

PRIMARY MS4 PROGRAM CONSIDERATIONS

GENERAL

MS4 permittees are required to develop, implement, and enforce a Stormwater Management Program (SWMP). Per USEPA guidance, the focus of the SWMP is to describe how the permittee will prevent and/or reduce the discharge of pollutants from its MS4 and addresses the following program areas:

- Construction Site Runoff Control
- Illicit Discharge Detection & Elimination (IDD&E)
- Pollution Prevention/Good Housekeeping
- Post-Construction Runoff Control
- Public Education and Outreach
- Public Involvement/Participation
- Program Effectiveness
- Total Maximum Daily Loads (TMDLs)*

This handout provides regulatory and recommended considerations associated with the first seven program areas listed. TMDLs are addressed separately.

PROGRAM EFFECTIVENESS

Introduction

Operators of regulated MS4s are required to develop a Stormwater Management Program (SWMP) that includes measurable goals and to implement needed stormwater management controls (BMPs). The process of developing a plan, implementing the plan, and evaluating the plan is a dynamic, iterative process intended to help permittees toward achievement of goals. A SWMP is the “master” program management document and set of tools for facilitating permit requirements in a cohesive and integrated manner. The SWMP document focuses on the big picture, and uses the elements of the permit (MCMs, Impaired Waters Plan, TMDL Plan, etc.) to achieve program goals.

40 CFR 122.26(d)(2)(v) and 122.34(g) requires MS4s to assess controls and the effectiveness of their stormwater programs. Municipal stormwater programs are also required to reduce the discharge of pollutants to the “maximum extent practicable” and satisfy the water quality requirements of the Clean Water Act. In addition, a number of government and scientific reports have found that better water quality data is needed if MS4s are to evaluate the effectiveness of their program in meeting water quality goals.

A set of over-arching and guiding goals should be established to facilitate a SWMP and achieve the primary purpose of a SWMP. The goals are further considered guiding objectives and/or references during annual reviews as a component of the iterative process. SWMP goals should be assessed annually. Two types of goals should be considered within a SWMP: 1) Qualitative (Narrative) and 2) Quantitative (Numeric).

Qualitative (narrative) goals are best described as development goals. Development goals are associated with establishing an understanding, baseline, information, and so on that is necessary to have in place to facilitate the program and adhere to permit requirements. Qualitative goals also generally focus on local conditions and corresponding improvements that may help alleviate regulatory responsibilities.

Examples of qualitative goals are as follows:

- Complete MS3 delineations within the Urbanized Area.
- Establish a baseline understanding of the nature and the public's understanding of sediment-laden discharges.
- Restore the floodplain of a reach of stream to improve functionality, water quality, and aesthetics.

Quantitative (numeric and/or specific pollutant reduction) goals are better described as pollutant reduction goals identified based on information generated during program facilitation and/or outlined in the permit. Maximum Extent Practicable (MEP) is identified and established with each quantitative goal, and annual assessments (based on criteria outlined within the SWMP) dictate modifications, changes, etc. that may be required to achieve MEP (the iterative process). Examples of quantitative goals are as follows:

- Reduce the sediment loading in discharges from Outfall 001 by 10% in five (5) years.
- Reduce the observed and averaged concentration of sediment in discharges from Outfall 001 by 60 NTUs in three (3) years.

A SWMP document should address the program facilitation processes associated with both the state-issued permit requirements and the USEPA expectations/requirements. A SWMP can be set up as follows with described processes and considerations:

- Certifications and approvals
- SWMP Amendments and Revisions
- Introduction and Municipal Description (drainage basins/catchments, MS3s, outfalls, receiving waters, roles & responsibilities, and similar)
- Sharing Responsibility (partners)
- Body of SWMP (pollutants of concern, program goals, decision rationale/processes, schedule(s), fiscal/budget considerations, assessment & review criteria, and similar)
- Discharge Monitoring Program
- Reporting
- Minimum Control Measures (MCMs)
- Pollutant Reduction Plans (PRPs) and Coordination Plans (Impaired Waters Plan(s), Chesapeake Bay Pollutant Reduction Plan (CBPRP), PennDOT Coordination Plan, and similar)
- Applicable Attachments (documented assessments, field reports, maps, budget, etc.)

It is important that the program is reviewed and assessed—particularly the over-arching program goals—on an annual basis. The assessment is the baseline foundation for demonstrating the iterative process is occurring.

PUBLIC EDUCATION & OUTREACH (MCM 1)

Introduction

Education is an important step in working toward improving receiving water quality both locally and regionally. By increasing public awareness and encouraging a change in the general public's approaches to reducing stormwater pollution based on concerns, a permittee may reduce/eliminate or prevent stormwater pollution caused by common daily activities. An informed and knowledgeable community is crucial to the success of a stormwater management program overall.

Baseline Regulatory Requirements

1. Implement a public education program to distribute educational materials to the community, or conduct equivalent outreach activities about the impacts of stormwater discharges on local waterbodies and the steps that can be taken to reduce stormwater pollution; and
2. Determine the appropriate best management practices (BMPs) and measurable goals for this minimum control measure.

PADEP General MS4 Permit (PAG-13) Requirements

BMP #1: Develop, implement and maintain a written Public Education and Outreach Program.

- (1) For new permittees, a written Public Education and Outreach Program (PEOP) shall be developed and implemented within one year following approval of coverage under this General Permit, and shall be re-evaluated each year thereafter and revised as needed.
- (2) For existing permittees, the existing PEOP shall be reviewed annually and revised as necessary.

The permittee's PEOP shall be designed to achieve measurable improvements in the target audience's understanding of the causes and impacts of stormwater pollution and the steps they can take to prevent it.

BMP #2: Develop and maintain lists of target audience groups that are present within the areas served by the permittee's regulated small MS4. In most communities, the target audiences shall include residents, businesses (including commercial, industrial and retailers), developers, schools, and municipal employees.

- (1) For new permittees, the lists shall be developed within one year following approval of coverage under this General Permit, and reviewed and updated as necessary every year thereafter.
- (2) For existing permittees, the lists shall continue to be reviewed and updated annually.

BMP #3: The permittee shall annually publish at least one issue of a newsletter, a pamphlet, a flyer, or a website that includes general stormwater educational information, a description of the permittee's SWMP, and/or information about the permittee's stormwater management activities. The list of publications and the content of the publications must be reviewed and updated at least once during each year of permit coverage. Publications should include a list of references (or links) to refer the reader to additional information (e.g., DEP and EPA stormwater websites, and any other sources that will be helpful to readers). The permittee must implement at least one of the following alternatives:

- Publish and distribute in printed form a newsletter, a pamphlet or a flyer containing information consistent with this BMP.
- Publish educational and informational items including links to DEP's and EPA's stormwater websites on the permittee's website.

(1) For new permittees, stormwater educational and informational items shall be produced and published in print and/or on the Internet within the first year of permit coverage.

(2) In subsequent years, and for existing permittees, the list of items published and the content in these items shall be reviewed, updated, and maintained annually.

The permittee's publications shall contain stormwater educational information that addresses one or more of the six MCMs.

BMP #4: Distribute stormwater educational materials and/or information to the target audiences using a variety of distribution methods, including but not limited to: displays, posters, signs, pamphlets, booklets, brochures, radio, local cable TV, newspaper articles, other advertisements (e.g., at bus and train stops/stations), bill stuffers, presentations, conferences, meetings, fact sheets, giveaways, and storm drain stenciling.

All permittees shall select and utilize at least two distribution methods annually. These are in addition to BMP #3, above.

Considerations and Recommendations

- Educational outreach should be one of the "last" control measures that a permittee should address and plan for. Outreach materials and efforts should reflect the needs, issues, focus areas, and characteristics discovered, encountered, or driving activities across the other MCMs and Impaired Waters Plan(s).
- Public Education and Outreach is primarily a set of non-structural BMPs that can be implemented to support program goals associated with pollution prevention and/or pollution reduction.
- Active outreach efforts rely on physical engagements, public interaction, and similar activities. Active outreach is inherently tied to MCM #2. Active outreach is a recommended approach for illicit discharge issues and pollution reduction objectives.
- Passive outreach efforts generally do not consist of physical activities. Passive outreach is a recommended approach for pollution prevention objectives.
- Goals should be able to provide an indicator or measurement of effectiveness (e.g. while publishing a newsletter (or similar) and documenting the newsletter was published can be considered a measurable goal, it fails as a measurable goal that could indicate the effectiveness of the newsletter distribution).

Measurable Goal Example

Goals of a program are required to be able to be measured for effectiveness per the permit and regulations. As an example, if educational outreach materials distributed (under MCM #1) are regarding proper maintenance of erosion and sediment control devices on a construction site, then the results of inspections under MCM #4 will determine if the BMP is effective or not. The measurable goal would be something along the lines of "all erosion and sediment control devices on sites are maintained as required/necessary." If these materials are distributed, and greater than 50% of contractors/developers are not maintaining erosions and sediment control devices as documented through inspections, then

the educational materials distribution is not effective, and the approach needs modified (iterative process).

PUBLIC INVOLVEMENT & PARTICIPATION (MCM 2)

Introduction

Public involvement and participation is essentially an extension of active public education and outreach efforts by providing more active education exercises that may increase awareness, or assist a permittee with protecting/improving water quality and adhering to the water quality standards requirements of the CWA. It is acceptable to combine MCM 1 and MCM 2 into one plan.

Baseline Regulatory Requirements

1. Comply with applicable State, Tribal, and local public notice requirements; and
2. Determine the appropriate best management practices (BMPs) and measurable goals for this minimum control measure. Possible implementation approaches, BMPs (i.e., the program actions and activities), and measurable goals are described below.

PADEP General MS4 Permit (PAG-13) Requirements

BMP #1: Develop, implement and maintain a written Public Involvement and Participation Program (PIPP) which describes various types of possible participation activities and describes methods of encouraging the public's involvement and of soliciting the public's input.

The PIPP for new permittees shall be developed and implemented within one year following approval of coverage under this General Permit. All permittees shall reevaluate the PIPP annually and make revisions as necessary.

The PIPP shall include, at a minimum:

- (1) Opportunities for the public to participate in the decision-making processes associated with the development, implementation, and update of programs and activities related to this General Permit.
- (2) Methods of routine communication to groups such as watershed associations, environmental advisory committees, and other environmental organizations that operate within proximity to the permittee's regulated small MS4s or surface waters receiving the permittee's discharges.
- (3) Making Annual MS4 Status Reports and all other plans, programs, maps and reports required by this General Permit available to the public on the permittee's website, at the permittee's office(s), or by mail upon request.

BMP #2: The permittee shall advertise to the public and solicit public input on the following documents prior to adoption or submission to DEP:

- Stormwater Management Ordinances (for municipalities);
- Standard Operating Procedures (SOPs) (for non-municipal entities); and
- Pollutant Reduction Plans (PRPs), including modifications thereto.

- (1) For Ordinances and SOPs, the permittee shall provide notice to the public; provide opportunities for public comment; document and evaluate the public comments; and document

the permittee's responses to the comments prior to finalizing the documents. The permittee shall provide this documentation to DEP upon request.

(2) For PRPs, public participation requirements are specified in Appendices D and E of this General Permit.

BMP #3: Regularly solicit public involvement and participation from the target audience groups using available distribution and outreach methods. This shall include an effort to solicit public reporting of suspected illicit discharges. Assist the public in their efforts to help implement the SWMP.

(1) The permittee shall solicit public involvement and participation from target audience groups on the implementation of the SWMP. The solicitation can take the form of public meetings or other events. The public shall be given notice in advance of each meeting or event. During the meetings or events, the permittee should present a summary of progress, activities, and accomplishments with implementation of the SWMP, and the permittee should provide opportunities for the public to provide feedback and input. The presentation can be made at specific MS4 events or during any other public meeting. Existing permittees shall conduct at least one public meeting that includes information on SWMP implementation by March 15, 2023; new permittees shall conduct at least one public meeting within 5 years following approval of General Permit coverage.

(2) The permittee shall document and report instances of cooperation and participation in MS4 activities; presentations the permittee made to local watershed organizations and conservation organizations; and similar instances of participation or coordination with organizations in the community.

(3) The permittee shall also document and report activities in which members of the public assisted or participated in the meetings and in the implementation of the SWMP, including education activities or organized implementation efforts such as cleanups, monitoring, storm drain stenciling, or others.

Considerations and Recommendations

- Public involvement activities should be one of the "last" control measures that a permittee should address and plan for. Public participation and efforts should reflect the needs, issues, focus areas, and characteristics discovered, encountered, or driving activities across the other MCMs and Impaired Waters Plan(s).
- Public Involvement & Participation is primarily a set of non-structural BMPs that can be implemented to support program goals associated with pollution prevention and/or pollution reduction. Public involvement is a strong tool to support over-arching program goals.
- An Act 2 remediation effort by an industrial source is actually a form of public involvement and participation.

Measurable Goal Example

Goals of a program are required to be able to be measured for effectiveness per the permit and regulations. MCM #2 efforts are most effective supporting over-arching program goals. As an example, elevated sediment and debris (trash, litter, etc.) is encountered in a delineated MS3 originally through discharge monitoring. An over-arching program goal has been established to reduce the observed sediment and debris discharged over a 3-year period. The over-arching goal will be measured through monitoring data (sampling, screening, etc.) at the outfall and field investigations of the MS3, with a numeric consideration of reduced sediment and debris found in discharges (with interim milestone

reductions identified each year). The permittee implements a number of control measures across the MCMs to support and facilitate the goal. Under MCM #2, the permittee selects “volunteer road clean-up” efforts. The student council at a local high school is engaged to inquire interest for a community service project. The organization agrees and conducts the road clean-up effort. At the end of year 1, the permittee finds (through monitoring data and field investigations) that the first interim milestone of reductions at the outfall has been reached. This finding provides an indication that the public involvement effort (and other control measures selected) is currently effective and progress towards goal achievement is evident.

ILLICIT DISCHARGE DETECTION & ELIMINATION (MCM 3)

Introduction

Illicit Discharge Detection & Elimination (IDD&E) is a crucial element of a SWMP to protect receiving waterways from concentrated pollutants that may result in the regulated system causing and/or contributing to an impairment. Elimination and/or control of illicit discharges will allow a permittee to focus on stormwater run-off efforts to protect and/or improve the water quality of receiving waterways.

Baseline Regulatory Requirements

1. A storm sewer system map, showing the location of all outfalls and the names and location of all waters of the United States that receive discharges from those outfalls;
2. Through an ordinance, or other regulatory mechanism, a prohibition (to the extent allowable under State, Tribal, or local law) on non-stormwater discharges into the MS4, and appropriate enforcement procedures and actions;
3. A plan to detect and address non-stormwater discharges, including illegal dumping, into the MS4;
4. The education of public employees, businesses, and the general public about the hazards associated with illegal discharges and improper disposal of waste; and
5. The determination of appropriate best management practices (BMPs) and measurable goals for this minimum control measure.

PADEP General MS4 Permit (PAG-13) Requirements

BMP #1: The permittee shall develop and implement a written program for the detection, elimination, and prevention of illicit discharges into the regulated small MS4. The program shall include the following:

- Procedures for identifying priority areas. These are areas with a higher likelihood of illicit discharges, illicit connections or illegal dumping. Priority areas may include areas with older infrastructure, a concentration of high-risk activities, or past history of water pollution problems.
- Procedures for screening outfalls in priority areas. The program shall include dry weather field screening of outfalls for non-stormwater flows, and sampling of dry weather discharges for selected chemical and biological parameters. Test results shall be used as indicators of possible discharge sources.
- Procedures for identifying the source of an illicit discharge when a contaminated flow is detected at a regulated small MS4 outfall.
- Procedures for eliminating an illicit discharge.

- Procedures for assessing the potential for illicit discharges caused by the interaction of sewage disposal systems (e.g., on-lot septic systems, sanitary piping) with storm drain systems.
- Mechanisms for gaining access to private property to inspect outfalls (e.g., land easements, consent agreements, search warrants) and for investigating illicit connections and discharges.
- Procedures for program documentation, evaluation and assessment. Records shall be kept of all outfall inspections, flows observed, results of field screening and testing, and other followup investigation and corrective action work performed under this program.
- Procedures for addressing information or complaints received from the public.

(1) For new permittees, the IDD&E program shall be developed during the first year of coverage under this General Permit and shall be implemented and evaluated each year thereafter.

(2) For existing permittees, the IDD&E program shall continue to be implemented and evaluated annually.

BMP #2: The permittee shall develop and maintain map(s) that show permittee and urbanized area boundaries, the location of all outfalls and, if applicable, observation points, and the locations and names of all surface waters that receive discharges from those outfalls. Outfalls and observation points shall be numbered on the map(s).

(1) For new permittees, the map(s) must be developed and submitted to DEP as an attachment to an Annual MS4 Status Report by September 30, 2022 or the fourth (4th) Annual MS4 Status Report following approval of coverage under this General Permit, whichever is later.

(2) For existing permittees, the existing map(s) shall be updated and maintained as necessary during each year of coverage under this General Permit.

BMP #3: In conjunction with the map(s) created under BMP #2 (either on the same map or on a different map), the permittee shall develop and maintain map(s) that show the entire storm sewer collection system within the permittee's jurisdiction that are owned or operated by the permittee (including roads, inlets, piping, swales, catch basins, channels, and any other components of the storm sewer collection system), including privately-owned components of the collection system where conveyances or BMPs on private property receive stormwater flows from upstream publiclyowned components.

(1) For new permittees, the map(s) must be developed and submitted to DEP as an attachment to an Annual MS4 Status Report by September 30, 2022 or the fourth (4th) Annual MS4 Status Report following approval of coverage under this General Permit, whichever is later.

(2) For existing permittees, the existing map(s) shall be updated and maintained as necessary during each year of coverage under this General Permit.

BMP #4: The permittee shall conduct dry weather screenings of its MS4 outfalls to evaluate the presence of illicit discharges. If any illicit discharges are present, the permittee shall identify the source(s) and take appropriate actions to remove or correct any illicit discharges. The permittee shall also respond to reports received from the public or other agencies of suspected or confirmed illicit discharges associated with the storm sewer system, as well as take enforcement action as necessary. The permittee shall immediately report to DEP illicit discharges that would endanger users downstream from the discharge, or would otherwise result in pollution or create a danger of pollution or would damage property, in accordance with Part A III.D.4 of this General Permit.

(1) For new permittees, all of the identified regulated small MS4 outfalls shall be screened during dry weather at least twice within the 5-year period following approval of coverage under this General Permit.

(2) For existing permittees, each of the identified regulated small MS4 outfalls shall be screened during dry weather at least once by March 15, 2023. For areas where past problems have been reported or known sources of dry weather flows occur on a continual basis, outfalls shall be screened annually during each year of permit coverage.

(3) If a discharge is observed from any outfall during dry weather screenings, the discharge shall be inspected for color, odor, floating solids, scum, sheen, and substances that result in observed deposits in the surface waters. In addition, the discharge cannot contain substances that result in deposits in the receiving water or produce an observable change in the color, odor or turbidity of the receiving water.

If the discharge exhibits any of the above characteristics, or contains any other pollutants or causes an observed change in the surface waters, the permittee shall sample the discharge(s) for field and/or laboratory analysis of one or more common IDD&E parameters in order to determine if the dry weather flow is illicit. Possible parameters include, but are not limited to: pH, Conductivity, Fecal Coliform bacteria, Heavy Metals, Chemical Oxygen Demand (COD), 5-day Biochemical Oxygen Demand (BOD5), Total Suspended Solids (TSS), Total Dissolved Solids (TDS), Oil and Grease, Total Residual Chlorine (TRC) and Ammonia-Nitrogen. Proper quality assurance and quality control procedures shall be followed when collecting, transporting or analyzing water samples. The permittee shall retain sample results with the inspection report in accordance with Part A III.B of this General Permit.

(4) Each time an outfall is screened, the permittee shall record outfall observations, regardless of the presence of dry weather flow. All outfall inspections shall be documented on the MS4 Outfall Field Screening Report form (3800-FM-BCW0521), or equivalent. The report must be signed by the inspector and be maintained by the permittee in accordance with Part A III.B of this General Permit. If an outfall flow is determined by the permittee to be illicit, the actions taken to identify and eliminate the illicit flow shall also be documented.

(5) The permittee shall summarize the results of outfall inspections and actions taken to remove or correct illicit discharges in Annual MS4 Status Reports.

(6) If the permittee determines that an outfall cannot be accessed due to safety or other reasons, the permittee shall establish an "observation point" at an appropriate location prior to the outfall where outfall field screening shall be performed. If observation points are established by the permittee, such points shall be identified on the map required under BMP #2 of this section.

(7) Permittees must ensure that outfalls are properly maintained in accordance with Part C I.B.6.b of this General Permit.

BMP #5: Enact a Stormwater Management Ordinance or SOP to implement and enforce a stormwater management program that includes prohibition of non-stormwater discharges to the regulated small MS4.

(1) Municipal permittees shall submit a copy of an ordinance that is consistent with DEP's 2022 Model Stormwater Management Ordinance (3800-PM-BCW0100j) as an attachment to an Annual MS4 Status Report by September 30, 2022 (existing permittees) or the fourth (4th) Annual MS4 Status Report following approval of coverage under this General Permit (new permittees).

(2) Permittees that lack the authority to enact ordinances (non-municipal permittees and counties) shall develop and adopt an SOP that prohibits non-stormwater discharges consistent with this General Permit, and shall submit a copy of the SOP as an attachment to an Annual MS4 Status Report by September 30, 2022 (existing permittees) or the fourth (4th) Annual MS4 Status Report following approval of coverage under this General Permit (new permittees).

(3) Notice must be provided to DEP of the approval of any waiver or variance by the permittee that allows an exception to non-stormwater discharge provisions of an ordinance or SOP. This notice shall be submitted in the next Annual MS4 Status Report following approval of the waiver or variance.

BMP #6: Provide educational outreach to public employees, business owners and employees, property owners, the general public and elected officials (i.e., target audiences) about the program to detect and eliminate illicit discharges.

(1) During each year of permit coverage, appropriate educational information concerning illicit discharges shall be distributed to the target audiences using methods outlined under MCM #1. The permittee shall establish and promote a stormwater pollution reporting mechanism (e.g., a complaint line with message recording) by the end of the first year of General Permit coverage for the public to use to notify the permittee of illicit discharges, illegal dumping or outfall pollution. The permittee shall respond to all complaints in a timely and appropriate manner. The permittee shall document all responses, including the action taken, the time required to take the action, and whether the complaint was resolved successfully.

(2) Educational outreach may include: distribution of brochures and guidance for target audiences including schools; programs to encourage and facilitate public reporting of illicit discharges; organizing volunteers to locate and visually inspect outfalls and to stencil storm drains; and implement and encourage recycling programs for common wastes such as motor oil, antifreeze and pesticides.

Considerations and Recommendations

- Illicit Discharge Detection & Elimination is primarily a set of non-structural BMPs that can be implemented to support program goals associated with pollution prevention and/or pollution reduction.
- The regulations indicate this requirement should have a primary focus on preventing illicit discharges **PRIOR TO** system entry. In turn, there are three prioritization level processes a plan should be based on: 1) Prior to system entry, 2) encountered in the system, and 3) outfall screening (back-stop action).
- Consider three levels of enforcement based on number of offenses for encountered or potential illicit discharges: 1) education and outreach, 2) written warning, and 3) ordinance-driven enforcement. Providing education to first offenders is a form of active outreach, and personalizes the message that is more acceptable and understandable by a member of the public. Additionally, providing education as a first level enforcement provides compliance towards both MCM 1 and MCM 3 with one effort.

- Screening in High Priority Areas should involve a combination of outfall screening and MS3 screening that inherently attempts to address all three levels of IDD&E processes.
- Do not organize elaborate and multiple sets of priority area classifications. An area IS (High) or IS NOT (Low) a priority area. Determination of priority area classifications should be a documented exercise.

Measurable Goal Example

Goals of a program are required to be able to be measured for effectiveness per the permit and regulations. MCM #3 efforts are effective for supporting both over-arching program goals and individual MCM 3 plan goals. As an example, an individual plan goal is established relating to implementing efforts that would help first level offenders from becoming second level offenders (repeat illicit discharge and receives a written warning). Success of the goal will be measured through results of dry weather field and outfall screening during the permit year. The permittee repeats individualized outreach efforts with each first level offender. Immediate field locations and outfalls are screened. Field reports and results of outfall screening reveal no illicit discharges present. No reports regarding an illicit discharge, dumping, etc. associated with first level offenders are received. In turn, the individual IDD&E Plan goal has been achieved and the effort has been effective.

CONSTRUCTION SITE RUN-OFF CONTROL (MCM 4)

Introduction

Construction sites (especially with Disturbed Soil Areas (DSAs)) are well-known sediment run-off generation sites without properly installed and maintained controls. Additionally, construction sites have an increased potential for generating non-stormwater discharges or polluting stormwater run-off associated with normal construction activities (paving, saw-cutting, waste, stored materials, and so on).

Baseline Regulatory Requirements

1. Have an ordinance or other regulatory mechanism requiring the implementation of proper erosion and sediment controls, and controls for other wastes, on applicable construction sites;
2. Have procedures for site plan review of construction plans that consider potential water quality impacts;
3. Have procedures for site inspection and enforcement of control measures;
4. Have sanctions to ensure compliance (established in the ordinance or other regulatory mechanism);
5. Establish procedures for the receipt and consideration of information submitted by the public; and
6. Determine the appropriate best management practices (BMPs) and measurable goals for this minimum control measure.

PADEP General MS4 Permit (PAG-13) Requirements

Permittees with coverage under the PAG-13 General Permit must rely on DEP's program for issuing NPDES permits for stormwater discharges associated with construction activities to satisfy MCM #4. In addition to relying on the state NPDES permit program for stormwater discharges associated with construction activities, the permittee shall implement the BMPs identified below.

BMP #1: The permittee may not issue a building or other permit or final approval to those proposing or conducting earth disturbance activities requiring an NPDES permit unless the party proposing the earth disturbance has valid NPDES Permit coverage (i.e., not expired) under 25 Pa. Code Chapter 102.

BMP #2: A municipality or county which issues building or other permits shall notify DEP or the applicable county conservation district (CCD) within 5 days of the receipt of an application for a permit involving an earth disturbance activity consisting of one acre or more, in accordance with 25 Pa. Code § 102.42.

BMP #3: Enact, implement and enforce an ordinance or SOP to require the implementation and maintenance of E&S control BMPs, including sanctions for non-compliance, as applicable.

(1) Municipal permittees shall enact, implement, and enforce an ordinance to require the implementation of E&S control BMPs, including sanctions for non-compliance. All municipal permittees shall submit a copy of an ordinance that is consistent with DEP's 2022 Model Stormwater Management Ordinance (3800-PM-BCW0100j) as an attachment to an Annual MS4 Status Report by September 30, 2022 (existing permittees) or the fourth (4th) Annual MS4 Status Report following approval of coverage under this General Permit (new permittees).

(2) Permittees that lack the authority to enact ordinances shall develop, implement and enforce an SOP to require the implementation and maintenance of E&S control BMPs by September 30, 2022 (existing permittees) or the first Annual MS4 Status Report following approval of coverage under this General Permit (new permittees).

Considerations and Recommendations

- Construction Site Run-off Control is primarily a set of non-structural BMPs that can be implemented to support program goals associated with pollution prevention and/or pollution reduction.
- Despite a reliance on the Statewide QLP, it is recommended that a permittee develop a Construction Site Run-off Control Plan that addresses the baseline regulatory requirements at a minimum.
- There is an inherent tie between MCM 3 and MCM 4. Construction sites have an increased potential for generating illicit discharges that may enter the regulated system.
- Ensure a Memorandum of Understanding (MOU) or similar with the CCD reflects processes and responsibilities associated with the baseline regulatory requirements.
- At the end of the day, it is the municipalities responsibility to ensure the baseline regulatory requirements are facilitated and achieved.

Measurable Goal Example

Goals of a program are required to be able to be measured for effectiveness per the permit and regulations. MCM #4 efforts are effective for supporting over-arching program goals, goals of other MCMs, and individual MCM 4 plan goals. As an example, a set of MCM #3 (IDD&E) goals associated with efforts to curb illicit discharges into the system (pollution prevention objective) includes construction sites within the list of identified potential dischargers. This goal is further communicated to construction site operators, and restricting illicit discharges from construction sites is a requirement of the construction site NPDES permit and the MS4 Permit. It is communicated to the site operator that they should be conducting periodic inspections, and include any entry points to the regulated system as part of inspection procedures. Additionally, and as part of the MCM #3 goal facilitation, inlets and other entry points adjacent to active construction sites are inspected periodically for evidence of illicit

discharges (sediment, debris, etc.). Inspection reports for both the permittee and construction site operator reveal no evidence of illicit discharges. In turn, the goal has been achieved and the program is effective.

POST CONSTRUCTION STORMWATER MANAGEMENT (MCM 5)

Introduction

PCSM facilities may provide both water quality and water quantity control functions. Appropriately maintained PCSM facilities are necessary to preserve the water quality treatment function that will be incorporated into an MS3 (or create a new MS3). Additionally, PCSM facilities may provide an increased water quality control function that may assist a permittee with a SWMP goal tied to an area.

Baseline Regulatory Requirements

1. Develop and implement strategies which include a combination of structural and/or nonstructural best management practices (BMPs);
2. Have an ordinance or other regulatory mechanism requiring the implementation of post-construction runoff controls to the extent allowable under State, Tribal or local law;
3. Ensure adequate long-term operation and maintenance of controls;
4. Determine the appropriate best management practices and measurable goals for this minimum control measure.

PADEP General MS4 Permit (PAG-13) Requirements

Permittees with coverage under the PAG-13 General Permit must rely on DEP's program for issuing NPDES permits for stormwater discharges associated with construction activities to satisfy MCM #5. In addition to relying on the state NPDES permit program for stormwater discharges associated with construction activities, the permittee shall implement the BMPs identified below.

BMP #1: Enact, implement and enforce an ordinance or SOP to require post-construction stormwater management from new development and redevelopment projects, including sanctions for non-compliance.

(1) Municipal permittees shall enact, implement, and enforce an ordinance to require the implementation of PCSM BMPs, including sanctions for non-compliance. All municipal permittees shall submit a copy of an ordinance that is consistent with DEP's 2022 Model Stormwater Management Ordinance (3800-PM-BCW0100j) as an attachment to an Annual MS4 Status Report by September 30, 2022 (existing permittees) or the fourth (4th) Annual MS4 Status Report following approval of coverage under this General Permit (new permittees).

(2) Permittees that lack the authority to enact ordinances shall develop, implement and enforce an SOP to require the implementation and maintenance of PCSM BMPs and submit the SOP to DEP by September 30, 2022 (existing permittees) or the fourth (4th) Annual MS4 Status Report following approval of coverage under this General Permit (new permittees).

BMP #2: Develop and implement measures to encourage and expand the use of Low Impact Development (LID) in new development and redevelopment. Measures should also be included to encourage retrofitting LID into existing development. Guidance on implementing LID practices may be

found on DEP's MS4 website, www.dep.pa.gov/MS4. Enact ordinances consistent with LID practices and repeal sections of ordinances that conflict with LID practices. Submission of an ordinance that is consistent with DEP's 2022 Model Stormwater Management Ordinance (3800-PM-BCW0100j) will satisfy this BMP.

BMP #3: Ensure adequate O&M of all post-construction stormwater management BMPs that have been installed at development or redevelopment projects that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale.

An inventory of PCSM BMPs shall be developed by new permittees by the end of the first year of General Permit coverage and shall be continually updated during the term of coverage under the General Permit as development projects are reviewed, approved, and constructed. Existing permittees shall update and maintain its current inventory during the term of coverage under the General Permit. The permittee must track the following information in its PCSM BMP inventory:

- All PCSM BMPs that were installed to meet requirements in NPDES Permits for Stormwater Discharges Associated with Construction Activities approved since March 10, 2003.
- The exact location of the PCSM BMP (e.g., latitude and longitude, with street address).
- Information (e.g., name, address, phone number(s)) for BMP owners and entities responsible for BMP O&M, if different from BMP owners.
- The type of BMP and the year it was installed.
- Maintenance required for the BMP type according to the Pennsylvania Stormwater BMP Manual or other manuals and resources.
- The actual inspection/maintenance activities conducted for each BMP.
- An assessment by the permittee if proper O&M has occurred during the year and if not, what actions the permittee has taken, or shall take, to address compliance with O&M requirements.

Considerations and Recommendations

- PCSM is primarily a set of non-structural BMPs that can be implemented to support program goals associated with pollution prevention and/or pollution reduction.
- Despite a reliance on the Statewide QLP, it is recommended that a permittee develop a PCSM Plan that addresses the baseline regulatory requirements at a minimum.
- Consider an O&M verification process for program facilitation. PCSM facility owners would submit a "simple" one-page form on annual basis outlining maintenance performed, functionality reference, etc. The permittee would only periodically inspect the facilities to ensure maintenance is performed.
- Capture legacy BMPs and facilities into the PCSM Inventory.

Measureable Goal Example

Goals of a program are required to be able to be measured for effectiveness per the permit and regulations. MCM #5 efforts are effective for supporting over-arching program goals, goals of other MCMs, and individual MCM 5 plan goals. As an example, a permittee selects an MCM 5 goal that at least 80% of O&M verification forms are returned from all PCSM facility owners for a given year. The permittee also outlines a threshold of a 50% return rate as an indication that the program is ineffective. The permittee elects to generate and distribute an easy-to-read and how-to guide for operations and maintenance of different types of PCSM facilities to all facility owners within the PCSM inventory under MCM #1. At the end of the corresponding permit year, the permittee finds that only 70% of O&M verification forms are returned. In turn, the permittee finds that the program is only partially effective;

and, as a part of the iterative process, elects to generate and hand-deliver the guide to PCSM facility owners that did not return O&M verification forms with the intent this approach would improve the O&M verification form return rate over 80% for the next permit year.

GOOD HOUSEKEEPING (MCM 6)

Introduction

The O&M Plan required for MCM 6 is generally the most comprehensive plan of the stand-alone MCM plans. Municipal operations are generally the largest endeavors undertaken by a municipality. In turn, operations have the greatest potential to pollute run-off. However, appropriately managed operations have the greatest potential to protect water quality at the same time. Additionally, selecting appropriate BMPs under MCM 6 can provide the most impact associated with pollution reduction where issues are encountered.

Baseline Regulatory Requirements

1. Develop and implement an operation and maintenance program with the ultimate goal of preventing or reducing pollutant runoff from municipal operations into the storm sewer system;
2. Include employee training on how to incorporate pollution prevention/good housekeeping techniques into municipal operations such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and stormwater system maintenance. To minimize duplication of effort and conserve resources, the MS4 operator can use training materials that are available from EPA, their State or Tribe, or relevant organizations;
3. Determine the appropriate best management practices (BMPs) and measurable goals for this minimum control measure.

PADEP General MS4 Permit (PAG-13) Requirements

The permittee must develop and implement an O&M program that includes a training component and has the ultimate goal of preventing and reducing pollutant runoff from operations, facilities and activities under the control of the permittee (collectively, "operations"). The program must include employee training to prevent and 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.

BMP #1: Identify and document all operations that are owned or operated by the permittee and have the potential for generating pollution in stormwater runoff to the regulated small MS4. This includes activities conducted by contractors for the permittee. Activities may include the following: street sweeping; snow removal/deicing; inlet/outfall cleaning; lawn/grounds care; general storm sewer system inspections and maintenance/repairs; park and open space maintenance; municipal building maintenance; new construction and land disturbances; right-of-way maintenance; vehicle operation, fueling, washing and maintenance; and material transfer operations, including leaf/yard debris pickup and disposal procedures. Facilities can include streets; roads; highways; parking lots and other large paved surfaces; maintenance and storage yards; waste transfer stations; parks; fleet or maintenance shops; wastewater treatment plants; stormwater conveyances (open and closed pipe); riparian buffers; and stormwater storage or treatment units (e.g., basins, infiltration/filtering structures, constructed wetlands, etc.).

(1) New permittees shall create an inventory of all operations and land uses that may contribute to pollution in stormwater runoff within areas of operations that discharge to the regulated small MS4 by the end of the first year of General Permit coverage, and review and update the inventory annually thereafter.

(2) All permittees must review and update the inventory each year of General Permit coverage, as necessary.

BMP #2: Develop, implement and maintain a written O&M program for all operations that could contribute to the discharge of pollutants from the regulated small MS4, as identified under BMP #1. This program shall address stormwater collection or conveyance systems within the regulated MS4. The written O&M program shall stress pollution prevention and good housekeeping measures, contain site-specific information, and include the following:

- Management practices, policies, and procedures shall be developed and implemented to reduce or prevent the discharge of pollutants to the regulated small MS4s. The permittee shall consider eliminating maintenance area discharges from floor drains and other drains if they have the potential to discharge to storm sewers.
- Maintenance activities, maintenance schedules, and inspection procedures to reduce the potential for pollutants to reach the regulated small MS4s.
- Controls for reducing or eliminating the discharge of pollutants from streets, roads, highways, municipal parking lots, maintenance and storage yards, waste transfer stations, fleet or maintenance shops with outdoor storage areas, salt / sand (anti-skid) storage locations and snow disposal areas. Controls for solid chemical products stored and utilized for the principal purpose of deicing roadways for public safety must be consistent with the BMPs for existing salt storage and distribution sites contained in the PAG-03 NPDES General Permit for Stormwater Discharges Associated with Industrial Activity.
- Procedures for the proper disposal of waste, including dredge spoil, accumulated sediments, trash, household hazardous waste, used motor oil, street sweepings, and other debris.

(1) New permittees shall develop and implement a written O&M program by the end of the first year of General Permit coverage and review and update the program each year thereafter.

(2) All permittees must review and update the written O&M program each year of General Permit coverage, as necessary.

BMP #3: Develop and implement an employee training program that addresses appropriate topics to further the goal of preventing or reducing the discharge of pollutants from operations to the regulated small MS4. The program may be developed and implemented using guidance and training materials that are available from federal, state or local agencies, or other organizations. All relevant employees and contractors shall receive training (i.e., public works staff, building, zoning, and code enforcement staff, engineering staff, police and fire responders, etc.). Training topics shall include operation, inspection, maintenance and repair activities associated with any of the operations identified under BMP #1. Training must cover all relevant parts of the permittee's overall stormwater management program that could affect operations, such as illicit discharge detection and elimination, construction sites, and ordinance requirements.

(1) New permittees shall develop and implement a training program that identifies the training topics that will be covered and what training methods and materials will be used by the end of the first year of General Permit coverage.

(2) All permittees must review and update the training program each year of General Permit coverage, as necessary.

(3) Employee training shall occur at least annually and shall be documented in writing and reported in Annual MS4 Status Reports. Documentation shall include the date(s) of the training, the names of attendees, the topics covered, and the training presenter(s).

Considerations and Recommendations

- Good Housekeeping is primarily a set of non-structural BMPs that can be implemented to support program goals associated with pollution prevention and/or pollution reduction.
- An O&M Plan should have a Waste Management Plan and Spill Response & Control Plan set of components.
- SOPs (mowing, fueling a vehicle, patching pavement around inlets, installing a concrete sidewalk, etc.) are dictated by the industry-standard set of processes that are related to a given activity. Water quality protection BMPs (do not blow glass clippings into gutters, do not fuel equipment over inlets, protect inlets from saw-cut debris during patching activities, maintain a concrete washout bin during concrete pouring, etc.) are assigned to SOPs with the primary intent of pollution prevention.
- Normal municipal operations have an increased and direct ability to support over-arching program goals associated with pollution reduction objectives.
- The municipal facility and activity inventory forms the central framework of a compliant MCM 6 program. The inventory provides the platform for the operational schedule. Additionally, the schedule (when facilitated appropriately (updated regularly, etc.)) serves as THE record of activities conducted over a permit year. The schedule should not only reflect planned operational activities (mowing, patching pavement around inlets, etc.), but also reflect inspections, training, and other required components.
- Do not “over-think” deicing material applications (e.g. road salt). However, a permittee should attempt (and document the process) for finding the “sweet spot” of application rates. The sweet spot is the balance between not enough and too much material applied.

Measureable Goal Example

Goals of a program are required to be able to be measured for effectiveness per the permit and regulations. MCM #6 efforts are effective for supporting over-arching program goals, goals of other MCMs, and individual MCM 6 plan goals. As an example, elevated sediment and debris (trash, litter, etc.) is encountered in a delineated MS3 originally through discharge monitoring. An over-arching program goal has been established to reduce the observed sediment and debris discharged over a 3-year period. The over-arching goal will be measured through monitoring data (sampling, screening, etc.) at the outfall and field investigations of the MS3, with a numeric consideration of reduced sediment and debris found in discharges (with interim milestone reductions identified each year). The permittee implements a number of control measures across the MCMs to support and facilitate the goal. Under MCM #6, the permittee selects catch basin cleaning of inlets within the MS3 twice for the upcoming permit year. The permittee conducts the two basin cleaning events. At the end of year 1, the permittee finds (through monitoring data and field investigations) that the first interim milestone of reductions at the outfall has been reached. This finding provides an indication that the catch basin cleaning efforts under MCM 6 (and other control measures selected) is currently effective and progress towards goal achievement is evident.

