

Section 1 Introduction

Run-off associated with storm water or snow melt and non-stormwater discharges in urban/suburban settings have been identified as sources of pollutants in our nation's waterways. In an effort to reduce pollution and improve the quality of water, the National Pollutant Discharge Elimination System (NPDES) was created in 1972 by the Clean Water Act—an amendment to the original Federal Water Pollution Control Act passed in the late 1940s. The NPDES is a permitting mechanism regulated by the Environmental Protection Agency (EPA), and for NPDES permits issued in the Commonwealth of Pennsylvania by the Pennsylvania Department of Environmental Protection. The regulations and requirements of the NPDES can be found in Title 40 (40 CFR) of the federal code of regulations. A permit issued through the NPDES allows an entity, such as a municipality, to discharge stormwater into receiving waterways through its separate storm sewer system (MS4) in regulated areas. The permit requires the entity to implement a set of controls designed to reduce or prevent pollutants from entering waterways. Most of the guidance outlined in the manual is specific to Phase II MS4 Permits.

An NPDES permit requires a permitted entity to develop and administer a Stormwater Pollution Prevention Plan (SWPPP) or a Stormwater Management Program (SWMP) to achieve compliance with the permit. Municipalities, with a Phase II MS4 permit, develop SWMPs to address six minimum control measures for reducing or preventing pollutants from entering waterways through stormwater and non-stormwater discharges. A SWPPP can be a component of a municipal SWMP. For each of the control measures, two critical elements for compliance include selecting proper controls, or Best Management Practices (BMPs), and documenting the controls.

Within the six control measures is Minimum Control Measure (MCM) six, which addresses municipal operations and maintenance—or Good Housekeeping practices. To reduce or prevent polluted discharges, a municipality should implement a set of BMPs as it relates to its operations. For permit compliance, a municipality must document the Good Housekeeping BMPs associated with facilities and activities.

1.1 Manual Purpose and Scope

The purpose of the Lancaster Inter-Municipal Committee (LIMC) Municipal Operations and Maintenance Good Housekeeping Guidance & BMP Manual is to provide guidance, recommendations, information and templates for member municipalities to develop an Operation & Maintenance Program and select effective BMPs and document the selected BMPs for municipal operations as it relates to stormwater and non-stormwater discharges for an issued NPDES MS4 permit and corresponding MCM #6 requirements. As indicated, MCM #6 of an issued permit outlines pollution prevention and good housekeeping requirements and recommendations for municipal operations to help reduce or prevent pollutants that may be discharged to receiving waters.

When used with other BMP manuals, guidance documents, and plans (e.g. Public Education and Outreach Plan, Illicit Discharge Detection and Elimination Plan, and so on) this manual becomes an effective tool for building a comprehensive SWMP. However, this manual can also stand alone as a tool for selecting and documenting municipal operational and maintenance activities as it relates to reducing pollutants into waterways.

Templates and guidance provided within the manual are further designed to aid municipalities to achieve compliance with a Pennsylvania issued NPDES MS4 Permit—specifically MCM #6 in the Pennsylvania General Permit 13 (PAG-13) for Small Municipal Separate Storm Sewer Systems.

1.1.1 Overview of Manual

The manual contains five primary sections including (1) an introduction with applicable references and guidance for use, (2) information regarding selection and use of BMP facts along with O&M Program development, (3) Operation and Maintenance Program (O&M Program) development template, (4) Best Management Practices (BMP) Fact Sheets, and (5) an appendix with templates for documentation compliance and relevant materials referenced within the manual. The manual was designed to provide more detailed guidance for compliance to municipal entities with MS4 permits relative to operations and maintenance. The BMP Fact Sheets will further outline documentation protocols to help achieve compliance with a permit. At the same time, following the recommendations and protocols in the manual—specifically the documentation guidance recommendations—provides a level of risk management to a municipality.

A municipal operation does not need to limit its program to the elements outlined within this manual. This manual is a centralized location with detailed guidance to aid a municipality in developing and administering its SWMP. The BMP Fact Sheets contained within the manual are considered “standard” practices for any municipality. In essence, every municipal entity most likely possesses fixed facilities or activities outlined in the fact sheets. At the same time, a municipality is not required to implement and follow all BMP Fact Sheets within in this manual. A municipality should build its program based on its needs, available resources, and limitations to the Maximum Extent Practicable (MEP). Furthermore, BMP fact sheets can be modified to reflect actual municipal operations.

This manual will further provide tools for a municipal entity to build a program for compliance with MCM #6 including a BMP selection matrix. Templates are designed to minimize redundant documentation practices. The templates and corresponding guidance for their use can be considered the primary tool within this manual. The LIMC Municipal Operations and Maintenance Good Housekeeping Guidance & BMP Manual will provide the base documentation templates required for permit compliance.

This manual can be amended as required or needed by the LIMC, including the modification or addition of BMP Fact Sheets. Templates can be updated or modified to increase efficiency or reflect changes in the NPDES.

Most BMP fact sheets incorporated into this manual are considered source control BMPs. Treatment control and other BMPs may be considered for future versions of the manual as deemed applicable or necessary by the LIMC. Information regarding treatment control BMPs can be found via various sources including the Pennsylvania Department of Environmental Protection. Additional source control BMPs may be considered for future versions as well.

1.1.2 Reference to Municipal SWMP

The municipal SWMP is the all-encompassing program for a municipality’s plan to achieve compliance with the Clean Water Act, NPDES, MS4 permit, and relative federal and state laws and requirements to reduce or prevent pollutants from discharging into receiving waters. The LIMC Municipal Operations and Maintenance Good Housekeeping Guidance & BMP Manual should be referenced by the municipal SWMP as an aid or guidance document that is used in the development and administration of the program.

1.1.3 Reference to MS4 Pollution Prevention/Good Housekeeping Plan (MS4 PPGHP)

The MS4 PPGHP is a specific section of a municipal SWMP and outlines the entire portion of the program for compliance with MCM #6. The MS4 PPGHP should have specific reference to the LIMC Municipal Operations and Maintenance Good Housekeeping Guidance & BMP Manual as a guidance document if the manual is used. If only portions of the BMP Manual are used, the MS4 PPGHP should indicate as such in documented form. The MS4 PPGHP should be organized as a SWPPP document. More information is provided in Section 2.

1.1.4 Glossary of Terms

Best Management Practices (BMPs)

A general term used to describe techniques for controlling water pollution that may include engineered systems, training and education initiatives, documentation practices, and material controls.

Clean Water Act

A federal act that establishes the basic guidelines for regulating pollutants, and discharging pollutants into waters of the United States. The act also provides water quality standards.

Fixed facilities

A structure fixed in a location that is either operated and/or maintained by an entity. Stormwater management structural BMPs (i.e. basins, inlets, etc.), fueling locations in a municipal yard, pumping station, treatment plant, and municipal buildings are all fixed facilities.

Minimum Control Measure (MCM)

Controls that must be implemented by an entity permitted through the NPDES to discharge stormwater (and includes non-stormwater discharges) to waters of the United States and Commonwealth of Pennsylvania. The controls are conditions of receiving a permit to reduce pollutants from entering waterways. There are six MCMs for Phase II MS4 permits and include public education & outreach, public involvement & participation, illicit discharge detection & elimination, construction site run-off, post-construction run-off, and municipal operations (good housekeeping).

Municipal Separate Storm Sewer System (MS4)

A conveyance or system of conveyances owned by a public entity (such as a municipality) that collects and conveys stormwater (and non-stormwater at times) to waters of the United States and/or Commonwealth of Pennsylvania. An MS4 includes, but is not limited to pipes, basins, inlets, roads with drainage systems (i.e. curbs), roads, manmade channels, outfalls, collectors, and so on. An MS4 is not a combined sewer or publicly owned treatment plant.

National Pollutant Discharge Elimination System (NPDES)

A permit program regulated by the Environmental Protection Agency that establishes requirements for an entity to discharge into waters of the United States.

Non-stormwater discharge

A discharge that either enters an MS4 conveyance and/or enters a waterway via an MS4 or outfall that was not produced by stormwater. Examples of non-stormwater discharges allowed by a permit include flows from fire-fighting activities, dechlorinated swimming pool water, residential car washing, and diverted stream flows. Examples of non-stormwater

discharges generally not allowed include municipal vehicle washing, chlorinated swimming pool water, and spills of hazardous materials. Note: a spill is not a discharge until the spill enters the storm sewer or discharges directly to a receiving waterway.

Operator

Any person or entity that operates a “facility” or “activity” that is subject to the requirements of the NPDES. An operator is not always the owner.

PA Department of Environmental Protection (DEP)

A state agency with the mission to protect Pennsylvania’s air, land, and water from pollution. The DEP is the permitting authority for the NPDES in the Commonwealth of Pennsylvania. The DEP issues or approves permits.

Stormwater discharge

Run-off from stormwater, melted snow, and surface run-off & drainage.

Stormwater Management Program (SWMP)

A comprehensive program outlines the planning, facilitation, and documentation of activities aimed at reducing pollutants discharged into waterways from run-off associated with storm water and other activities causing non-stormwater discharges that may result in polluted waterways.

Stormwater Pollution Prevention Plan (SWPPP)

A comprehensive program that is essentially the same as an SWMP. However, this title is generally reserved or used for construction stormwater run-off control for projects that are required to obtain permit coverage under the NPDES. Generally referenced as an Erosion and Sediment Control Plan in Pennsylvania.

US Environmental Protection Agency (EPA)

An independent federal agency established with the defined mission to protect human health and the environment. The EPA is the regulatory authority for the NPDES.

1.2 Regulatory Requirements

The federal Clean Water Act is the primary legislation aimed at controlling and reducing pollutants—especially caused by run-off from storm water and non-stormwater discharges—into the nation’s waterways. As a result, additional federal and state requirements and have been enacted to reduce pollutants into waterways. Several regulatory documents include, but are not limited to the NPDES, Title 40 (40 CFR), 25 Pa. Code Chapter 92a, and the Pennsylvania Stormwater Management Act (Act 167 of 1978). Most municipalities in an urban/suburban setting are generally required to obtain a permit, and thus develop and administer stormwater management programs to assure compliance with the regulatory requirements.

1.2.1 Clean Water Act and NPDES

The origin of clean water regulations can be founded in 1948 with the establishment of the Federal Water Pollution Control Act. From 1972 to 1977, the Act was reorganized and became known as the Clean Water Act. More requirements were further established in 1987 by Congress with the Water Quality Act—another amendment to the original Water Pollution Control Act. The 1987 amendment specifically labeled stormwater as a “problem.”

The Clean Water Act provides regulations for water quality and discharging pollutants to waterways. Technically, by the Clean Water Act, it is unlawful to discharge a pollutant from a point source into waterways that have a defined use such as navigable or swimmable, unless a permit is obtained.

The EPA developed the National Pollutant Discharge Elimination System (NPDES) as a permit program to control discharges through promulgation of regulations that can be found in Title 40 (40 CFR). The NPDES provides the guidelines and requirements for an entity with an issued permit. A permittee is required to develop a Stormwater Management Program (SWMP) or Stormwater Pollution Prevention Plan (SWPPP) to make a reasonable and documented effort to reduce and/or control pollutants to receiving waters. In the Commonwealth of Pennsylvania, the EPA authorized the state to issue permits with respect to the NPDES for municipal entities. Essentially, Pennsylvania has an approved state program per the requirements outlined in Title 40 (40 CFR). The DEP and EPA provide regulatory oversight of issued permits.

1.2.2 MS4 Permit and Good Housekeeping

For a municipality or similar entity, the permit authorizing discharges is known a Municipal Separate Storm Sewer System permit—or MS4 permit. Phase 1 permits were issued to large municipalities with populations greater than 100,000 people such as Philadelphia, PA. The phase 2 program, issued in 1999, was developed for smaller municipalities in urbanized areas such as the LIMC municipalities. Essentially, a municipality is given a permit authorizing discharges to surface waters. However, the municipality must implement and facilitate a program with consideration to the six control measures (for Phase II) defined by the NPDES to be considered in compliance with the issued permit.

The requirements focus on controlling potential sources of pollution and educational activities to the Maximum Extent Practicable (MEP). MCM #6 of an MS4 Permit is identified as Pollution Prevention/Good Housekeeping Practices for municipal operations. MCM #6 requires a municipality to (1) develop and implement an operation and maintenance program with a goal of preventing or reducing pollutants from discharging into waterways, (2) train employees in proper techniques relative to operations, and (3) determine the Best Management Practices (BMPs) with measurable goals to achieve pollutant reduction or prevention. It is important to develop a written plan and outline documentation procedures for Good Housekeeping practices.

PAG-13 outlines three broad and general BMPs under MCM #6 for implementation by permitted municipalities. The BMPs provided essentially outline the requirements and provide measurable goal guidance as noted in the above paragraphs. This manual provides the mechanism to achieve compliance with the requirements outlined.

1.3 Use of Manual

The LIMC Municipal Operations and Maintenance Good Housekeeping Guidance & BMP Manual is designed to aid a municipality, or similar entity, with the development and facilitation of a Good Housekeeping program as required by the NPDES and an MS4 Permit relative to operations for fixed facilities and programs. Primarily, the manual should be used for the following:

1. Develop a written O&M Program.
2. Selecting and implementing BMPs.
3. Documenting selected BMPs.
4. Measuring the effectiveness of selected BMPs (including goals).

The manual also provides relevant information to the entire municipal SWMP, and particularly to the MS4 Pollution Prevention/Good Housekeeping Plan (MS4 PPGHP). More information can be found in Section 2.

1.3.1 Selecting and Implementing BMPs

Selection of BMPs should follow a mantra of “common sense.” For example, if a municipality does not have a salt storage facility, then the Salt Storage BMP (BMP Fact Sheet GH-23) should not be selected. BMPs selected should match actual municipal facilities and programs, along with fiscal and resource availability. At the same time, several BMP Fact Sheets contain alternative practices to help in tailoring a program to specific needs. For example, a municipality may only have two or three vehicles. This would most likely not warrant a self-managed wash facility. The vehicle and equipment cleaning BMP outlines practices for using a commercial car wash in lieu of implementing the entire BMP and associated self-managed wash facility.

More information is provided in Section 2 for selecting and documenting BMPs, along with a BMP Selection Matrix in the appendix.

1.3.2 Measuring BMP Effectiveness

Each BMP Fact Sheet will outline methods for measuring and documenting effectiveness of the BMP. Several BMPs have no known measurement for effectiveness and will indicate as such. At the same time, the effectiveness of several BMPs will be dependent on the effectiveness of other BMPs. If this is the case, the fact sheet will indicate as such. It is important to measure and document the effectiveness of a selected BMP. Measurable goals for BMPs are required as well. Measurable goals for BMPs are visited in Section 2 of this manual.

1.4 Additional Resources

Pennsylvania Department of Environmental Protection at

http://www.depweb.state.pa.us/portal/server.pt/community/dep_home/5968

United States Environmental Protection Agency at http://cfpub.epa.gov/npdes/home.cfm?program_id=6

Lancaster Inter-Municipal Committee (LIMC) at <http://www.thelimc.org>

Lancaster County Clean Water Consortium (LCCWC) at <http://www.lccwc.com/>

Lancaster County Conservation District at <http://www.lancasterconservation.org/>

Lancaster County Planning Commission at <http://www.co.lancaster.pa.us/planning/site/default.asp>