



| | | | |
|------------------------|--|------------------|----------------------------|
| Document: | Murfreesboro PIE Plan | | |
| SWMP Catalog #: | PEPP | 4.2.1 | 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 | | |
| Owner: | Josh Upham | 615-642-6332 (c) | |
| | Water Resources Department | 615-848-3200 | |
| | 220 NW Broad Street 37130 | | |
| 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 |
| July, 2022 | Revisions due to staff and permit changes | JRU | 7/28/22 |
| | | | |
| | | | |

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 influence 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 (9/1/2022) 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 Resource 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 Resources, Parks and Recreation, and Planning and Engineering. MTSU, a co-permittee with the City under the NPDES permit, and Project WET, are also a partners/contractors 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 pollutants of concern; and
- v. permittees are encouraged to pursue educational programs that lend themselves to water quality improvements.

City of Murfreesboro shall develop a Public Information and Education Plan (PIE). The PIE plan shall include targeted educational campaigns addressing the following issues:

Goals of PIE Plan

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

- i. *to reduce or eliminate behaviors and practices that cause or contribute to the impacts of stormwater discharges on water bodies and the steps audiences can take to reduce pollutants in stormwater runoff to the maximum extent practicable 9/01/2022 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.
- iv. Shall include:
 - a. Specific public information/education activities that are designed to meet management measures.
 - b. Schedule of events.
 - c. Method to evaluate effectiveness and define improvement.

Target Audiences and Management Measures

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:

1. Public

Management Measures

- a. General Awareness of impacts on water quality from general housekeeping maintenance/activities.
- b. Awareness of the importance of maintenance activities for operators of permanent BMPs/SCMs.
- c. Awareness of proper storage, use, disposal of pesticides, herbicides, and fertilizers
- d. Awareness of proper storage, use, and disposal of oil and other automotive-related fluids.

Target Audiences

- HOAs
- Schools
- Local elected officials
- Professional chemical applicators
- Other commercial and professional stakeholders

2. Engineering and Development Community

Management Measures

- a. Awareness of the stormwater ordinances, regulations, and guidance material related to long-term water quality impacts.
- b. Awareness of stormwater ordinances, regulations, and guidance materials related to construction phase water quality impacts.

Target Audiences

- Engineers
- Landscape architects
- Developers
- Builders
- Professional Stakeholders

3. Employees

Management Measures

- a. Awareness of water quality impacts from daily operations
- b. Pollution Prevention and Good Housekeeping
- c. The awareness of identifying and reporting procedures for illicit discharges

Education team

- City staff
(Primary departments involved in storm water and surface water quality education are Water Resources, 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.

Lastly, whether through solid waste reports or citizen complaints, staff has been alerted to areas of abundant grass clipping near curb inlets. As a response, MWRD and MTSU staff distributed door hangers and personalized letters informing residents of city code and improper placement of yard waste can be a source of pollution.

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 Planning commission Annual events Training workshops |
| 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) are 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 Trees for Streams Day and Water fest

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 MWRD 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 MWRD 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 Trees for Streams Day and Waterfest

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 and social media

Located here (2022): <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 MWRD stormwater ST files #12 006.

4. MTSU MOU projects

In 2022, the City and MTSU renewed/revised a 2012 Memorandum of Agreement (MOU) through which the City pays MTSU \$52,000 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 MWRD 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 MWRD 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 MWRD 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 MWRD and by other City departments

MWRD 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 MWRD 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

- MWRD 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 |
|---------------------------------|---|-------------------------|
| Stormwater Manager | Maintain PIE plan and related forms; oversee keeping of records for education projects; guide content and emphasis of education efforts; involve other (non MWRD) City departments in education planning; leads education of other departments on stormwater and surface water quality (PPGH) | Ongoing; annual reviews |
| Water Quality Specialist | Data gathering on stream conditions; participate in discussions and planning on education projects; conduct certain outreach events (e.g. Reeves Rogers Elementary outreach day) | Ongoing, annual reviews |
| Communications Specialist | Web site updates for MWRD stormwater pages; incl. notices of public participation opportunities, social media posts | Ongoing |
| Rutherford Co. reps. | Manage and maintain employment of Project WET educator; invoice other MS4s; schedule mtgs as needed | Ongoing |
| MTSU rep. | 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. | Oversees outdoor education programs at Wilderness Station (near to West Fork Stones River) of Barfield Crescent Park | Ongoing |

Method for evaluating effectiveness

- Project summaries are created for each education project. Evaluation to be conducted as part of the report.
- All activities discussed and evaluated annually in preparation of the annual report.
- Evaluations incorporated in yearly project list.

Appendices

- Parks and Recreation's stormwater messages
- Education project development worksheet
- Recent MTSU/City projects list

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
DRAFT MTSU Stormwater Services for City of Murfreesboro
Year 12 PROPOSED PROJECT LIST 2022-2023 (updated 7-27-22)

Targeted Project List -

1. Riparian Restoration/Cleanup Event–

2. UT Extension Outreach

- a. **Farmers Market-** conducted July 19, 2022 at UT Extension, estimated attendees 1583 overall, 6 sign ups, 63 items distributed (45 educational/ 18 promotional), pollution prevention tips
- b. **Chemical Applicators/Nutrient Outreach-**

3. Permit Compliance Assistance

- a. **Ongoing Reporting-** PIE Project List Updates Documentation
- b. **End of Year Reporting-**video, annual review /evaluations

4. Civic Outreach and Education- as invited or able

- a. **Rotary –**
- b. **Garden Clubs**
- c. **Murfreesboro Parks-**

5. Businesses Targeted -Hotspot Outreach/IDDE – identified by City based on need

- a. Mail letter and brochure to selected businesses – apartment complexes, other?

6. Neighborhood Outreach –

- a. **Door Hangers- or mailing –** possibly Puckett Creek area based VSA algae?

7. Elementary/Youth Education –

- a. **Classrooms**
- b. **Oakland Wetland -if available**
- c. **Murfreesboro Parks-** Heritage Camp conducted July 25, 2022, Youth camp 3-6th grade, 3 staff, total 14 attendees, 37 items distributed (22 educational/15 promotional). (Who Trashed the TN River activity, at home pollution prevention, creek critters/ benthics and DTW booklets.
- d. **Stones River Waterfest-** scheduled for September 16, 2022

8. Stream Monitoring Assistance – scheduled for September

Annual Events

1. MTSU Volunteer Events-

- a. **Fall/ National Public Lands Day-** volunteer recruitment* proposed 9/24 or 10/1

