



Metro Nashville Municipal Separate Storm Sewer System Permit Public Information & Education Plan

Created: August 2012

Updated: October 2022 – (New Outreach Strategies)

1.0 INTRODUCTION:

With issuance of the third cycle of Metro Nashville’s Municipal Separate Storm Sewer System (MS4) permit, there is an increased emphasis on the amount of public education and outreach Metro Water Services (MWS) will be responsible for overseeing. The first major undertaking will involve developing a Public Information and Education (PIE) plan. The PIE plan will outline the stormwater educational strategies, identify targeted educational approaches, and list yearly goals and accomplishments. A majority of MS4 permit items are coordinated and overseen by the MWS Stormwater NPDES Section. However, development and implementation of the PIE plan will be a joint effort between NPDES and the MWS Communications Section.

The main goals of stormwater education activities will be to increase public awareness for purposes of eliminating illicit discharges and improper disposals, reducing nonpoint source pollutants through better land management practices (i.e., fertilizer, sediment, oil, etc.), reducing overall runoff quantities through innovative development strategies, and ultimately improving water quality of receiving streams. In the new permit, Stormwater is required to target specific “hot areas”, which are defined in the permit as: *“an area where land use or activities generate highly contaminated runoff, with concentrations of pollutants in excess of those typically found in stormwater. Examples might include operations producing concrete or asphalt, auto repair shops, auto supply shops, large commercial parking areas and restaurants.”* In some of Nashville’s sub-watersheds, public education will be the primary Best Management Practice (BMP) implemented for improving stormwater runoff quality, therefore, improving receiving water quality. For example, if NPDES staff or a received complaint finds that a stream segment or sub-watershed is impacted by a specific pollutant, targeted public education will be distributed to the surrounding community aimed at reducing non-point source runoff from that specific pollutant (i.e., pet waste, fertilizer, etc.).

1.1 RESPONSIBLE PERSONNEL:

While the entire NPDES Section and MWS Communications Section will be contributing to implementing PIE plan objectives, specific personnel within each department have been identified to oversee certain aspects of the plan. Table 1 depicts general PIE plan objectives and responsible personnel.

Table 1 – PIE Plan Responsible Party

Personnel	PIE Plan Responsibility	Contact Information
Communications Team	Reviews/Approves all distribution of public information/education materials Promotion of education and outreach events on social media outlets Assists in the updating of NPDES web pages	615-862-4494
NPDES Education Coordinator	Coordinates MS4 permit specific educational activities (industrial, commercial, construction education) Assists with coordinating and participating in major public education events Documents public education events and activities for Annual Report submittals Coordinates targeted mail-outs and outbound calling public education activities Develops public education materials Assists in the updating of NPDES web pages	615-880-2420
NPDES Education Specialist	Oversees school-specific education programs Oversees/coordinates the MWS implementation of the Tennessee Smart Yards Program Assists, as needed in the development of public educational materials	615-880-2420
NPDES Permit Group Supervisor	Reviews/Oversees PIE Plan objectives to be consistent MS4 permit requirements. Assists with Public Education coordination as needed.	615-880-2420

1.2 PIE PLAN GOALS AND TIMEFRAMES:

Goals for the PIE plan will be broken up into the following three main categories:

Goal 1: Meet and/or exceed MS4 permit requirements

Goal 2: Increase the fundamental understanding of water pollution for Nashville students, residents, businesses, and municipal employees.

Goal 3: Encourage use of better management practices that result in improved water quality of runoff from MS4 and private facilities within Metro’s MS4 jurisdiction.

Measuring the success of each goal will involve different evaluation procedures. Goal 1 will be, perhaps, the easiest objective to measure. While some of the MS4 permit language is vague, there are some identified milestones and deadlines that can be assessed in each MS4 annual report for completeness. Assessing the effectiveness of the PIE plan in accomplishing Goals 2 and 3 will be more difficult and are discussed in greater detail in Section 5 of this document.

2.0 Targeted Audience Groups:

In order to accomplish the PIE plan objectives, the first step is to identify targeted audiences for which education delivery methods will be tailored towards. The targeted audience will be determined based on a variety of factors, some of which will include general land use, business/community types, geographical areas, previous complaints, and perceived educational needs.

2.1 School Groups/Youth Camps

School children and youth are perhaps one of the most important demographics to target for stormwater education, as they will shape the future of water quality within Metro. MWS will engage school classes in projects and programs that connect students to the social, economic, and environmental impacts of stormwater issues and solutions, and to related careers.

2.2 “Hot Areas” within Metro

As discussed in Section 1, the new MS4 permit requires Metro to target “hot areas” as we designate. MWS NPDES will utilize its vast monitoring data, general knowledge from field investigations, and citizen complaints to aid in determining “hot areas”. The determined “hot areas” can often be classified into three main categories based on overall land use associated pollutants of concern. Table 2 refers to the typical pollutants expected in runoff from each major urban land use category. For purposes of public education, the three major urban land use categories have been identified to target specific messages: Residential, Commercial, and Industrial. These targeted educational messages will be included in the educational material (i.e. mailouts, brochures, door hangers) developed specifically for each category.

Table 2 – Typical Pollutant Runoff from Major Land Use Categories

Major Land Use	Typical Pollutants	Typical Source	Resulting Water Quality Degradation to Target in Educational Messages
Residential	<ol style="list-style-type: none"> 1. Nutrients 2. Sediment 3. Pathogens 4. Organics 	<ol style="list-style-type: none"> 1. Over-fertilization, Pet Waste, Human Waste and Detergents from failing septic systems 2. Grading areas without maintained controls and removing stream bank vegetation 3. Failing septic systems, illegal cross-connections of sanitary and stormwater, and pet waste 4. Dumping of leaves/grass clippings in conveyances 	<ol style="list-style-type: none"> 1. Increased algal blooms, depleted dissolved oxygen levels from decaying algae 2. Reduced water clarity for aquatic plants, smothers aquatic life, transports other pollutants 3. Potentially harmful to human health 4. Decomposition depletes dissolved oxygen levels within streams
Light Commercial	<ol style="list-style-type: none"> 1. Hydrocarbons (Oil & Grease) 2. Trash 3. Nutrients 4. Sediment 	<ol style="list-style-type: none"> 1. High-traffic parking lot areas, leaking storage tanks, etc. 2. Poor grounds upkeep, especially in parking areas and around dumpsters 3. Landscaping/golf courses 	<ol style="list-style-type: none"> 1. Toxic to aquatic life and impact drinking water supplies 2. Aesthetically displeasing, can block drainage pipes causing erosion, can be harmful to wildlife 3. Increased algal blooms, depleted dissolved oxygen levels from decaying algae

		4. Grading/developing without maintained controls and removing stream bank vegetation.	4. Reduced water clarity for aquatic plants, smothers aquatic life, transports other pollutants.
Industrial/ Heavy Commercial	1. Metals 2. Sediment 3. Hydrocarbons (Oil & Grease)	1. Exposed industrial processes/improper disposal 2. Exposed industrial processes/improper disposal and gravel parking lots with heavy truck traffic 3. Equipment leakage, leaking storage containers, high-traffic pervious areas	1. Acute or chronic toxic impacts to aquatic wildlife 2. Reduced water clarity for aquatic plants, smothers aquatic life, transports other pollutants 3. Toxic to aquatic life and impact drinking water supplies

2.3 Business Type/Community “Hot Areas”

There are certain types of businesses scattered throughout the county in which MWS NPDES have found to have a high potential for polluted runoff. MWS will conduct targeted educational campaigns towards these respective businesses. Business types that will be recipients of targeted education will include:

- ☔ Ready Mix Concrete Plants – focus on sediment runoff;
- ☔ Asphalt Mixing Plants – focus on sediment and oil & grease runoff;
- ☔ Recycling Centers – focus on sediment, metals, and trash runoff;
- ☔ Automotive Salvage Yards – focus on sediment and automotive fluid runoff;
- ☔ Large Automotive Repair Shops – focus on automotive fluid runoff; and
- ☔ Landscaping companies – focus on sediment runoff and application of pesticides, herbicides, fertilizers, and fungicides

2.4 High Citizen Complaint Zones

MWS receives numerous complaints about a variety of issues throughout the county. Complaints range from people dumping materials in storm ditches (leaves, limbs, trash, etc.) to people discharging illegal substances to the storm system. Upon analysis of complaints, MWS may choose to target certain areas for localized education. Depending on the magnitude and type of pollutant found in the waterway, MS4, or adjacent areas, NPDES will determine the necessary extent of the public education campaign. For example, if multiple residents on multiple streets are found to be dumping yard waste into a stormwater ditch, the whole community will receive educational material on proper disposal requirements and harmful impacts the waste can contribute to waterways. This type of education will be performed on a case by case basis.

2.5 Large Civic Educational Events

As prescribed in the MS4 permit, Metro is required to perform stormwater education at a minimum of six large public events per calendar year. MWS Stormwater will satisfy this requirement by participating in large community events that relate to environmental awareness. The following large civic events have been preliminarily identified for Metro to participate with a stormwater education component:

1. Local Farmers Markets
2. Nashville Earth Day Festival
3. Urban Runoff 5K and Water Quality Festival

4. Tomato Art Fest
5. TN STEAM
6. Cumberland River Compact's Dragon Boat Festival

2.6 Post Construction Treatment Devices (SCM) Owners

Developing sites that meet certain thresholds within the county are required to install permanent stormwater treatment devices, otherwise referred to as Stormwater Control Measures (SCMs), that are usually designed to treat stormwater runoff for water quality and quantity purposes. Once the site is completely developed, the property owner becomes responsible for permanent maintenance of SCMs. Metro will specifically target owners of BMPs to achieve proper maintenance.

2.7 Grading Contractors/Development Community

The development community, including land developers and grading contractors, will be the target of specific educational outreach. Education geared toward the development community will be focused on the impacts of sediment runoff during construction and general pollutant runoff from pervious surfaces after construction is completed.

2.8 Municipal Maintenance Employees

All Metro departments with field maintenance staff will be a key target audience for distributing stormwater education materials. As prescribed in the MS4 permit, municipal maintenance employees shall be trained on potential stormwater impacts that could result from maintenance activities. In addition, municipal field staff shall be trained on identifying and reporting occurrences of illicit discharges.

2.9 General Metro Residency

Perhaps the most important constituency within Metro to educate for stormwater quality purposes is the general residents within Metro. While there may exist overlap within the above-described target areas, Metro will also implement techniques to try to reach the masses on more general terms.

2.10 Social Media Community

Stormwater-focused posts are developed to reach a broad audience on MWS Facebook, Instagram, Twitter, and NextDoor to address both general pollution concerns and promote NPDES's educational opportunities and materials. MWS Stormwater works with the MWS Communications section to ensure posts are effective and easily understood. NextDoor can also be used to target specific neighborhood water quality concerns via posting in a specified geographic location. Promotion of workshops, events where MWS will participate or host, and other presentations is completed using the social media platforms.

3.0 Education Techniques for Targeted Audiences:

MWS will utilize a variety of tools to perform stormwater education. Education delivery methods will be designed to achieve maximum distribution to the targeted audiences. For example, educational efforts for the above-described “hot areas” may include mail-outs, outbound calling, coordinating with local non-profit watershed groups, and possibly holding community meetings. Table 3 matches the potential educational technique to the specific targeted audiences. As the MS4 public information plan proceeds, new techniques may be utilized for specific targeted audiences and the PIE Plan will be updated accordingly.

Table 3 – Educational Delivery Methods For Each Targeted Audience Group

Targeted Audience Group	Public Education/Outreach Technique
School Groups/Youth Camps	<ul style="list-style-type: none"> ☞ In-person or virtual presentations/demonstrations ☞ Distribution of educational materials designed for youth. (i.e., games, puzzles, tests, etc.)
General “Hot Areas”	<ul style="list-style-type: none"> ☞ Mail-outs (area-specific) ☞ Social Media (NextDoor used for specific neighborhoods) ☞ Outbound calling (area-specific) ☞ Soliciting help from local non-profit watershed groups in distributing educational materials ☞ Co-host community meetings with local non-profit watershed groups
Community/Business Type “Hot Areas”	<ul style="list-style-type: none"> ☞ Mail-outs (business-specific) ☞ Handing out materials (Dry-Weather Field Screening and Industrial Inspection Program) ☞ Hosting workshops
High Citizen Complaint Zones	<ul style="list-style-type: none"> ☞ Mail-outs (problem/complaint-specific) ☞ Outbound calling (problem/complaint specific) ☞ Social Media Posts
Large Community Events	<ul style="list-style-type: none"> ☞ Staffing stormwater educational booths ☞ Performing stormwater demonstrations ☞ Handing out educational materials
Post Construction BMP Owners	<ul style="list-style-type: none"> ☞ Mail-outs ☞ Handing out materials/Drop in visits by NPDES
Grading Contractors/Development Community	<ul style="list-style-type: none"> ☞ Face to face during Grading Permit process ☞ Participate in TDEC’s Level 1 EPSC Workshop
Municipal Maintenance Employees	<ul style="list-style-type: none"> ☞ In-person presentations/video ☞ Handing out materials
General Metro Residency (General Stormwater Education)	<ul style="list-style-type: none"> ☞ Hosting workshops ☞ Channel 3 Public Service Announcements (PSAs) ☞ Public signage (vehicle decals, billboards, etc.) ☞ Website and social media
Social Media Audience	<ul style="list-style-type: none"> ☞ Develop stormwater specific posts for MWS’s Facebook, Instagram, Twitter, and NextDoor

4.0 Education Implementation Schedule:

PIE Plan implementation will be based, first and foremost, on MS4 Permit deadlines. In order to keep track of stormwater education deadlines and responsibilities, a Public Education Implementation Table has been developed that will be the blueprint for yearly public education activities. The Public Education Implementation Table incorporates at least one type of education activity geared toward each Targeted Audience Group.

Table 4 – Public Education Implementation Examples

Task	Activity	Frequency
1.	Give out stormwater educational materials at every pre-construction meeting for Grading Permits.	Annually
2.	Present at all TDEC Level 1 EPSC workshops in Nashville.	As Scheduled by TDEC
3.	Perform in-person training or provide maintenance personnel with stormwater educational materials.	As Deemed Necessary
4.	Send mail-outs or perform outbound calling to high complaint zones as determined necessary.	As Deemed Necessary
5.	Perform dry-weather field screening on businesses with increased potential for stormwater pollution runoff.	Routinely
6.	Send mail-outs to critical post-construction BMP owners that were installed as per Metro’s grading permit requirements to treat water quality and quantity runoff.	As Deemed Necessary
7.	Make updates to MWS stormwater website pages to reflect latest regulations, program updates, new material, etc.	As Deemed Necessary
8.	Host TN Smart Yards Workshops in-person or virtually.	Monthly/Quarterly
9.	Participate in or host at least 6 large community/civic events.	Annually
10.	Provide public notice for all large Metro construction projects (possible website postings).	Annually
11.	Host an industrial stormwater workshop for all current TMSP sites and provide recording when necessary.	Every Permit Cycle
12.	Provide opportunity for public participation/involvement for stormwater awareness projects (i.e., stream clean-ups, tree plantings)	Annually
13.	Post to social media routinely about stormwater pollutant concerns, public education opportunities, and any other updates on the program.	Routinely
14.	Presentation and demonstrations focusing on stormwater education at Metro Nashville Public Schools.	Annually
15.	Distribute stormwater educational materials to building permit applicants for single family homes.	Annually
16.	Present each Annual Report to a public forum (i.e., Stormwater Management Committee).	Annually

5.0 PIE Plan Effectiveness Assessment:

Throughout implementation of the PIE Plan, MWS will attempt to assess the effectiveness of the educational messages. Some potential assessment methods may include performing surveys to certain target audiences during presentations and analyzing monitoring data before and after targeted education has been performed.

5.1 PIE Database

A Microsoft Access Database has been developed to track and maintain records for each public education opportunity. The database includes the event name, date of event, type and focus of stormwater education, staff involved, and the audience number. The database will also link to any documentation connected to the event (i.e., presentation, pictures). This tracking will give MWS Stormwater an accurate estimate on audience size for each event and for the public involvement and education effectiveness.