

Moore Township MS4 Stormwater Program Manual



Prepared by:



www.KeystoneConsultingEngineers.com

September 2014

Table of Contents

Program Components

Overview	1
MCM 1: Public Education and Outreach	1
BMP 1-1: Develop, Implement, and Maintain a Written PEOB	5
BMP 1-2: Develop and Maintain Lists of Target Audience Groups	6
BMP 1-3: Annually Publish at Least One Educational or Informational Material	6
BMP 1-4: Distribute Stormwater Educational Materials to Target Audience Groups	7
MCM 2: Public Involvement and Participation	9
BMP 2-1: Develop, Implement, and Maintain a Written PIPP	10
BMP 2-2: Advertise any Proposed Changes to the Municipality's Stormwater Management Ordinance Prior to Adoption	10
BMP 2-3: Regularly Solicit Public Involvement and Participation from the Target Audience	11
MCM 3: Illicit Discharge Detection and Elimination	14
BMP 3-1: Develop, Implement, and Maintain a Written Program for the Detection, Elimination, and Prevention of Illicit Discharges	15
BMP 3-2: Develop and Maintain a Map of the Regulated MS4 Watershed Area	18
BMP 3-3: Develop and Maintain a Map of the Storm Sewer Collection System within the Regulated MS4 Watershed Area	19
BMP 3-4: Conduct Outfall Field Screenings	20
BMP 3-5: Enact a Stormwater Management Ordinance (SWMO) that includes a Prohibition of Non-Stormwater Discharges	21
BMP 3-6: Provide Educational Outreach related to the IDD&E Program	21
MCM 4: Construction Site Stormwater Runoff Control	23
MCM 5: Post-Construction Stormwater Management for New Developments and Redevelopments	24
BMP 5-1: Develop and Implement a Written Procedure that Describes how the Municipality will Address the Required Components of this MCM	24
BMP 5-2: Require the Implementation of a Combination of Structural and Non-Structural BMPs that Minimize Water Quality Impacts and Maintain Pre-Development Runoff Conditions	25
BMP 5-3: Ensure that BMPs are Installed that will Prevent or Minimize Water Quality Impacts	25
BMP 5-4: Enact, Implement, and Enforce a Stormwater Management Ordinance (SWMO) to Address Post-Construction Stormwater Runoff from New Development and Redevelopment Projects that Includes Sanctions and	25

Penalties Associated with Non-Compliance, to the Extent Allowable Under State and Local Law	
BMP 5-5: Develop and Implement Measures to Encourage and Expand the Use of Low Impact Development (LID) Practices for New Development and Redevelopment Projects	26
BMP 5-6: Ensure Adequate Operation and Maintenance of all Post-Construction Stormwater Management (PCSM) Best Management Practices (BMPs) Installed at New Development and Redevelopment Projects	26
MCM 6: Pollution Prevention/Good Housekeeping for Municipal Operations Redevelopments	32
BMP 6-1: Identify and Document all Facilities and Activities Owned or Operated by the Township that have the Potential to Generate or Impact Stormwater Runoff	32
BMP 6-2: Develop, Implement, and Maintain a Written Operation and Maintenance (O&M) Program for all Facilities and Activities Owned and/or Operated by the Township that have the Potential to Generate or Impact Stormwater Runoff	33
BMP 6-3: Develop and Implement an Employee Training Program Designed to Further the Goal of Reducing or Preventing the Discharge of Pollutants from Municipal Operations	39

Appendices

Public Education and Participation Plan Worksheet	A1
Suspected Illicit Discharge Report Form	A3
Outfall Inventory and Field Screening Sheet	A3
Inventory of PCSM BMPs	A5
Municipal Employee Training Annual Report Form	A6
MS4 Watershed Map	A7

Small MS4 Stormwater Program Overview

Background

Polluted stormwater runoff is often transported to Municipal Separate Storm Sewer Systems (MS4s) and ultimately discharged into local streams and rivers without treatment. EPA's Stormwater Phase II Rule established an MS4 stormwater management program with the intention of improving the Nation's waterways by reducing the quantity of pollutants that stormwater picks up and carries into storm sewer systems during storm events. Common pollutants include oil and grease from roadways, pesticides from lawns, sediment from construction sites, and carelessly discarded trash, such as cigarette butts, waste papers, and plastic bottles. When deposited into nearby waterways through MS4 discharges, these pollutants can impair the waterways, thereby discouraging recreational use of the resource, contaminating drinking water supplies, and interfering with the habitat for fish, other aquatic organisms, and wildlife.

In 1990, EPA promulgated rules establishing Phase I of the National Pollutant Discharge Elimination System (NPDES) Stormwater Program. The Phase I Program for MS4s requires operators of medium and large MS4s, that is, those that generally serve populations of 100,000 or greater, to implement a stormwater management program as a means to control polluted discharges from these MS4s. The Phase II Rule extends coverage of the Phase I Program to small MS4s.

Small MS4 Defined

A small MS4 is defined as any MS4 not already covered by the Phase I Program as a medium or large MS4. The Phase II Rule automatically covers all small MS4s located in areas defined by the Bureau of the Census as Urbanized Areas (UAs), unless waived by the NPDES permitting authority. The portions of the Township that qualify as UAs are identified on the MS4 Watershed Map contained in Appendix A7 of this Manual.

Small MS4 Program General Requirements

The Township, as an operator of a regulated small MS4 located partially within Urbanized Areas, shall continue to develop and implement its Small MS4 Stormwater Program (the Program) with the following goals in mind:

- Reduce the discharge of pollutants to the Maximum Extent Practicable (MEP);
- Protect water quality; and
- Satisfy appropriate water quality requirements of the Clean Water Act.

The Program comprises six elements, termed Minimum Control Measures (MCMs), that, when implemented in concert, are expected to significantly reduce the amount of pollutants that are discharged to receiving waterbodies.

The six MCMs are defined as follows:

1. Public Education and Outreach – Distribute educational materials and undertake outreach initiatives to inform citizens about the impacts polluted stormwater runoff discharges can have on water quality;
2. Public Participation/Involvement – Provide opportunities for the public to participate in the continued implementation and development of the Program through effective advertising of public hearings, establishment of a stormwater management panel, and the organization or sponsorship of programs that actively involve the public in stormwater runoff pollution prevention efforts;
3. Illicit Discharge Detection and Elimination – Develop and implement a plan to detect and eliminate illicit discharges to the storm sewer system, establish and publicize methods to facilitate the public reporting of suspected illicit discharges, further develop the Township MS4 Watershed Map to identify regulated MS4 components, and inform the community of the hazards associated with illegal discharges and improper disposal of waste;
4. Construction Site Runoff Control – Develop, implement, and enforce an erosion and sediment pollution control program for construction activities that disturb one or more acres of land;
5. Post-Construction Runoff Control – Develop, implement, and enforce a program to address post-construction stormwater runoff from new development and redevelopment areas; and
6. Pollution Prevention and Good Housekeeping – Develop and implement a program to prevent or reduce pollutant runoff from Township operations and facilities including a training component to educate Township employees on pollution prevention measures and techniques.

Small MS4 Program Implementation Options

The Phase II Rule offers the Township a number of options with respect to the continued development and implementation of its Program. These options include sharing responsibilities for Program development with nearby regulated small MS4s, making use of existing local and State programs, and participating in the implementation of an existing Phase I MS4 stormwater program as a co-permittee. In addition to providing for greater flexibility, these options are intended to encourage the Township and other surrounding small MS4 operators to take a regional approach to stormwater management.

Small MS4 Program Evaluation

The Township shall evaluate the effectiveness of its Program on an annual basis to determine whether or not the Program is achieving the goal of reducing the discharge of pollutants from its MS4 to the maximum extent practicable and whether the Program is satisfying the water quality requirements of the Clean Water Act. The Township has developed the measurable goals described in detail below for each Best Management Practice (BMP) in order to: (a) reflect the needs and characteristics of the Township and the area served by its small MS4; (b) consider an integrated approach that fully addresses the requirements and intent of the minimum control measure; and (c) provide quantitative data relative to the success of each BMP. Using these measurable goals, the Township will assess Program effectiveness and, if deemed necessary, will

develop and implement new BMPs or modifications to existing BMPs in order to further the effectiveness of the Program.

MCM 1: Public Education and Outreach

Importance of the Public Education and Outreach Program (PEOP)

An informed and knowledgeable community is critical to the success of a Small MS4 Stormwater Program (the Program). Through effective education and outreach initiatives, the Township will be able to impart to the public: (1) a greater appreciation of the important roles that streams and waterways play in the community; (2) a sense of individual responsibility for the restoration and preservation of the Township's watersheds; and (3) how minor efforts by individuals can have a major positive impact on stormwater quality. The result will be a more engaged and supportive community willing to take actions and adopt behaviors that will reduce stormwater pollution and improve stream water quality.

Program Development Considerations

An effective Public Education and Outreach Program employs appropriate mechanisms and programs, guided by a detailed outreach strategy, to engage the public's interest in preventing stormwater pollution. The Township should consider the following general goals as it continues to implement and further develop its PEOP:

- Use Educational Materials and Strategies – The Township should make use of stormwater educational, informational, and strategic guidance resources available through PennDEP, EPA, environmental groups, public interests, and trade organizations instead of developing its own materials.
- Reach Diverse Audiences – The Township should employ a variety of appropriate local strategies to address the multitude of viewpoints and concerns of its community members, including minorities, children, and disadvantaged individuals. Additionally, the Township should utilize materials and undertake outreach programs directed toward specific groups such as commercial, industrial, and institutional entities that are likely to have a significant impact on stormwater.
- Form Partnerships – The Township should seek opportunities to partner with other governmental entities to fulfill its requirements under this MCM as it is generally more cost-effective to use an existing program or to develop a new regional or state-wide education program than to independently develop its own program. The Township should also seek assistance from non-governmental organizations (e.g. environmental, civic, and industrial organizations), since many have already developed educational materials and perform outreach activities.

Examples of Educational Outreach Strategies

The Township should employ a variety of the following strategies to ensure the maximum reach and effectiveness of its PEOP:

- Brochures and fact sheets for the general public and specific audiences;
- Recreational guides directed toward specific segments of the target audience such as golfers, hikers, boaters, climbers, fishermen, and campers;

- Alternative information sources, such as web sites, bumper stickers, refrigerator magnets, posters for bus stops, and restaurant placemats;
- Event participation with educational displays at home shows, festivals, and similar community events;
- Educational programs for school-age children;
- Application of storm drain stencils with messages such as “Do Not Dump - Drains Directly to Stream”;
- A stormwater hotline to accept reports from the public relative to suspected illicit discharges or illegal dumping; and
- Roadside watershed tributary signage to increase public awareness of local water resources.

BMP 1-1: Develop, Implement, and Maintain a Written PEOP

- A. The Township should consider the following specific action items as it continues to implement and further develop its written PEOP:
- Distribute educational materials to the target audience or conduct equivalent outreach activities related to stormwater pollution prevention;
 - Educate the public about the impacts of stormwater discharges on surface water quality as well as the hazards of illicit discharges, how to identify an illicit discharge, and what to do if one identifies a suspected illicit discharge;
 - Inform the public about the steps they can take to reduce stormwater pollution;
 - Inform the public about opportunities related to community stream cleanup and restoration activities; and
 - Incorporate a variety of strategies to reach a broad cross-section of the target audience as well as specific strategies that focus on high-impact segments of the target audience such as commercial, industrial, and institutional entities that are likely to have a significant impact on stormwater.
- B. Measurable Goals
- Complete initial development and implementation of the PEOP (completed during permit year ending September 30, 2014).
 - Establish an MS4 Committee by resolution of the Board of Supervisors comprising at least one Board of Supervisor member, at least one member of the Environmental Advisory Committee (EAC), and volunteers from the target audience that will be responsible to assist with the continued development and implementation of the Program and to oversee matters related to MS4 permit compliance by facilitating coordination and communication between the Township and its staff, the Township Engineer, the EAC, the Bushkill Stream Conservancy, and other participants (completed during permit year ending September 30, 2014).

- Review and update the PEOP on an annual basis and implement improvements as appropriate.

BMP 1-2: Develop and Maintain Lists of Target Audience Groups

- A. The Township identified the following five general categories of groups that comprise the target audience:
1. Residents;
 2. Municipal employees;
 3. Businesses;
 4. Schools; and
 5. Developers/Contractors.

The Township, in cooperation with the EAC, expanded the above list to include individual target audience members for each of the groups and has tabulated same in the Public Education and Participation Plan worksheets contained in Appendix A1 of this Manual.

- B. Measurable Goals
1. Develop a list of target audience groups during the first year of permit coverage (completed during permit year ending September 30, 2014).
 2. Review and update the list of target audience members on an annual basis using the Public Education and Participation Plan worksheets contained in Appendix A1 of this Manual.

BMP 1-3: Annually Publish at Least One Educational or Informational Material

- A. The Township will publish in its quarterly newsletter and on its forthcoming MS4 web site at least one educational or informational article related to stormwater pollution prevention or to one or more of the six MCMs defined herein.
- B. Implementation
1. The Township, in cooperation with the EAC should develop and maintain a portfolio of educational and informational articles suitable for publishing in the Township newsletter and on its MS4 website.
 2. The Township in cooperation with the EAC should select and publish articles to cover a variety of topics from year to year and to relate to a broad section of the target audience.
 3. The Township may refer to the following Environmental Protection Agency (EPA) online resource for downloadable newsletter articles and other publications.

<http://water.epa.gov/polwaste/npdes/stormwater/Stormwater-Outreach-Materials-and-Reference-Documents.cfm>

4. Upon request by the Township, the Township Engineer will furnish qualifying news articles and provide consulting services to assist with the administration of the PEOP.

C. Measurable Goals

1. Publish one qualifying article in each issue of the Township newsletter.
2. Publish one qualifying article per year on the forthcoming Township MS4 web page.
3. Review and update the list of publications annually.

BMP 1-4: Distribute Stormwater Educational Materials to Target Audience Groups

A. Implementation

1. The Township should develop and maintain an inventory of available resources and communication channels to disseminate information to the target audience. The following list presents general categories of such resources and communication channels.
 - a. Municipal communication channels including newsletters, Township MS4 web site, public offices, community centers and facilities, public meetings, and community information kiosks;
 - b. Commercial communication channels including local newspapers, websites, radio and television stations, and billboards;
 - c. Community organizations that communicate with or are comprised of one or more of the five subsets of the target audience defined in BMP 1-2 above;
 - d. Local volunteer organizations such as the Environmental Advisory Committee (EAC), Bushkill Stream Conservancy, and others concerned with watershed preservation; and
 - e. Community events including public meetings, festivals, recycling initiatives, etc.
2. The Township should identify best practices for effective dissemination of information to each of the five subsets of the target audience. Suggested PEOP informational formats include:
 - a. Refrigerator magnets and calendars for residents;
 - b. Kiosks at public parks and along streamside trails;
 - c. Illustrated posters for businesses;
 - d. Paper-based educational activity packets for schools;
 - e. Township website for residents and developers/contractors; and
 - f. Required training initiatives for municipal employees.

3. The Township should identify additional common behaviors and activities linked to stormwater pollution. The following list contains examples of behaviors and activities the Township may consider targeting with its initial PEOP initiatives.
 - a. Littering;
 - b. Disposal of trash and recyclables;
 - c. Disposal of leftover paint and household chemicals;
 - d. Disposal of pet waste;
 - e. Use of lawn chemicals;
 - f. Washing cars; and
 - g. Changing motor oil and other automobile maintenance activities.
4. The Township may refer to the following Environmental Protection Agency (EPA) online resource for downloadable materials and publications and additional guidance.
<http://water.epa.gov/polwaste/npdes/stormwater/Stormwater-Outreach-Materials-and-Reference-Documents.cfm>
5. Upon request by the Township, the Township Engineer could furnish educational materials for publication and/or distribution to the target audience groups and provide guidance resources and consulting services to assist with the administration of the PEOP.

B. Measurable Goals

1. Disseminate qualifying materials using at least two different distribution methods annually (in addition to the municipal newsletter and MS4 web page).
2. Identify one additional communication channel or distribution method annually that can be implemented during the upcoming year.
3. Identify one additional best practice for dissemination of information to individual target audience groups annually that can be implemented during the upcoming year.
4. Identify one additional activity or behavior linked to stormwater pollution annually that can be targeted during the upcoming year.
5. Update annually the above lists of communication channels, best practices for dissemination of information, and activities linked to stormwater pollution.

MCM 2: Public Involvement and Participation

Importance of the Public Involvement and Participation Program (PIPP)

The Township will not realize its full potential to reduce stormwater pollution without the participation, dedication, and combined efforts of its residents, preservation groups, businesses, and other community members and groups all working together. The goal of public involvement is to build on community capital – the wealth of interested citizens and groups – to help raise awareness of the importance of preventing stormwater pollution, to undertake group activities that highlight storm drain pollution, and contribute volunteer community actions to restore and protect local water resources. For maximum effectiveness, public involvement should be built into the fundamental process of community stormwater management beginning with the development of its Small MS4 Stormwater Program (the Program). To maintain ongoing interest and support of the Program, the PIPP should provide regular opportunities for direct action, educational, and volunteer programs such as riparian planting days, volunteer monitoring programs, storm drain marking, and stream cleanup programs.

An active and involved community is crucial to the success of the Program because it will facilitate and encourage:

- Broader public support since those who participate in the development and decision making process will tend to feel a sense of responsibility for the Program and will be more likely to take an active role in its implementation;
- Shorter implementation schedules due to fewer obstacles in the form of public and legal challenges and increased resources in the form of resident volunteerism;
- A broader base of experience and knowledge; and
- A conduit to other programs as residents involved in the Small MS4 Stormwater Program development process provide important cross-connections and relationships with other community and government programs.

Program Development Considerations

The best way to handle common notification and recruitment challenges is to understand the target audience and to think creatively about how to gain its attention and interest. Traditional methods of soliciting public input are not always successful in generating interest, and subsequent involvement, in all sectors of the community. For example, if the Township were to rely solely on advertising in local newspapers to announce public meetings and other opportunities for public involvement, a potentially large segment of the target audience that does not read the local press may not be reached. Therefore, alternative advertising methods should be used whenever possible.

In addition, advertising and soliciting help should be targeted at specific population sectors, including ethnic, minority, and low-income communities; academia and educational institutions; neighborhood and community groups; outdoor recreation groups; and business and industry. The goal is to involve a diverse cross-section of people who can offer a multitude of concerns, ideas, and connections during the development and implementation of the Program.

BMP 2-1: Develop, Implement, and Maintain a Written PIPP

- A. The Township should consider the following general action items as it continues to implement and further develop its written PIPP:
 - 1. Provide opportunities of the public to participate in the continued implementation and development of the MS4 Program and
 - 2. Routinely communicate with and solicit participation from the Environmental Advisory Committee (EAC), the Bushkill Stream Conservancy, and other local environmental organizations relative to further the goals of the Program.
- B. Measurable Goals
 - 1. Complete initial development and implementation of the PIPP (completed during permit year ending September 30, 2014).
 - 2. Review and update the PIPP on an annual basis and implement improvements as appropriate.
 - 3. Publish MS4 Annual Progress Report on the Township MS4 website and make the report available to the public at the Township administrative office and by U.S. Mail upon request.

BMP 2-2: Advertise any Proposed Changes to the Municipality's Stormwater Management Ordinance Prior to Adoption

- A. Implementation
 - 1. The Township shall advertise any proposed amendments to its Stormwater Management Ordinance (SWMO) in accordance with Pennsylvania Municipalities Planning Code minimum requirements.
 - 2. The Township should consider employing alternate advertising channels in addition to the local newspaper in order to reach a larger segment of the target audience. The following list contains examples of suggested alternate communication channels.
 - a. Radio or television spots;
 - b. Township website;
 - c. Township newsletter;
 - d. Postings at bus stops and park-and-ride lots;
 - e. Announcements at civic organization meetings;
 - f. Mass mailings;
 - g. Automated telephone notifications; and
 - h. Multilingual announcements.

More information on communication channels and best practices for dissemination of information can be found in BMP 1-4 above.

3. The Township should provide opportunities for and actively solicit public involvement in the process of developing amendments to its SWMO.

B. Measurable Goals

1. Properly advertise any proposed amendments to the SWMO using at least one alternate advertising channel in addition to the local newspaper.
2. Observe and document any apparent impact of the alternate advertisement channel based on the level of attendance at the public meeting, phone calls or other relevant inquiries received by the Township, etc. to compare against the apparent impacts of past and subsequent alternate advertisement methods.
3. Document any input received from the public and any resulting response or action taken by the Township.
4. Document any amendments to the SWMO adopted during each reporting period.

BMP 2-3: Regularly Solicit Public Involvement and Participation from the Target Audience

A. Implementation

1. Soliciting Public Opinion
 - a. Public Meetings – The Township should hold dedicated public meetings or designate time during regularly scheduled public meetings to solicit involvement and participation from the target audience and encourage residents to provide input concerning the continued implementation and development of the MS4 Program. The Township should consider the following when planning a public meeting:
 - Effectively advertise all public meetings;
 - Present a summary of the status of and any notable progress or plans related to the continued implementation and development of the MS4 Program; and
 - Provide opportunities for public involvement and participation.
 - b. Attitude Surveys – The Township could conduct a survey to learn how the public perceives stormwater management in an effort to determine how best to incorporate the public's interests into the MS4 Program.
 - c. Watershed Organizations – The Township should involve the Bushkill Stream Conservancy and other local watershed groups to the extent possible in the continued implementation and development of the MS4 Program.
 - d. Stakeholder Involvement – Stakeholders are individuals or groups in the Township or larger community that are most affected by or interested in the MS4 Program. In other words, they have a vested interest in the waterbody and stormwater activities. Stakeholders might include individual residents, local school groups, community

leaders, local and state government representatives, and business owners in the watershed. The Township should consider the following in its efforts to engage stakeholders.

- Identify stakeholders by determining which residents, businesses, groups, etc. have a vested interest in the waterbody and stormwater activities. An attitude survey can assist the Township in identifying stakeholders.
 - Identify best practices to keep individual stakeholders informed of water quality issues
 - Determine the most effective methods to involve individual stakeholders and ways in which they can participate in or otherwise contribute to the cause.
 - Organize public meetings involving stakeholders to provide opportunities for involvement and participation.
2. The Township should consider sponsoring or organizing one or more of the following programs or other activities related to stormwater pollution prevention.
 - a. "Adopt-A-Stream" program to encourage individuals or groups to maintain, monitor, protect, and preserve a local stream or waterway;
 - b. "Adopt-A-Storm Drain" program to encourage individuals or groups to maintain storm drains free of debris and to monitor what is entering local waterways through storm drains;
 - c. A volunteer water quality monitoring program to give residents first-hand knowledge of the quality of local water bodies and to develop a cost-effective means of collecting water quality data;
 - d. A volunteer storm drain stenciling program to provide a simple activity in which concerned citizens, especially school students, can participate;
 - e. Community clean-up activities along local waterways, parks and recreation trails, and around storm drains;
 - f. A citizen watch group to aid local enforcement authorities in the identification of polluters; and
 - g. Workshops hosted by educators or public speakers to encourage public participation and education.
 3. Upon request by the Township, the Township Engineer will furnish additional guidance resources and provide consulting services to assist with the administration of the PIPP.

B. Measurable Goals

1. Conduct at least one public meeting per year to solicit public involvement and participation from the target audience.

2. Properly advertise any such public meetings using at least one alternate advertising channel in addition to the local newspaper.
3. Develop and maintain annually a list of individual stakeholders.
4. Organize or sponsor at least one public activity or program related to stormwater pollution prevention.
5. Document any instances of public involvement and participation.

MCM 3: Illicit Discharge Detection and Elimination

Importance of Illicit Discharge, Detection and Elimination (IDD&E)

Discharges into surface waters such as rivers, streams, lakes, and ponds from municipal separate storm sewer systems (MS4s) often include wastes and wastewater from non-stormwater sources. A study conducted in 1987 in Sacramento, California, found that almost one-half of the water discharged from a local MS4 was not directly attributable to precipitation runoff. A significant portion of the dry weather flows were from illicit and/or inappropriate discharges and connections to the system. Pollutant levels from these illicit discharges have been shown in EPA studies to be high enough to significantly degrade receiving water quality and threaten aquatic, wildlife, and human health.

The objective of the illicit discharge detection and elimination minimum control measure is for the Township to gain a thorough awareness of its storm sewer system. This awareness will allow the Township to determine the types and sources of illicit discharges entering its system and establish the legal, technical, and educational means needed to eliminate these discharges.

Definition of “Illicit Discharge”

Federal regulations define an illicit discharge as “... any discharge to an MS4 that is not composed entirely of stormwater ...”. Illicit discharges include the following non-stormwater wastes:

- Sanitary wastewater;
- Effluent from septic tanks;
- Carwash wastewater;
- Improper disposal of automobile and household toxins;
- Improper disposal of oil;
- Laundry wastewater; and
- Spills from roadway accidents.

The following non-stormwater wastes are not considered illicit discharges:

- Discharges from fire-fighting activities;
- Runoff from irrigation practices;
- Diverted stream flows;
- Uncontaminated ground water infiltration;
- Uncontaminated pumped ground water;
- Discharges from potable water sources;
- Foundation drains;
- Air conditioning condensate;
- Springs;
- Water from crawl space pumps; and
- Discharges from NPDES-permitted industrial sources.

Illicit discharges enter the system through either direct connections (e.g., wastewater piping either mistakenly or deliberately connected to the storm drains) or indirect connections (e.g., infiltration into the storm sewer system from cracked sanitary sewer systems, spills or toxins collected by or dumped directly into storm sewer inlets). The result is untreated discharges that

contribute high levels of pollutants, including heavy metals, toxins, oil and grease, solvents, nutrients, viruses, and bacteria to receiving waterbodies.

Program Development Requirements

In order to reduce to the maximum extent practicable the adverse impacts of illicit discharges on surface water quality, the IDD&E Program must address the following minimum requirements.

- Establish written practices and procedures to identify and eliminate illicit discharges to surface waters and screen storm sewer outfalls;
- Prepare a storm sewer system map showing the location of all outfalls and the names and locations of all waters of the United States that receive discharges from those outfalls;
- Prohibit, through ordinance or other regulatory mechanism to the extent allowable under State or local law, non-stormwater discharges into the MS4 and enact appropriate enforcement procedures and penalties;
- Devise a plan to detect and address non-stormwater discharges, including illegal dumping, into the MS4; and
- Educate Township employees, businesses, and the general public about the hazards associated with illegal discharges and improper disposal of waste.

BMP 3-1: Develop, Implement, and Maintain a Written Program for the Detection, Elimination, and Prevention of Illicit Discharges (Including Illegal Dumping)

A. Implementation

1. Detection and Reporting of Illicit Discharges

a. Public

- i. The Township should educate the public about the hazards of illicit discharges (including illegal dumping), how to identify a suspected illicit discharge, and what to do if one identifies a suspected illicit discharge using best practices contained in BMP 1-4 and BMP 3-6 herein.
- ii. The Township should implement the following procedures to facilitate the public reporting of suspected illicit discharges.
 - Include as a part of the forthcoming Township MS4 website prominently displayed information regarding illicit discharges including a telephone number and an email address for public reporting purposes.
 - Designate one or more Township employees (e.g. Township secretary, Township Zoning Officer, etc.) to receive, document, process, and manage public reports of suspected illicit discharges (the Manager).
 - Provide initial and ongoing education and training as needed to ensure that the Manager is familiar with established policies and procedures and is able to

properly perform tasks related to the receipt and management of public reports of suspected illicit discharges.

- The Manager should complete Section 1 of the Suspected Illicit Discharge – Report Form contained in Appendix A3 of this Manual for each report received.
- The Manager should make a copy of the partially completed Report Form, maintain the original in a designated location, and forward the copy to the Investigator described below.
- Following the investigation, the Manager should obtain the completed Report Form from the Investigator along with any photographs, test results, or other documentation related to the investigation of the suspected illicit discharge.
- The Manager should contact the complainant by telephone and provide the complainant with a summary of the investigation into the suspected illicit discharge, actions taken, if any, to resolve the issue, and planned future action, if any, on the part of the Township (unless pending or possible future litigation involving the source of the suspected illicit discharge prevents such follow-up with complainant).
- The Manager should complete the 'Follow-Up with Complainant' section of the Report Form.
- The Manager should file the completed Report Form along with any photographs, test results, or other documentation related to the investigation of the suspected illicit discharge in the designated location.
- At the end of each permit year (September 30), the Manager should make copies of all completed Report Forms and furnish same to the Township Engineer for inclusion in the MS4 Annual Report.

b. Township Employees

- i. The Township should educate its employees about the hazards of illicit discharges (including illegal dumping), how to identify a suspected illicit discharge, and what to do if one identifies a suspected illicit discharge.
- ii. The Township should reinforce in its employees their responsibility to look out for suspected illicit discharges while performing their primary job responsibilities.
- iii. The Township should implement the following procedures for the reporting of suspected illicit discharges by its employees.
 - Employees should verbally report suspected illicit discharges to their department head who will then convey the information to the Manager described above or advise the employee to convey the information to the Manger directly.

- The Manager will process the suspected illicit discharge according to the procedure outlined above.
 - c. Outfall Screening
 - i. The Township should regularly screen identified outfalls in Urbanized Areas.
 - ii. Refer to BMP 3-4 herein for guidance related to outfall screening practices.
- 2. Investigation and Elimination of Illicit Discharges
 - a. Designate one or more qualified person or persons (e.g. Township Engineer, Sewage Enforcement Officer, Zoning Officer, etc.) to investigate reports of suspected illicit discharges (the Investigator).
 - b. Provide initial and ongoing education and training as needed to ensure that the Investigator is familiar with established policies and procedures and is able to properly perform tasks related to the investigation of suspected illicit discharges.
 - c. The Investigator should assess the reported suspected illicit discharge in accordance with the procedures described in "Illicit Discharge Detection and Elimination, A Guidance Manual for Program Development and Technical Assessment" (the IDD&E Guidance Manual) which is included as an attachment to this Manual.
 - d. If deemed illicit, the Investigator should attempt to identify the source of the discharge in accordance with the procedures described in the IDD&E Guidance Manual.
 - e. If the source is able to be identified, the Township should take any and all reasonable and legal actions it deems appropriate to correct or eliminate the illicit discharge.
 - f. The Investigator should document the findings of the investigation, actions taken, if any, to resolve the issue, and planned future action, if any, on the part of the Township in Sections 2 and 3 of the Suspected Illicit Discharge – Report Form contained in Appendix A3 of this Manual.
 - g. Following the investigation, the Investigator should return the completed Report Form to the Manager along with any photographs or other documentation related to the investigation of the suspected illicit discharge.
- 3. Gaining Access to Private Property
 - a. The Investigator should not enter private property to investigate a suspected illicit discharge without prior authorization from the department head.
 - b. The Investigator should conduct any authorized investigations or other activities on private property in a respectful and unintrusive manner to the extent practicable.
 - c. The Township, with assistance from the Township Solicitor and Township Engineer, should review the suitability of existing Township ordinances to permit access by the

Township to private property for the purposes of investigating and correcting illicit discharges and enact new or amended ordinances as necessary.

- d. Upon adoption of any new or amended ordinances to permit access to private property as described above, the Township should amend this section of the Program to include any specific policies or protocol from the ordinance.

B. Measurable Goals

1. Develop the IDD&E Program during the first year of permit coverage (completed during permit year ending September 30, 2014).
2. Establish a dedicated telephone number and email address to accept public reports of suspected illicit discharges (permit year ending September 30, 2015).
3. Maintain records of all reports of suspected illicit discharges including the report form, any photographs or other documentation, the findings of the investigation, actions taken, if any, to resolve the issue, and planned future action, if any, on the part of the Township.
4. Review the suitability of existing Township ordinances to permit access by the Township to private property for the purposes of investigating and correcting illicit discharges and enact new or amended ordinances as necessary.
5. Document any new or amended ordinances related to the IDD&E Program adopted during each reporting period.
6. Review and update the IDD&E Program annually and implement improvements as appropriate.

BMP 3-2: Develop and Maintain a Map of the Regulated MS4 Watershed Area

A. Implementation

1. The Township Engineer should locate by field survey using a hand-held GPS device or other appropriate equipment and document any new or altered outfalls within Urbanized Areas of the Township.
2. Location information should include both horizontal and vertical positioning data reflecting the North American Datum of 1983 (NAD83) State Plane Coordinate System, Pennsylvania South Zone and North American Vertical Datum of 1988 (NAVD88), respectively.
3. The Township should consider expanding its mapping program to include outfalls in Non-Urbanized Areas of the Township.

B. Measurable Goals

1. Update the MS4 Watershed Map to identify all outfalls within Urbanized Areas of the Township during the first year of permit coverage (completed during permit year ending September 30, 2014).

2. Review the MS4 Watershed Map annually and update as necessary.

BMP 3-3: Develop and Maintain a Map of the Storm Sewer Collection System within the Regulated MS4 Watershed Area

A. Implementation

1. The Township Engineer should locate by field survey using a hand-held GPS device or other appropriate equipment all Township-owned storm sewer system components, including inlets and catch basins, oil-debris separators, piping, culverts, open channels, basins, infiltration practices, and outfalls within Urbanized Areas of the Township.
2. Location information should include both horizontal and vertical positioning data reflecting the North American Datum of 1983 (NAD83) State Plane Coordinate System, Pennsylvania South Zone and North American Vertical Datum of 1988 (NAVD88), respectively.
3. The Township should consider documenting additional parameters for storm sewer system components including the following:
 - a. Inlet size, type, and grate elevation;
 - b. Endwall size and type;
 - c. Pipe size, type, and invert elevations;
 - d. Approximate volume, geometry, and type of basins and infiltration practices; and
 - e. Approximate geometry and longitudinal slopes for open channels.
4. The Township should consider authorizing the Township Engineer or other qualified professional to compile location information and additional parameters for storm sewer system components using ESRI ArcMap graphical information system (GIS) software which can serve as a valuable reference tool to assist the Township in the operation and maintenance of its storm sewer system.
5. The Township should consider expanding its mapping program to include storm sewer system components in Non-Urbanized Areas of the Township and privately-owned PCSM BMPs referenced in BMP 5-6 herein.

B. Measurable Goals

1. Update the MS4 Watershed Map to identify all storm sewer system components within Urbanized Areas of the Township during the first year of permit coverage (complete mapping of the remaining portion of the storm sewer system prior to the permit year ending September 30, 2017).
2. Review the MS4 Watershed Map annually and update as necessary.

BMP 3-4: Conduct Outfall Field Screenings

- A. Intent: Develop and implement a program to systematically screen identified outfalls within Urbanized Areas of the Township for the purposes of detecting and eliminating illicit discharges.
- B. Implementation
1. Perform outfall field screenings according to the following general schedule.
 - a. Screen each identified outfall during dry weather conditions at least once during each five-year permit coverage term;
 - b. Screen outfalls annually in areas where past problems have been detected or known sources of dry weather flows occur on a regular basis; and
 - c. Screen outfalls in high impact areas such as those with high ratios of impervious cover or high levels of industrial activity more frequently and during varying seasonal and meteorological conditions.
 2. The Investigator defined in BMP 3-1 above or other designated, qualified person should screen outfalls to ensure accuracy and consistency.
 3. Document the findings of each outfall field screening using the Outfall Inventory and Screening Field Sheet contained in Appendix A3 of this Manual.
 4. Maintain copies of records of all outfall field screenings including the completed field sheet, photographs, other documentation, and test results, as applicable, in a designated location.
 5. Furnish original records of all outfall field screenings to the Manager defined in BMP 3-1 herein.
 6. At the end of each permit year (September 30), the Manager should make copies of records of all outfall field screenings performed during the past permit year and furnish same to the Township Engineer for inclusion in the MS4 Annual Report.
 7. Investigate suspected illicit discharges detected during field screenings in accordance with the procedures described in "Illicit Discharge Detection and Elimination, A Guidance Manual for Program Development and Technical Assessment" (the IDD&E Guidance Manual) which is included as an attachment to this Manual.
 8. Refer to the IDD&E Program in BMP 3-1 herein for guidance related to the investigation of suspected illicit discharges.
 9. The Township should consider expanding its screening program to include outfalls in Non-Urbanized Areas of the Township.
- C. Measurable Goals

1. Develop and implement an outfall field screening program during the first year of permit coverage (completed during permit year ending September 30, 2014).
2. Develop a written outfall screening schedule (permit year ending September 30, 2015).
3. Review the screening program annually and update as necessary.
4. Maintain records of all outfall field screenings including the completed field sheet, photographs, other documentation, and test results, as applicable.

BMP 3-5: Enact a Stormwater Management Ordinance (SWMO) that Includes a Prohibition of Non-Stormwater Discharges

A. Implementation

1. The Township, with assistance from the Township Solicitor and Township Engineer, should review the suitability of its current SWMO to prohibit non-stormwater discharges into its storm sewer system and take enforcement action (including imposing sanctions and penalties) against property owners in the event that a non-stormwater discharge is discovered.
2. Enact amendments to the SWMO as necessary.
3. Advertise any proposed amendments to the SWMO in accordance with Pennsylvania Municipalities Planning Code minimum requirements.
4. Provide opportunities for and actively solicit public involvement in the process of developing amendments to the SWMO.
5. Refer to BMP 2-2 herein for guidance related to advertising proposed amendments to the SWMO and soliciting public involvement in the process of developing those amendments.

B. Measurable Goals

1. Review the SWMO annually and update as necessary.
2. Properly advertise any proposed amendments to the SWMO using at least one alternate advertising channel in addition to the local newspaper.
3. Document any amendments to the SWMO adopted during each reporting period.

BMP 3-6: Provide Educational Outreach related to the IDD&E Program

A. Implementation

1. The Township should engage in educational outreach efforts to generate public awareness of and interest in its IDD&E Program and inform the public of the following:
 - a. What is an illicit discharge;
 - b. The hazards of illicit discharges, including illegal dumping;

- c. How to identify a suspected illicit discharge;
- d. What to do and how to report a suspected illicit discharge; and
- e. How to participate in programs and activities designed to identify and eliminate illicit discharges.

Refer to BMP 1-4 herein for suggested communication channels and best practices for devising effective public education and outreach initiatives.

2. The Township should organize or sponsor the following programs or other similar activities to involve the public in the implementation of its IDD&E Program.
 - a. Label outfalls and other storm drainage features to facilitate identification and public reporting of illicit discharges;
 - b. Volunteer efforts for locating, labeling, and visually inspecting outfalls and storm drains;
 - c. Recycling programs for commonly dumped wastes such as motor oil, antifreeze, paint, and pesticides; and
 - d. Specific initiatives to reach high-impact segments of the target audience such as commercial, industrial, and institutional entities that are likely to have a significant impact on stormwater (e.g. carpet cleaning businesses, gas stations, etc.).

Refer to BMP 2-3 herein for suggested methods to promote public involvement and participation.

3. Upon request by the Township, the Township Engineer will furnish educational materials and guidance resources and provide consulting services to assist with the administration of the IDD&E Program.

B. Measurable Goals

1. Upon establishing protocol for public reporting of suspected illicit discharges, publish promotional and educational information related to the IDD&E Program on the forthcoming Township MS4 website and in the Township newsletter.
2. Conduct at least one of the above or similar public outreach initiatives, activities, or programs related to the IDD&E Program annually.

MCM 4: Construction Site Stormwater Runoff Control

This section was intentionally left blank since the Township relies on Pennsylvania's statewide program for stormwater associated with construction activities.

Post-Construction Stormwater

MCM 5: Management for New Development and Redevelopment

Importance of Illicit Discharge, Detection and Elimination (IDD&E)

Post-construction stormwater management is necessary in the Township as well as any area undergoing new development or redevelopment because runoff from these areas has been shown to significantly impact the quality of receiving surface waters. Many studies indicate that thoughtful planning and design that minimizes pollutants in post-construction stormwater discharges is the most cost-effective approach to stormwater quality management.

There are generally two forms of substantial impacts of post-construction runoff. The first is caused by an increase in the type and quantity of pollutants in stormwater runoff. As runoff flows over areas altered by development, it picks up harmful sediment and chemicals such as oil and grease, pesticides, heavy metals, and nutrients (e.g. nitrogen and phosphorus). These pollutants can become suspended in runoff and carried to receiving waters, such as lakes, ponds, and streams oftentimes by municipal separate storm sewer systems (MS4s). Once deposited, these pollutants can enter the food chain through small aquatic life, eventually entering the tissues of fish and humans. The second kind of post-construction runoff impact occurs by increasing the quantity of water delivered to the waterbody during storms. Increased impervious surfaces (e.g. parking lots, driveways, rooftops, etc.) interrupt the natural cycle of gradual percolation of water through vegetation and soil. Instead, water is collected from surfaces such as asphalt and concrete and routed to drainage systems where large volumes of runoff quickly flow to the nearest receiving water. The effects of this process include streambank scouring and downstream flooding, which often lead to a loss of aquatic life and damage to property.

Program Development Requirements

The Township must develop, implement, and enforce a program that involves the following strategies to reduce pollutants in post-construction runoff from new development and redevelopment projects that result in land disturbance of greater than or equal to one acre.

- A combination of structural and non-structural best management practices (BMPs);
- An ordinance or other regulatory mechanism requiring the implementation of post-construction runoff controls to the extent allowable under State, Tribal or local law;
- Provisions to ensure adequate long-term operation and maintenance of BMPs; and
- Appropriate best management practices and measurable goals.

BMP 5-1: Develop and Implement a Written Procedure that Describes how the Municipality will Address the Required Components of this MCM

This section was intentionally left blank since the Township relies on Pennsylvania's statewide program for stormwater associated with construction activities.

BMP 5-2: Require the Implementation of a Combination of Structural and Non-Structural BMPs that Minimize Water Quality Impacts and Maintain Pre-Development Runoff Conditions

This section was intentionally left blank since the Township relies on Pennsylvania's statewide program for stormwater associated with construction activities.

BMP 5-3: Ensure that BMPs are Installed that will Prevent or Minimize Water Quality Impacts

This section was intentionally left blank since the Township relies on Pennsylvania's statewide program for stormwater associated with construction activities.

BMP 5-4: Enact, Implement, and Enforce a Stormwater Management Ordinance (SWMO) to Address Post-Construction Stormwater Runoff from New Development and Redevelopment Projects that Includes Sanctions and Penalties Associated with Non-Compliance, to the Extent Allowable Under State and Local Law

A. Implementation

1. The Township, with assistance from the Township Solicitor and Township Engineer, should review the suitability of its current SWMO to address post-construction stormwater runoff from new development and redevelopment projects including sanctions and penalties associated with non-compliance, to the extent allowable under state and local law.
2. Enact amendments to the SWMO as necessary.
3. Advertise any proposed amendments to the SWMO in accordance with Pennsylvania Municipalities Planning Code minimum requirements.
4. Provide opportunities for and actively solicit public involvement in the process of developing amendments to the SWMO.
5. Refer to BMP 2-2 herein for guidance related to advertising proposed amendments to the SWMO and soliciting public involvement in the process of developing those amendments.
6. Provide initial and ongoing education and training to ensure that the Township Code Enforcement Official and other designated enforcement personnel are aware of and familiar with new regulations, enforcement procedures, and penalties for non-compliance.

B. Measurable Goals

1. Review the SWMO annually and update as necessary.
2. Properly advertise any proposed amendments to the SWMO using at least one alternate advertising channel in addition to the local newspaper.
3. Document any amendments to the SWMO adopted during each reporting period.

4. Document any issues of non-compliance and related actions taken during each reporting period.

BMP 5-5: Develop and Implement Measures to Encourage and Expand the Use of Low Impact Development (LID) Practices for New Development and Redevelopment Projects

A. Implementation

1. The Township, with assistance from the Township Solicitor and Township Engineer, should review the suitability of its current ordinances to encourage LID practices for new development and redevelopment projects.
2. Enact new ordinances and repeal or amend existing conflicting ordinances to encourage LID practices.
3. Advertise any proposed amendments to ordinances related to LID practices in accordance with Pennsylvania Municipalities Planning Code minimum requirements.
4. Provide opportunities for and actively solicit public involvement in the process of developing amendments related to LID practices.
5. Refer to BMP 2-2 herein for guidance related to advertising proposed amendments to the SWMO and soliciting public involvement in the process of developing those amendments.
6. Provide initial and ongoing education and training to ensure that the Township Code Enforcement Official and other designated enforcement personnel are aware of and familiar with new regulations, enforcement procedures, and penalties for non-compliance.
7. Refer to the "Pennsylvania Stormwater Best Management Practices Manual" for guidance related to LID practices.

B. Measurable Goals

1. Review ordinances related to LID practices annually and update as necessary.
2. Properly advertise any proposed amendments to ordinances related to LID practices using at least one alternate advertising channel in addition to the local newspaper.
3. Document any amendments to ordinances related to LID practices adopted during each reporting period.
4. Document any new development or redevelopment projects involving LID practices approved by the Township during each reporting period.

BMP 5-6: Ensure Adequate Operation and Maintenance of all Post-Construction Stormwater Management (PCSM) Best Management Practices (BMPs) Installed at New Development and Redevelopment Projects

- A. Intent: Develop and implement a written inspection program to ensure the proper operation and maintenance of PCSM BMPs installed in Urbanized Areas of the Township in conjunction with NPDES permits for stormwater discharge from construction activities issued since March 10, 2003, including the enforcement of sanctions and penalties for non-compliance as authorized by ordinance referenced in BMP 5-4 herein.
- B. Implementation
 - 1. Inventory
 - a. The Township should update its inventory of PCSM BMPs within Urbanized Areas of the Township as new PCSM BMPs are installed. The inventory should include the following minimum information for all properties with regulated PCSM BMPs:
 - i. Location (e.g. street address, Northampton County tax parcel identification number, and/or geospatial coordinates);
 - ii. Mailing address, telephone number, and email address for property owner (and BMP owner if other than property owner);
 - iii. Types of BMPs installed;
 - iv. Month and year of BMP installation;
 - v. A brief description of the location of the BMP on the property;
 - vi. A brief description of the purpose of the BMP (e.g. infiltrate roof runoff from dwelling, filter runoff from parking area, etc.); and
 - vii. Recording information for PCSM Plan and Report, Record Plan, and PCSM BMP Operation and Maintenance Agreement, as applicable (e.g. record book volume and page numbers).
 - b. Refer to the current Inventory of PCSM BMP's contained in Appendix A5 of this Manual.
 - c. The Township should consider expanding its inventory program to include PCSM BMPs in Non-Urbanized Areas of the Township.
 - d. The Township should consider expanding its mapping program referenced in BMP 3-3 herein to include privately-owned PCSM BMPs.

2. Operation and Maintenance (O&M)

- a. The Township should annually remind PCSM BMP owner by mail of their obligation to properly operate and maintain their BMPs. The annual notification should include the following:
 - i. A brief explanation of the importance of proper BMP operation and maintenance;
 - ii. Reference to any applicable ordinances developed under BMP 5-3 herein related to BMP operation and maintenance;
 - iii. A list of BMPs installed on the property;
 - iv. O&M requirements for each BMP installed on the property;
 - v. An explanation of annual reporting requirements for BMP owners;
 - vi. A copy of the PCSM BMP Operation and Maintenance Annual Report Form referenced below;
 - vii. References to web-based or other resources related to proper operation and maintenance of BMPs; and
 - viii. A name and contact information for a Township employee that BMP owners can contact with questions or concerns.
- b. The Township should develop a PCSM BMP Operation and Maintenance Annual Report Form that BMP owners must use to document operations and maintenance activities performed during the permit year and other relevant information for each BMP.
- c. The Township should require BMP owners to complete and return the Annual Report Form to the Township closely following the end of each permit year (September 30).
- d. The Manager defined in BMP 3-1 herein should file all Annual Report Forms and related photographs and other documentation received from BMP owners in a designated location.
- e. The Manager should promptly notify by mail any BMP owners who fail to return a completed Annual Report Form by the established deadline, an extended deadline to submit the Annual Report Form, and any sanctions or penalties to be imposed by the Township in the event of continued non-compliance by the BMP owner.
- f. At the end of each permit year (September 30), the Manager should make copies of all Annual Report Forms and related documentation received during the past permit year and furnish same to the Township Engineer for inclusion in the MS4 Annual Report.
- g. Refer to the "Pennsylvania Stormwater Best Management Practices Manual" for operation and maintenance requirements for each BMP type listed in the inventory of PCSM BMPs referenced above.

3. Inspection

- a. The Township should implement a PCSM BMP inspection program that relies on a combination of self-reporting by BMP owners and periodic inspections by the Township to ensure the proper long-term operation and maintenance of BMPs.
- b. The Township should inspect each property with regulated BMPs according to the following schedule:
 - i. At least once during each five-year permit coverage;
 - ii. More frequently if deemed appropriate by the Inspector based on a review of the information (or lack thereof) contained in a BMP owner's Annual Report Form; and
 - iii. Immediately following failure by a BMP owner to return a completed Annual Report Form by the established due date.
- c. The Township should designate one or more qualified person or persons (e.g. Township Engineer, Township Zoning Officer, public works employee, etc.) to inspect BMPs (the Inspector).
- d. Provide initial and ongoing education and training as needed to ensure that the Inspector is familiar with established policies and procedures and is able to properly perform tasks related to the inspection of BMPs.
- e. The Township should develop a PCSM BMP Inspection Report Form for use by the Inspector in documenting the following minimum information:
 - i. Location (e.g. street address, Northampton County tax parcel identification number, and/or geospatial coordinates);
 - ii. Mailing address, telephone number, and email address for property owner (and BMP owner if other than property owner);
 - iii. Date and time of the inspection;
 - iv. Weather conditions at the time of the inspection, including an estimate of the amount and type of precipitation that occurred within one week prior to the inspection;
 - v. A list of BMPs installed on the property;
 - vi. Written descriptions of observed BMP conditions;
 - vii. Reference number and a brief written description for each attached photograph;
 - viii. Written description of any perceived BMP deficiencies;
 - ix. Written description of any required corrective action by the BMP owner;

- x. Written description and timeline of any planned follow-up inspection or other future action by the Township; and
 - xi. A written description and timeline of the eventual resolution to any required follow-up action by the BMP owner or the Township.
- f. The Inspector should document observations and findings for each inspection, including any required future action by the BMP owner or the Township and the eventual resolution of any such action, using the Inspection Report Form.
 - g. The Inspector shall take photographs as necessary to document general conditions of BMPs as well as any perceived deficiencies.
 - h. The Inspector should maintain copies of Inspection Report Forms and related photographs and other documentation in a designated location.
 - i. The Inspector should promptly furnish original Inspection Report Forms and related photographs and other documentation to the Manager defined in BMP 3-1 herein.
 - j. The Manager should promptly notify BMP owners by mail of any deficiencies noted by the Inspector during the inspection, any required corrective action by the BMP owner, and any sanctions or penalties to be imposed by the Township in the event of continued non-compliance by the BMP owner.
 - k. The Inspector shall perform a follow-up inspection in the event that corrective action is required on the part of the BMP owner.
 - l. At the end of each permit year (September 30), the Manager should make copies of all Inspection Report Forms and related photographs and other documentation received during the past permit year and furnish same to the Township Engineer for inclusion in the MS4 Annual Report.

C. Measurable Goals

1. Develop an inventory of PCSM BMPs installed in Urbanized Areas of the Township in conjunction with NPDES permits for stormwater discharge from construction activities issued since March 10, 2003 during the first year of permit coverage (completed during permit year ending September 30, 2014).
2. Review the PCSM BMP inventory annually and update as new PCSM BMPs are installed.
3. Develop a written inspection program for PCSM BMPs during the first year of permit coverage (completed permit year ending September 30, 2014).
4. Review the written PCSM BMP inspection program annually and update as necessary.
5. Maintain records of all Annual Report Forms and related photographs and other documentation.
6. Maintain records of all Inspection Report Forms and related photographs and other documentation.

Pollution Prevention / MCM 6: Good Housekeeping for Municipal Operations

Importance of Pollution Prevention and Good Housekeeping for Municipal Operations

The Pollution Prevention / Good Housekeeping Program for municipal operations is a key element of the Small MS4 Stormwater Program (the Program). Due to the broad scope and extensive scale of its operational and maintenance responsibilities, the Township and its employees possess significant potential to impact stormwater runoff quality. For example, the Township routinely conducts activities such as lawn and landscaping maintenance, building and facilities maintenance, regular and winter road maintenance and repair work, and automobile and equipment fleet maintenance that can pose a threat to water quality. Additionally, the Township performs work intended to reduce the amount of pollutants that reach the storm sewer system such as parking lot and street sweeping and storm drain system cleaning. Finally, the Township is responsible to contain spills, manage trash and yard waste, and regulate non-stormwater discharges. Through thoughtful evaluation of these and other similar activities and the development and implementation of sound practices and procedures the Township can ensure it limits the amount of pollutants introduced into its storm sewer systems thereby improving stormwater runoff quality to the maximum extent practicable.

Program Development Considerations

The Township should consider the following general guidelines as it continues to implement and further develop its Pollution Prevention / Good Housekeeping Program for municipal operations:

- Practices and procedures to ensure the proper regular and long-term inspection and maintenance of structural and non-structural stormwater best management practices (BMPs) to reduce floatables and other pollutants that are discharged from storm sewer systems;
- Practices and procedures that will reduce or eliminate the discharge of pollutants from areas such as public roads and parking lots, Township maintenance and storage yards (including salt storage and snow disposal areas), and other Township facilities;
- Practices and procedures for the proper disposal of waste such as dredge spoil, accumulated sediments, floatables, and other debris removed from storm sewer systems and areas listed above; and
- Policies and regulations to require the evaluation of existing flood management projects for possible incorporation of additional water quality protection devices and to ensure that new flood management projects are assessed relative to their potential to impact water quality.

BMP 6-1: Identify and Document all Facilities and Activities Owned and/or Operated by the Township that have the Potential to Generate or Impact Stormwater Runoff

- A. The Township identified the following Township facilities and activities with the potential to generate or impact stormwater runoff:

1. Maintenance of storm sewer system components such as inlets and catch basins, oil-debris separators, piping, culverts, open channels, basins, infiltration practices, and outfalls including inspection and cleaning of storm drains and piping, controlling illicit discharges and connections, and controlling illegal dumping;
2. Maintenance of roads, parking areas, and loading areas including sweeping and cleaning, repair and maintenance, striping, application of salt or other deicing agents, and bridge and structure maintenance;
3. Maintenance and repair of buildings including Administrative offices, public works buildings, police and fire departments, garages and storage buildings, and others;
4. Maintenance of grounds and landscaping including mowing, trimming, planting, application of fertilizers or pesticide, erosion control, and managing landscape wastes;
5. Maintenance, repair, fueling, and washing of vehicles and equipment;
6. Handling and disposal of waste including debris removed from stormwater management BMPs, solid waste collection, waste reduction and recycling, household hazardous waste collection; landscaping wastes from municipal operations, and controlling litter and illegal dumping;
7. Material handling and storage including liquid containers and raw (e.g. salt, soil, etc.), and hazardous materials; and
8. Spill prevention and response.

B. Measurable Goals

1. Develop an inventory of Township facilities and activities with the potential to generate or impact stormwater runoff (completed during permit year ending September 30, 2014).
2. Review and update the inventory of Township facilities and activities on an annual basis.

BMP 6-2: Develop, Implement, and Maintain a Written Operation and Maintenance (O&M) Program for all Facilities and Activities Owned and/or Operated by the Township that have the Potential to Generate or Impact Stormwater Runoff

A. The Township should follow the practices and procedures outlined below when performing each of the following operation and maintenance activities.

1. Storm Sewer System Components
 - a. Inspect system components including inlets and catch basins, oil-debris separators, piping, culverts, open channels, basins, infiltration practices, and outfalls at least once per year. For the sake of efficiency, this could be done in conjunction with the annual street sweeping program.
 - b. Remove and collect debris.
 - c. Flush pipes to remove clogs or accumulated sediment and debris as necessary.

- d. Repair or replace damaged structures as necessary.
 - e. Repair and restabilize eroded and bare areas in vegetated channels.
 - f. Follow all Federal and state regulations related to the proper storage and disposal of waste removed from the storm sewer system.
 - g. Prior to disposal store waste in a contained covered location outside of 100-year flood plains.
2. Road and Parking Area Maintenance
- a. Resurfacing
 - Perform paving operations involving concrete asphalt or other sealers only during dry weather conditions.
 - Employ proper staging techniques such as covering storm drain inlets and manholes during paving operations, using erosion and sediment controls to decrease runoff from repair sites, and using drip pans, absorbent materials and other pollution prevention materials to limit leaks of paving materials and fluids from paving machines.
 - b. Salt Application and Storage
 - Store salt or alternative deicing materials in a contained covered location outside of 100-year flood plains.
 - Avoid over-application of deicing materials.
 - Calibrate equipment to apply deicing materials at a rate and spread width as appropriate based on site specific characteristics (e.g. road width, traffic volume, proximity to surface waters, etc.).
 - Use gravel rather than chemical deicers in environmentally sensitive areas when practicable.
 - c. Roadside Vegetation
 - Apply chemical fertilizers and pesticides sparingly.
 - Use natural fertilizers and pesticides as opposed to chemical equivalents whenever practicable.
 - Apply chemical fertilizers and pesticides during ideal weather conditions (e.g. low wind, no rain in near forecast).
 - When establishing roadside vegetation, select a type of grass that is both salt and drought-tolerant.
 - d. Cleaning
 - Sweep or vacuum Township streets in Urbanized Areas and parking areas at Township facilities at least once per year to remove pollutants such as trash, sediment buildup, and debris from curb gutters and storm sewer inlets.

- Sweep or vacuum streets in high impact areas such as those with high ratios of impervious cover or high levels of industrial activity more frequently.
- Maintain accurate logs of the number of curb-miles swept and the amount of waste collected.
- Evaluate the above logs and devise a sweeping schedule that will maximize pollutant removal.
- Follow all Federal and state regulations related to the proper storage, disposal, and reuse of sweepings.
- Prior to disposal or reuse, store sweepings in a contained covered location outside of 100-year flood plains.

3. Grounds Maintenance

- a. Plant locally or regionally native species whenever practicable.
- b. Plant non-turf grass areas wherever practicable. Alternative ground cover such as meadow grass, wild flowers, and shrubs require less water and maintenance than turf grass.
- c. Where turf is used, select a type of grass that can withstand drought and become dormant during prolonged hot, dry weather.
- d. Water plants and lawns sparingly. Use low-volume water application approaches such as drip or sprinkler irrigation systems wherever practicable.
- e. Cut grass to a minimum height of three to four inches.
- f. Leave mulched clipping on the lawn as a natural fertilizer.
- g. Apply mulch to planting beds to prevent weeds and retain soil moisture.
- h. Apply chemical fertilizers and pesticides sparingly.
- i. Use natural fertilizers and pesticides as opposed to chemical equivalents whenever practicable.
- j. Apply chemical fertilizers and pesticides during ideal weather conditions (e.g. low wind, no rain in near forecast).
- k. Follow application and safety instructions on the label when using chemical pesticides. Wear the appropriate protective equipment when working with organophosphate insecticides or concentrated sprays or dusts. Read and follow all safety precautions listed on pesticide labels and wash hands and face before smoking or eating.
- l. Rinse tools or equipment that were used to apply or incorporate pesticides in a bucket and apply the rinse water as if it were full-strength pesticide.

m. Safely store for later use or dispose of any unused pesticides at a hazardous waste collection location.

4. Vehicle and Equipment Maintenance

a. Waste Reduction

- Minimize the number of solvents used. This makes recycling easier and it reduces hazardous waste management cost.
- Perform all liquid cleaning at a centralized station to ensure that solvents and residues stay in one area.
- Locate drip pans and draining boards to direct solvents back into a solvent sink or holding tank for reuse.

b. Use of Safer Alternative Chemical Products

- Use non-hazardous cleaners whenever practicable.
- Replace chlorinated organic solvents with non-chlorinated ones such as kerosene or mineral spirits.
- Purchase recycled products, such as engines, oil, transmission fluid, antifreeze, and hydraulic fluid, to help support the recycled products market.

c. Spill Containment and Cleanup

- Perform all maintenance activities inside or under cover to contain spills and prevent work surface runoff from entering storm drains.
- Clean up spills immediately without water whenever possible and properly dispose of clean up materials. Where necessary, use water sparingly.
- Seal floor drains.
- Consider hiring a service to collect spent solvents and other hazardous substances.
- Implement a spill prevention plan and maintain necessary spill kits nearby maintenance areas.

d. Good Housekeeping

- Update facility schematics to accurately reflect all plumbing connections.
- Closely monitor parked vehicles for leaks and place pans under any leaks to collect the fluids for proper disposal or recycling.
- Promptly transfer used fluids to recycling drums or hazardous waste containers.
- Dispose of liquid waste properly.
- In the event of a spill, cover drains with drain mats.
- Store cracked batteries in leak-proof secondary containers.

e. Parts Cleaning

- Use detergent-based or water-based cleaning systems instead of organic solvent degreasers.
- Steam clean or pressure wash parts instead of using solvents. Water discharged into the sanitary sewer may require treatment prior to release. Wastewater generated from steam cleaning can be discharged to an on-site oil/water separator.

5. Vehicle and Equipment Fueling

- a. Ensure vehicle fueling areas are properly paved with cement, concrete, or an equivalent impervious surface, with a two to four percent slope to prevent ponding, and separated from the rest of the site by a grade break or berm to prevent run-on of stormwater.
- b. Ensure vehicle fueling areas are properly covered. The cover should have minimum dimensions equal to or greater than the area within the grade break and should not drain onto the fuel dispensing area. Install a perimeter drain or slope the pavement inward so that runoff drains to a blind sump. It might be necessary to install and maintain an oil control device in catch basins that might receive runoff from the fueling area.
- c. Implement a spill prevention plan and maintain necessary spill kits nearby fueling areas.
- d. Inspect vehicle fueling areas and equipment regularly.
 - Check for external corrosion and structural failure in aboveground tanks.
 - Check for evidence of spills and overfills due to operator error.
 - Check for failure of any piping systems.
 - Inspect tank foundations, connections, coatings, tank walls, and piping systems.
 - Test above-ground tanks periodically for integrity using a qualified professional.
- e. Maintain vehicle fueling areas and equipment in good working condition.

6. Vehicle and Equipment Washing

- a. Use a commercial car wash whenever practicable.
- b. Avoid the use of detergents whenever possible. If detergents are necessary, use a phosphate-free, non-toxic, biodegradable soap. Using a commercial car wash.
- c. Wash vehicles and equipment in an area designed to collect and hold the wash water effluent generated. Recycle the wash water effluent or pump effluent onto grass or landscaped areas to provide filtration.
- d. If installation of a containment area is not feasible, wash vehicles and equipment on gravel, grass, or other permeable surfaces.

- e. Select location for wash area that does not drain to storm inlets to avoid discharges to the storm sewer system.
 - f. Avoid on-site pressure cleaning and steam cleaning whenever possible. If done on-site, do not pressure or steam clean in an area designated as a wellhead protection area of a public water supply.
 - g. Immediately contain and clean up spills.
7. Materials Handling and Storage
- a. General
 - Maintain an accurate inventory of materials to reduce the occurrence of overstocking hazardous materials.
 - Identify all hazardous and nonhazardous substances present at a facility.
 - Obtain a Material Safety Data Sheet (MSDS) for each material.
 - b. Hazardous Materials Storage
 - Note on the inventory of materials described above any special handling, storage, and/or disposal requirements for hazardous chemicals.
 - Label all containers with the name of the chemical, unit number, expiration date, handling instructions, and health or environmental hazards. Ensuring sufficient aisle space to provide access for inspections and to improve the ease of material transport.
 - Store materials in a contained covered location outside of 100-year flood plains.
 - Store materials away from high-traffic areas to reduce the likelihood of accidents that might cause spills or damage to drums, bags, or containers.
 - Stack containers in accordance with the manufacturers' directions to avoid damaging the container or the product itself.
 - Store containers on pallets or equivalent structures to facilitate inspection for leaks and prevent the containers from coming into contact with wet floors, which can cause corrosion. This consideration also reduces the incidence of damage by pests (insects, rodents, etc.).
 - Delegate the responsibility for management of hazardous materials to personnel trained and experienced in hazardous substance management.
 - Implement a spill prevention plan and maintain necessary spill kits nearby materials storage areas.
8. Spill Prevention and Response
- a. Identify the individual(s) responsible for implementing the Spill Prevention and Response Plan.

- b. Define safety measures associated with each potential type of waste (e.g. gasoline, fuel oil or other petroleum products; residential or industrial waste; etc.).
- c. Define the protocol for notification of appropriate authorities, such as police and fire departments, hospitals, or publicly-owned treatment works for assistance.
- d. Define procedures for containing, diverting, isolating, and cleaning up spills.
- e. Describe spill response equipment to be used, including safety and cleanup equipment.

B. Measurable Goals

1. Develop, implement, and maintain a written Operation and Maintenance (O&M) Program for all facilities and activities owned and/or operated by the Township that have the potential to generate or impact stormwater runoff (completed during permit year ending September 30, 2014).
2. Review and update the O&M Program on an annual basis.

BMP #6-3: Develop and Implement an Employee Training Program Designed to Further the Goal of Reducing or Preventing the Discharge of Pollutants from Municipal Operations

A. Applicability

1. All municipal employees, regardless of job description, should receive training designed to educate staff about potential sources of stormwater contamination and methods to minimize the impact of municipal operations on stormwater runoff quality.
2. Municipal employees who are directly involved in activities that have the potential to cause or prevent pollution should receive training tailored to their specific activities in addition to general training.

B. Approved Topics

1. General stormwater awareness
2. Detection, reporting, and elimination of illicit discharges
3. Operation and maintenance of stormwater management BMPs
4. Pollution prevention through good housekeeping procedures
5. Spill prevention and response

C. Instructional Methods and Resources

1. In-house classroom format
2. In-house "tailgate" meetings
3. On-the-job reinforcement

4. Workshops and conferences
5. Display or distribution of educational materials

D. Cost Savings Considerations

1. Incorporate initiatives into existing employee training programs.
2. Utilize free educational materials and training tools available through various online resources.
3. Select free or low-cost workshops or conferences presented by government agencies, outside organizations, and companies.

E. Implementation

1. The Township should provide at least four formal training sessions annually (one per quarter) to each employee.
2. At the beginning of each permit year, the Township Manager in cooperation with each department head should select general and job-specific training topics, select appropriate training methods, and set training schedules for the year for each respective department.
3. The Township should cover a variety of topics from year to year from the categories outlined above.
4. Department heads should strive to provide additional in-field training whenever possible to reinforce lessons taught during formal training sessions.
5. Department heads should post informational resources such as placards, posters, and stickers at appropriate locations around the work place to raise awareness of stormwater pollution prevention and remind employees of proper procedures.
6. Department heads should maintain records of training sessions using the Municipal Employee Training – Annual Report Form contained in Appendix A6 of this Manual.
7. At the end of each permit year (September 30), department heads should make copies of all completed Report Forms and furnish same to the Township Engineer for inclusion in the MS4 Annual Report.
8. Upon request by the Township, the Township Engineer will furnish educational materials and guidance resources and provide consulting services to assist with the administration of the municipal employee training program.

F. Measurable Goals

1. Develop a municipal employee training program during the first year of permit coverage (completed during permit year ending September 30, 2014).

2. Provide at least four formal training sessions annually (one per quarter) to each employee.
3. Maintain records of training sessions using the form contained in Appendix A6 of this Manual.
4. Implement and review the training program annually and update as necessary.

Suspected Illicit Discharge - Report Form

Section 1: General Information

Responder Information	
Call Received by:	Call Date:
Precipitation Depth (In.) in Past 24-48 Hrs.:	Call Time (Military):
Reporter Information	
Name:	Incident Date:
Address:	Incident Time (Military):
Telephone Number:	Email Address:

Section 2: Incident Location

Latitude/Longitude:	Outfall Number:
Location of Discharge (nearest street intersection, address, nearby landmarks, etc.): _____ _____ _____	
Description	<input type="checkbox"/> Stream Corridor (In or Adjacent to Stream)
	<input type="checkbox"/> Outfall <input type="checkbox"/> In-Stream <input type="checkbox"/> Along Banks
	<input type="checkbox"/> Upland Area (Land not Adjacent to Stream)
	<input type="checkbox"/> Near Inlet <input type="checkbox"/> Near Other Water Source (Detention Basin, Wetland, etc.)

Section 3: Upland Problem Indicator Description

<input type="checkbox"/> Dumping <input type="checkbox"/> Soap Suds <input type="checkbox"/> Oil, Solvents, Chemicals <input type="checkbox"/> Other: _____

Section 4: Stream Corridor Problem Indicator Description

Flow Present	<input type="checkbox"/> Yes <input type="checkbox"/> No
Flow Description	<input type="checkbox"/> Trickle <input type="checkbox"/> Moderate <input type="checkbox"/> Substantial <input type="checkbox"/> Intermittant
Photo Provided	<input type="checkbox"/> Yes <input type="checkbox"/> No (If yes, attach to form)
Odor	<input type="checkbox"/> None <input type="checkbox"/> Musty <input type="checkbox"/> Sewage <input type="checkbox"/> Rotten Eggs <input type="checkbox"/> Sour Milk <input type="checkbox"/> Petroleum <input type="checkbox"/> Other: _____
Color	<input type="checkbox"/> None <input type="checkbox"/> Red <input type="checkbox"/> Yellow <input type="checkbox"/> Brown <input type="checkbox"/> Green <input type="checkbox"/> Grey <input type="checkbox"/> Other: _____
Clarity	<input type="checkbox"/> Clear <input type="checkbox"/> Cloudy <input type="checkbox"/> Opaque
Floatables	<input type="checkbox"/> None <input type="checkbox"/> Garbage <input type="checkbox"/> Algae <input type="checkbox"/> Dead Fish <input type="checkbox"/> Oily Sheen <input type="checkbox"/> Sewage (Toilet Paper, etc.) <input type="checkbox"/> Other: _____
Additional Information: _____ _____ _____	
Suspected Violator or Source (Name, Address, Personal or Vehicle Description, License Plate Number, etc.): _____ _____	

Suspected Illicit Discharge - Report Form

Section 5: Follow-Up Investigation

Investigator Name:	Date:
	Time (Military):
Date of Last Rainfall:	Approx. Rainfall Depth (In.):
<input type="checkbox"/> No Investigation Made	Reason:
<input type="checkbox"/> Referred to Outside Agency	Agency Name:
<input type="checkbox"/> Investigated: No Action Necessary	Reason:
<input type="checkbox"/> Investigated: Required Action	Reason:
Description of Action(s) Taken: _____ _____ _____	
Hours between Call and Investigation:	Date Incident Closed:
Additional Information: _____ _____ _____	

Outfall Inventory and Screening Field Sheet

Section 1: Background Data

Watershed Name:		Outfall ID:	
Date:		Time (Military):	
Investigator Name:		Rainfall (In.) in Last 24 Hrs.:	
Air Temperature:		Rainfall (In.) in Last 48 Hrs.:	
Latitude:	Longitude:	GPS Unit:	GPS LMK:
Camera:		Photo #s:	
Land Use(s) in Drainage Area			
<input type="checkbox"/> Industrial	<input type="checkbox"/> Open Space	Known Businesses/Industries:	
<input type="checkbox"/> Urban Residential	<input type="checkbox"/> Institutional	_____	
<input type="checkbox"/> Suburban Residential	<input type="checkbox"/> Other: _____	_____	
<input type="checkbox"/> Commercial	<input type="checkbox"/> Other: _____	_____	
Notes: (e.g. Origin of outfall, if known)			

Section 2: Outfall Description

Type	Material	Geometry	Dimensions	Submerged	
<input type="checkbox"/> Pipe	<input type="checkbox"/> RCP <input type="checkbox"/> HDPE <input type="checkbox"/> PVC <input type="checkbox"/> CMP <input type="checkbox"/> Steel <input type="checkbox"/> Other: _____	<input type="checkbox"/> Circular <input type="checkbox"/> Elliptical <input type="checkbox"/> Box <input type="checkbox"/> Other: _____	<input type="checkbox"/> Single <input type="checkbox"/> Double <input type="checkbox"/> Triple <input type="checkbox"/> Other: _____	Dia./Dims. _____ _____ _____	Water: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Part Sedmnt.: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Part
<input type="checkbox"/> Channel	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> Rip-rap <input type="checkbox"/> Other: _____	<input type="checkbox"/> Trapazoidal <input type="checkbox"/> Parabolic <input type="checkbox"/> Other: _____	Depth: _____ Top Width: _____ Bot. Width: _____		
<input type="checkbox"/> In Stream		(Applicable when collecting samples)			
Flow Present	<input type="checkbox"/> Yes <input type="checkbox"/> No (If no, skip to Section 5)				
Flow Description	<input type="checkbox"/> Trickle <input type="checkbox"/> Moderate <input type="checkbox"/> Substantial				

Section 3: Quantitative Characterization

Field Data for Flowing Outfalls				
Parameter	Result	Unit	Equipment	
<input type="checkbox"/> Flow #1	Volume		Liter	Bottle
	Time to Fill		Second	Stop Watch
<input type="checkbox"/> Flow #2	Flow Depth		Inches	Tape Measure
	Flow Width	_____ ' - _____ "	Ft.-In.	Tape Measure
	Traveled Length	_____ ' - _____ "	Ft.-In.	Tape Measure
	Travel Time		Seconds	Stop Watch
Water Temperature		F°	Thermometer	
pH		pH	Test Strip/Probe	
Ammonia		Miligrams/Liter	Test Strip	

Outfall Inventory and Screening Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only

Are any physical indicators present in the flow? Yes No (If no, skip to Section 5)

Type	Description	Relative Severity Index		
<input type="checkbox"/> Odor	<input type="checkbox"/> Sewage <input type="checkbox"/> Petrol./Gas <input type="checkbox"/> Sulfide <input type="checkbox"/> Other: _____ <input type="checkbox"/> Rancid/Sour	<input type="checkbox"/> 1 Faint	<input type="checkbox"/> 2 Easily Detectible	<input type="checkbox"/> 3 Noticeable from Distance
<input type="checkbox"/> Color	<input type="checkbox"/> Clear <input type="checkbox"/> Grey <input type="checkbox"/> Green <input type="checkbox"/> Red <input type="checkbox"/> Brown <input type="checkbox"/> Yellow <input type="checkbox"/> Orange <input type="checkbox"/> Other: _____	<input type="checkbox"/> 1 Faint color in bottle	<input type="checkbox"/> 2 Clearly visible in bottle	<input type="checkbox"/> 3 Clearly visible in flow
<input type="checkbox"/> Turbidity	See Severity	<input type="checkbox"/> 1 Slight Cloudy	<input type="checkbox"/> 2 Cloudy	<input type="checkbox"/> 3 Opaque
<input type="checkbox"/> Floatables (Excludes Trash)	<input type="checkbox"/> Sewage (Toilet paper, etc.) <input type="checkbox"/> Petroleum (Oil sheen) <input type="checkbox"/> Sewage <input type="checkbox"/> Other: _____	<input type="checkbox"/> 1 Few/Slight Origin not Obvious	<input type="checkbox"/> 2 Some Indications of Origin	<input type="checkbox"/> 3 Some Origin Obvious

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are any physical indicators present that are not related to flow? Yes No (If no, skip to Section 6)

Indicator	Description	Comments
<input type="checkbox"/> Outfall Damage	<input type="checkbox"/> Peeling Paint <input type="checkbox"/> Spalling or Cracking <input type="checkbox"/> Corrosion	
<input type="checkbox"/> Deposits/Stains	<input type="checkbox"/> Oily <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other: _____	
<input type="checkbox"/> Abnormal Vegetation	<input type="checkbox"/> Excessive <input type="checkbox"/> Inhibited	
<input type="checkbox"/> Poor Pool Quality	<input type="checkbox"/> Odors <input type="checkbox"/> Suds <input type="checkbox"/> Colors <input type="checkbox"/> Excess Algae <input type="checkbox"/> Floatables <input type="checkbox"/> Other: _____ <input type="checkbox"/> Oil Sheen	
<input type="checkbox"/> Pipe Benthic Growth	<input type="checkbox"/> Brown <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Other: _____	

Section 6: Overall Outfall Characterization

<input type="checkbox"/> Unlikely	<input type="checkbox"/> Potential (presence of 2 or more indicators)	<input type="checkbox"/> Suspect (1 or more indicators severity >3)	<input type="checkbox"/> Obvious
-----------------------------------	---	---	----------------------------------

Section 7: Data Collection

Sample for Lab Analysis	<input type="checkbox"/> Yes <input type="checkbox"/> No	
If Yes, Collected from	<input type="checkbox"/> Flow <input type="checkbox"/> Pool	
Intermittent Flow Trap Set?	<input type="checkbox"/> Yes <input type="checkbox"/> No	If yes, type? <input type="checkbox"/> OBM <input type="checkbox"/> Caulk Dam

Section 8: Any Non-Illicit Discharge Concerns (trash or needed infrastructure repairs)

Description:

Municipal Employee Training - Annual Report Form

Session 1: January - March

Proctor Name:	Employee Attendee Names:
Date:	_____
Topic:	_____
Duration:	_____
Training Session / Resource Type:	_____
<input type="checkbox"/> Video <input type="checkbox"/> General Discussion	_____
<input type="checkbox"/> On-Job Reinforcement <input type="checkbox"/> Conference	_____
<input type="checkbox"/> Vendor Presentation <input type="checkbox"/> Other: _____	_____

Session 2: April - June

Proctor Name:	Employee Attendee Names:
Date:	_____
Topic:	_____
Duration:	_____
Training Session / Resource Type:	_____
<input type="checkbox"/> Video <input type="checkbox"/> General Discussion	_____
<input type="checkbox"/> On-Job Reinforcement <input type="checkbox"/> Conference	_____
<input type="checkbox"/> Vendor Presentation <input type="checkbox"/> Other: _____	_____

Session 3: July - September

Proctor Name:	Employee Attendee Names:
Date:	_____
Topic:	_____
Duration:	_____
Training Session / Resource Type:	_____
<input type="checkbox"/> Video <input type="checkbox"/> General Discussion	_____
<input type="checkbox"/> On-Job Reinforcement <input type="checkbox"/> Conference	_____
<input type="checkbox"/> Vendor Presentation <input type="checkbox"/> Other: _____	_____

Session 4: October - December

Proctor Name:	Employee Attendee Names:
Date:	_____
Topic:	_____
Duration:	_____
Training Session / Resource Type:	_____
<input type="checkbox"/> Video <input type="checkbox"/> General Discussion	_____
<input type="checkbox"/> On-Job Reinforcement <input type="checkbox"/> Conference	_____
<input type="checkbox"/> Vendor Presentation <input type="checkbox"/> Other: _____	_____

