkeeping.

Specific education projects required by TDEC

The NPDES permit includes numerous specific education requirements, all of which we need to be sure to accomplish, and which alone will require significant resources; extracted from the permit are the following:

- General education of the *public*
- General education of *commercial, industrial* and *institutional* entities
- Targeting *specific pollutants* (that may cause or contribute to impairment* of streams)
- Targeting *specific sources* (that may cause or contribute to impairment* of streams)
- Targeting *hot spots*
- General public awareness concerning *housekeeping* and *maintenance*
- Home owner associations (*HOAs*)
- Local *engineering* and *development* community re: long-term water quality impacts
- Application/*applicators* of pesticides, fertilizers, herbicides
- Storage, use and disposal of oil and other *automotive*-related fluids
- General public awareness concerning *illicit* connections, sanitary sewer seepage, spills, etc.
- Municipal *employees* awareness concerning illicit connections, sanitary sewer seepage, spills, etc.
- Local engineering, development and construction community re: *construction* phase water quality impacts
- Municipal employee and contractors awareness of water quality impacts of daily *operations*

* Note that use of the word *impairment* here in the permit does not refer exclusively to 303(d) impairments, but to any pollutants and sources that may cause or contribute to impairments.

For tracking and recordkeeping purposes, the 18 highlighted words/word pairs above are used in education-project lists to associate specific projects with the above-listed categories.

Education team

- City staff
(Primary departments involved in storm water and surface water quality education are Water and Sewer, City TV, Parks and Recreation, Development Services, and Building and Codes.)
- MTSU Facilities Management
- Rutherford County (Project WET outreach for Rutherford County MS4s)

Other parties (e.g., Stones River Watershed Association, Tennessee Environmental Council) participate with us, and we with them, in local education.

How are education projects identified and selected?

Projects are identified and selected through the best professional judgment of staff, considering:

- the list of education items in the NPDES permit (above)
- existing and potential sources of stream impairment
- common problems (often identified by common complaints)
- results of stream and stormwater sampling
- results of visual stream assessments
- other educators' experiences and input (local educators, EPA, examples from other MS4 programs)

To illustrate how projects are selected, here are two or three examples. When the MTSU WaterWorks program created and made available the brochure, *Homeowner's Guide to Water Quality*, the City took the opportunity to use the Guide, by adding local information to the text and printing and mailing copies via water bills to approximately 25,000 households in Murfreesboro. It was a case where we used material developed by an educator (WaterWorks) to address two of the listed NPDES program requirements: *general education of the public*, and *awareness concerning housekeeping and maintenance*.

In another case, staff had received at least two complaints about waste disposal, on the county square occurring during festivals. The square sits near Lytle Creek, an impaired stream (lack of vegetative cover; silt; E-coli). The complaints triggered two education efforts. One, we labeled storm drains around the square with circular aluminum plates with the Do Not Dump – Drains to River message. Two, the City's MS4 co-permittee and education partner MTSU met with the organization that manages activities on the square, communicated the issue, and assisted them to incorporate restrictions in vendor-use permits.

Types of education projects

Education and outreach takes a variety of forms, as shown in table below:

General education audiences	Program development education*	Methods
Public, general Children and youth Commercial properties Residential properties Industrial properties	Riparian buffers New-development regulations City PPGH practices Maintenance of stormwater treatment facilities	Guidance documents Web content City TV Radio Presentations at schools Outdoor classroom sessions
Targeted audiences/ sources	* refers to education that supports particular elements of the stormwater program	Meetings Face-to-face contacts (incl. pre-cons for example) Direct mail Through HOAs Through property management companies
Hot spots (restaurants, gas stations, carpet cleaning and other washing operations) Known stream impairments (e.g. nutrients)		

Messages

The overall or general message is stated above, under **Goals of the PIE Plan**, item i. Some specific messages, for example:

- a. Everyone’s actions (yours) in the watershed affect everybody’s use and enjoyment of the waters. “We all live upstream of somebody.”
- b. Riparian buffers are important to water quality; if you live on land adjacent streams, then provide a buffer zone adjacent the creek.
- c. Hot spots need to clean up their act.
- d. Vegetative stormwater controls (green infrastructure) is key to cleaning up stormwater and surface water quality.
- e. Use and maintenance of proper EPSC controls is essential for water quality and compliance with regulations.
- f. See attached list of the messages incorporated into Parks and Recreation classes.

Implementing the plan

Overview

Education is carried out by three main groups of people: *city staff*, *MTSU Facilities Management*, and the *Rutherford County / Project WET* staff.

City staff educate the public and the regulated community through routine operations; for example:

- Pre-application meetings: developers, engineers
- Pre-construction meetings: construction contractors
- Plans review committee: developers, builders, contractors
- Web site updates: public in general, development community

- Annual events such as Turtle Day and Tree Day

Staff also occasionally conduct or participate in one-time outreach projects (e.g., school presentations). These special outreach projects are taken on as best professional judgment identifies needs and as time and resources allow; often work on special projects is done in conjunction with MTSU Facilities Management.

The Rutherford County MS4s entered into an interlocal agreement whereby Rutherford County hired a Project WET certified trainer and environmental educator, who will promote the Project WET materials in Rutherford County Schools insofar as possible, teach in local schools, and in general to do outreach, education and participation, educating people, primarily school age children and youth on stormwater runoff, streams, hydrology, water resources.

MTSU Facilities Services is the office at MTSU that implements the MTSU stormwater program. Facilities Services has staff with experience in water education, and the City has contracted with them for stormwater education services. Each year a list of outreach events and education projects is developed, for the upcoming fiscal year. Projects are described on a project worksheet form by MWSD stormwater staff and/or MTSU Facilities Services staff, from which list the Facilities Services staff selects ones for fulfilling the contract.

Process

1. Education opportunities that arise during routine operations

The MWSD NDPEs stormwater program coordinator should prepare and maintain up-to-date fact sheets that may be used as talking points or as handouts in the context of routine operations. These fact sheets focus on surface water quality issues for the following operations:

- Pre-application meetings conducted by the Planning staff
- Pre-construction meetings conducted by the Engineering staff
- Plans review committee by the Building and Codes Department staff
- Annual events such as Turtle Day and Tree Day, by different departments

These fact sheets should be reviewed and updated annually. Copies are kept as a part of the city's storm water management plan (SWMP).

2. City web site

Located here (2019): <http://www.murfreesborotn.gov/index.aspx?NID=288>

Among other things, the stormwater home page and calendar is used to publicize program participation opportunities. For example, stream clean-ups, tree plantings, algae pull/s, Earth Day events, etc.

3. Rutherford County Project WET

The Project WET education is guided by an annually renewing inter-local agreement between the four local-government, Rutherford County MS4 programs, and is administered by the Rutherford County Engineering Department, which maintains a Project WET contract with the Discovery Center. Each MS4 pays a portion of the contract amount of \$30,000 per year – Murfreesboro’s portion is \$11,140 per year.

The educational activities and goals were established in a scope of services during the preparation of the agreement. The Rutherford County MS4s meet approximately twice per year to advise and monitor progress of the education program. The program educator keeps track of outreach, teaching, etc., with numbers of students, time of contact and prepares a report at end of each fiscal year.

Project WET materials are filed in the MWSD stormwater ST files #12 006.

4. MTSU MOU projects

In 2012, the City and MTSU entered into a Memorandum of Agreement (MOU) through which the City pays MTSU \$45,000 per year to conduct special education projects; to prepare for and work several outreach events; to attend meetings of education and outreach organizations (e.g. Stones River Watershed Association); and to perform various reporting and recordkeeping. As such, the MOU functions as a sort of contract.

The MOU refers to a list of potential education projects, events and services. This list is maintained by the City MWSD and the MTSU Facilities Services staff. For planning purposes and cost basis, each project is described in a one to two-page project worksheet.

The MTSU Education MOU is filed in the MWSD stormwater [ST files #13 008](#), and the educational projects lists and descriptions are filed in an annual MTSU Education Projects folder in the stormwater program files; e.g. for 2018-19, [ST file #18031](#).

As configured, the MOU is an annual agreement, running from July 1 to June 30, and may be renewed annually. Potential projects for the upcoming fiscal year should be developed and described by March 31st, and MTSU and MWSD staff select projects and plan for the upcoming year between April and July 1. The timing is related to MTSU’s and the City’s budget process.

5. Projects directed by MWSD and by other City departments

MWSD staff occasionally conduct or participate in one-time outreach projects (e.g., school presentations). These special outreach projects are taken on as best professional judgment identifies needs and as time and resources allow; often work on special projects is done in conjunction with MTSU Facilities Management.

In these cases, the procedure for MWSD staff is to set up a stormwater file for the project, initiating it with an education project worksheet.

Other City departments – particularly the Parks and Recreation Department – are involved in education projects that touch on surface and stormwater quality issues. At this time, the stormwater coordinator is not usually involved, other than to document the outreach with name, schedule, and number of persons reached and what are the primary stormwater-related messages.

6. Education of City employees and contractors *on water quality impacts of daily operations/pollution prevention and good housekeeping*

At present, education includes:

- Annual or biennial review and update PPGH and O&M plans by NPDES stormwater manager and facility PPGH leader.
- Annual or biennial inspection of facilities by NPDES stormwater manager, focusing on activities and procedures that might affect stormwater runoff
- Memos as necessary as stormwater policies change that affect operations
- Once or twice per five year permit cycle presentations by NPDES stormwater manager (i.e. for new employee education and existing employee reminders and updates)

Facilities and operations

- MWSD O&M facility
- Parks and Recreation operations on Overall Street
- Public Works facility on Florence Road (Solid Waste, Fleet Maintenance)
- Airport
- City fueling stations (West Main Street, and Florence Road)
- Old Fort Golf Course maintenance facility
- Street Department (West Main Street)
- Solid waste convenience center (West Main Street)

- City schools
- Murfreesboro Electric Department operations facility
- Fire stations
- Police stations

Management practices common to two or more facilities include:

- Spill kits and spill recovery procedures for vehicles
- Materials storage practices
- Use of fertilizers
- Use of pesticides
- Use of herbicides
- Washwaters and other potential non-stormwater discharges
- Erosion and sediment control

With respect to these common operations, the NPDES stormwater program manager prepares policies and procedures, that are transmitted to affected department directors.

Key persons and responsibilities

Person/position	Responsibility	Time Frame
R. Haley	Maintain PIE plan and related forms; oversee keeping of records for education projects; guide content and emphasis of education efforts; involve other (non MWSD) City departments in education planning; leads education of other departments on stormwater and surface water quality (PPGH)	Ongoing; annual reviews
J. Upham	Data gathering on stream conditions; participate in discussions and planning on education projects; conduct certain outreach events (e.g. Blackman Elementary Career Day)	Ongoing, annual reviews
K. Carr	Web site updates for MWSD stormwater pages; incl. notices of public participation opportunities	Ongoing
Rutherford Co. reps., Eric Hill, Phyllis Fultz	Manage and maintain employment of Project WET educator; invoice other MS4s; schedule mtgs as needed	Ongoing
MTSU rep., Alan Parker, Cynthia Allen	Oversees MTSU responsibilities under the MOU; involved with MTSU staff and in dialogue with City staff in planning for annual MOU projects	Ongoing
City Parks and Recreation Dept., R. Singer	RS: Oversees outdoor education programs at Wilderness Station (near to West Fork Stones River) of Barfield Crescent Park	Ongoing

Appendices

- MS4 NPDES permit language regarding PIE plan
- Parks and Recreation’s stormwater messages
- Education project development worksheet
- Recent MTSU/City projects list

4.2. Minimum Control Measures

The Stormwater Management Program is made up of the following minimum control measures:

4.2.1. Public Education and Outreach

MS4s shall implement a public education and outreach program. The focus of the program shall be on impacts of stormwater discharges to water bodies and the steps that the public (along with commercial, industrial, or institutional entities) can take to reduce pollutants in stormwater runoff. The program must target specific pollutants and sources that may cause or contribute to impairment. For example, in certain areas known as [hot spots](#), the MS4 must focus education and outreach on those particular pollutants of concern. Some educational programs can lend themselves to water quality improvements. Permittees are encouraged to pursue those programs and document related or expected water quality improvements.

By the end of the first year of permit coverage, the permittee shall develop a Public Information and Education Plan (PIE) that details specific goals and specific public information events/activities that will occur over the remainder of the permit cycle. The PIE shall incorporate components from outreach campaigns and one on one communications and shall incorporate a mode to evaluate the plan's effectiveness so adjustments can be made (if necessary) The PIE shall also include targeted educational campaigns addressing the following issues:

- a. General public awareness on 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 professional chemical applicators 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

MS4s shall track and maintain records of public education and outreach activities. A summary of this information shall be included in the annual report.

4.2.2. Public Involvement/Participation

MS4s shall implement a public involvement/participation program. Such program shall comply with all applicable state and local public notice requirements. Elements of the program may include participation in local stormwater management work groups, public notices of MS4 meetings and public hearings, recruiting education volunteers, and involving the public with program coordination, detection of illicit discharges and monitoring efforts. The program shall encourage and promote citizen reporting of illegal spillage, dumping, or otherwise illicit disposal of materials into the MS4 system.

MS4s shall publicize program participation opportunities by methods designed to reach the intended audience.

MS4s shall facilitate opportunities for citizen involvement through activities such as creating a citizens' stormwater advisory council, volunteer stream monitoring programs, storm drain marking, riparian plantings or stream clean-up events.

MS4s shall develop, continue to develop and implement a method of advertising the public involvement opportunities listed above. Newly designated MS4s shall have this advertising method implemented within 180 days of coverage under this permit. Currently permitted MS4s shall develop and implement the advertising method within 30 days of coverage under this permit. The MS4 may develop a website that includes information that will inform stakeholders of actions that will result in behavior changes that will improve water quality, provide a press release or advertisement of activities to local cable networks, radio stations and/or newspapers, or other alternate method that provides an effective equivalent.

MS4s shall track and maintain records of public involvement and participation activities. A summary of this information shall be included in the annual report.

Parks and Recreation Department
Stormwater and Surface Water Quality Messages

The Parks and Recreation Department is able to include, and keep a record of when the following messages are presented in its classes, programs and events:

1. Murfreesboro is in the Stones River watershed.
2. Our watershed supplies our drinking water from Percy Priest Reservoir.
3. Storm drains drain to the nearest stream and end up in Percy Priest Reservoir.
4. Stormwater does not get cleaned before it enters the stream.
5. Litter tossed on the ground can get washed into the nearest stream.
6. Oils, grease, and solvents dumped in drains become pollution in our streams.
7. Lawn litter (grass, sticks, and leaves) can clog drains and create flooding.
8. Use the same trails to access streams for fishing and recreation.
9. Leave and maintain established buffer zones along streams and creeks.
10. Properly disposed of fishing lines, lures, and bait to prevent pollution.
11. Your behavior affects the health of our streams and our drinking water supply.
12. Identify conservation groups, i.e. Stones River Watershed Assoc. or Cumberland River Compact.
13. Contact the Murfreesboro Stormwater Dept for more information.



Murfreesboro Stormwater Program Education Project Worksheet



Title			Drafted:	
Rationale:	Author:		Selected:	
Goal				
Watershed/s				
Impairments				
Audience				
Pollutants				
Tasks (non-city)				
Tasks (city staff)				
Resources				
Date/s				
Outcome/ measures				
Follow-up				
Values*	Project:		Follow-up:	

* See MTSU, MOU, Project Workbook (Value Schedule) for guidance on figuring a value.

Stormwater Public Information and Education (PIE) Plan
Year 9 PROJECT LIST 2019-2020
MTSU Stormwater Services

Targeted Project List -

- 1. Riparian Restoration/Cleanup Event– location to be determined based on need**
- 2. UT Extension Outreach & Pledges**
 - a. Farmers Market – 2 events- already scheduled for 8/23/19 and 10/1/19
- 3. Permit Compliance / Annual Reporting/ PIE Documentation**
 - a. End of Year TV Segment (Summer 2020)
- 4. Businesses Outreach and Education- to be determined based on need**
 - a. Select 20 hotspot Businesses for site investigations and outreach
- 5. Targeted Hotspot Outreach – Automotive Businesses**
 - a. Reprint additional automotive brochures (additional costs expected to be ~\$500 or less)
 - b. Mail letter and auto brochure to remaining auto businesses (estimate 200 or less from research)
- 6. Neighborhood Outreach – Door Hangers for Nutrients**
 - a. Select Watershed and distribute door hangers
 - b. Reprint additional door hangers (additional costs expected to be ~\$500 or less)
- 7. Elementary/Youth Education –**
 - a. Creeks to Classrooms – school outreach to be determined
 - b. Stones River Waterfest – already scheduled for 9/13/19
- 8. Stream Monitoring Assistance –**
 - a. Dry Weather IDDE Screening expected summer 2019
 - b. Visual Stream Assessments(VSAs)- expected summer 2019
 - c. Biological Monitoring- as needed

Annual Events

- 1. Oakland Wetland (School Outreach)-** Expected Fall 2019 & Spring 2020
- 2. MTSU Volunteer Events-**
 - a. Fall/ National Public Lands Day-** expected September 2019
 - b. Spring/ Parks Day-** expected April 2020
- 3. Tree Day-** expected Spring 2020
 - a. Public Meeting, Letters and Tree Distribution**

4. **Earth Day** – expected April 2020
5. **Boat Day**- expected last Saturday of June 2020
6. **Meetings-**
 - a. Monthly Permit and Stakeholders meetings (MWRD, SRWA, FOG, Rutherford MS4s)
7. **Other Program Assistance** (examples below ongoing on regular basis as needed)
 - a. Website content, Press Releases, Public Service Announcements,
 - b. Complaint Follow up
 - c. Partners for projects and campaigns
 - d. Promotional items and booth materials

BASE MOU CONTRACT \$45,000

(Quarterly Billing of \$11,250 PLUS Any Additional Costs billed as Incurred up to \$15k)