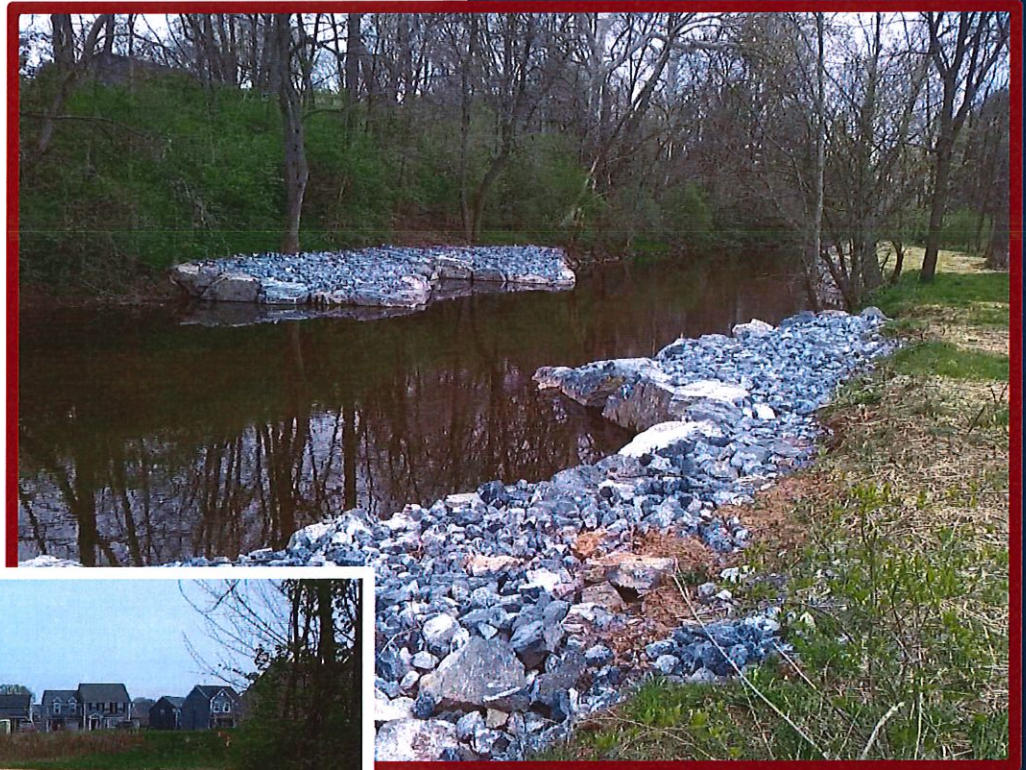


Ephrata Township
265 Akron Road
Ephrata, PA 17522

Stormwater Management Program



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INTRODUCTION

Ephrata Township is a 16 square mile community in northeastern Lancaster County and surrounds the Borough of Ephrata. The Township has a strong agricultural heritage and over half of the land area is currently used for agricultural production. The remaining land use is primarily comprised of a mix of residential, commercial, and industrial development. Ephrata Township has numerous small streams including Cocalico Creek, Conestoga River, Coover Run, and Meadow Run. Each of these streams are tributary to the Susquehanna River and the Chesapeake Bay. DEP has classified each of these streams as impaired, meaning they cannot adequately support aquatic life – they are too polluted.

Stream	Impairment
Cocalico Creek	Nutrients and Siltation
Conestoga River	Nutrients, Organic Enrichment/Low D.O., and Siltation
Coover Run	Nutrients and Siltation
Meadow Run	Nutrients and Siltation

During storm events, polluted runoff is collected and conveyed through Ephrata Township’s Municipal Separate Storm Sewer System (MS4), and then discharged directly into local streams. The runoff can be polluted by a wide variety of substances that harm water quality including manure, fertilizer, chemicals, petroleum products, and trash. As the Ephrata Township continues to grow with more roads, parking lots, and buildings, increased stormwater runoff will continue to contribute to poor water quality unless steps are taken to reduce stormwater pollution.

In 2003 Ephrata Township received a National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4s) and continues to have permit coverage for their small MS4. The permit requires Ephrata Township to implement best management practices (BMPs) to support the following six Minimum Control Measures (MCMs):

- MCM #1 Public Education and Outreach
- MCM #2 Public Participation and Involvement
- MCM #3 Illicit Discharge Detection and Elimination
- MCM #4 Construction Site Runoff Control
- MCM #5 Post-Construction Stormwater Management
- MCM #6 Pollution Prevention and Good Housekeeping

Ephrata Township’s 2018 MS4 Permit became effective on October 1, 2018 and includes an approved Pollutant Reduction Plan (PRP). In addition to implementing BMPs in the above MCMs, Ephrata Township must implement projects identified in the PRP that achieve required pollutant loading reductions for sediment, Total Phosphorus and Total Nitrogen by September 30, 2023. Ephrata Township must also implement Pollutant Control Measures in the sewersheds of streams impaired by Pathogens and/or Priority Organic Compounds. This stormwater management program will be reviewed annually and updated as needed to comply with PA DEP requirements.

MCM #1: Public Education and Outreach Program (PEOP)

(25 Pa. Code §92a.32(a) and 40 CFR §122.34 (b)(1))

A key component of Ephrata Township's Stormwater Management Program (SWMP) is to encourage the public to reduce stormwater pollution to improve water quality. To do so, Ephrata Township must increase the public's knowledge of how stormwater pollution contributes to local stream impairments, and what actions protect and improve water quality. To achieve this goal, Ephrata Township will develop, publish, and distribute educational materials that reach diverse audiences, form partnerships with environmental organizations, and evaluate the program annually to ensure program goals are met. Once the public has a better understanding of these issues, they are more likely to support and participate in water quality programs and initiatives.

Developing a PEOP is the first Minimum Control Measure (MCM) outlined in the NPDES MS4 General Permit (Permit) which requires Ephrata Township to *implement a public education program to distribute educational materials to the community or conduct equivalent outreach activities about the impacts of stormwater discharges on water bodies and the steps that the public can take to reduce pollutants in stormwater runoff (40 CFR Part 122.34(b)(1)(i)).*

MCM #1 includes four Best Management Practices (BMPs) that Ephrata Township must implement to comply with current regulations. Each BMP is identified below, followed by Ephrata Township's strategy to achieve program compliance.

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

(1) For new permittees a Public Education and Outreach Program (PEOP) shall be developed and implemented during the first year of coverage under this General Permit and shall be re-evaluated each permit year thereafter and revised as needed.

(2) For existing permittees, the existing PEOP shall be reviewed annually and revised as necessary.

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

Ephrata Township has developed this written PEOP to outline strategies to engage and educate the community and comply with the components of MCM #1. Ephrata Township has developed several educational log sheets to document the publication and distribution of educational materials via newsletters, Ephrata Township's website, and any other method Ephrata Township uses to educate the public. To develop specific educational materials unique to a variety of groups, Ephrata Township has developed a detailed target audience group (TAG) list including eight main groups comprised of 12 land use classifications. This written PEOP program will be reviewed annually and revised as needed to reflect program updates.

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

(1) For new permittees, the lists shall be developed within the first year of coverage under the permit and reviewed and updated as necessary every year thereafter.

(2) For existing permittees, the lists shall continue to be reviewed and updated annually.

MCM #1: Public Education and Outreach Program (PEOP)

(25 Pa. Code §92a.32(a) and 40 CFR §122.34 (b)(1))

Based on an analysis of Geographic Information Systems (GIS) parcel data available from Lancaster County GIS, Ephrata Township developed a detailed list of target audience groups (TAGs). To develop and distribute educational materials specific to each group, Ephrata Township researched what stormwater issues might matter most to each group, what stormwater impacts may affect them most directly, and what may motivate behavior change to reduce stormwater pollution (See Appendix 1A for the detailed TAG list). The table below summarizes the distribution of each TAG, and the following descriptions identify how stormwater may affect each group:

TAG	COUNT (parcels)	COUNT %	AREA (acres)	AREA %
Residents/Homeowners	2,486	78.23%	1,651.03	16.51%
Apartments. Condo, Mobile Home Park	165	5.19%	153.23	1.53%
Agricultural	153	4.81%	6,722.34	67.22%
Community-based Organizations	15	0.47%	122.51	1.23%
Recreational	18	0.57%	45.66	0.46%
Age-Qualified Community	2	0.06%	48.02	0.48%
Commercial	149	4.69%	613.27	6.13%
Utilities	13	0.41%	83.97	0.84%
Educational Facilities	7	0.22%	46.52	0.47%
Government-Owned, Parks	10	0.31%	55.91	0.56%
Industrial	23	0.72%	199.49	1.99%
Vacant Land	137	4.31%	257.83	2.58%
TOTAL	3,178	100%	9,999.77	100%

Residents/Homeowners

Residential parcels account for 78.2% of Ephrata Township parcels and comprise 16.5% of the land area within the municipal boundary. Many residents and homeowners are familiar with stormwater management facilities including inlets, pipes, endwalls/headwalls, drainage swales, and detention basins. Residents of newer developments may also be familiar with infiltration trenches and rain gardens. This TAG is typically responsible for property maintenance and regularly takes actions that have the potential to harm or protect water quality: fertilize and mow lawns, rake leaves, shovel snow, wash cars, and plant trees and shrubs. Because this is the largest TAG by number of people, Ephrata Township will provide and distribute a significant amount of educational material geared toward this audience.

Age Qualified Community / Apartment, Condo, and Mobile Home Complexes

Combined, Age Qualified Communities and Apartment. Condo, and Mobile Home Complexes comprise 5.2% of Ephrata Township's parcels and 2.0% of the land area. Residents of these communities may not be responsible for property/stormwater system maintenance. Instead, property managers often hire contractors for general

MCM #1: Public Education and Outreach Program (PEOP)

(25 Pa. Code §92a.32(a) and 40 CFR §122.34 (b)(1))

landscaping, lawn care, snow removal, and maintenance of the stormwater facilities. To ensure these properties are maintained in a way that protects water quality, Ephrata Township works to educate local business leaders and contractors on stormwater issues. In addition, there may be an opportunity to solicit the participation of residents in age qualified communities to help with Ephrata Township's SWMP.

Agricultural Community

Although agricultural parcels comprise only 4.8% of Ephrata Township's parcels, the agricultural land area comprises 67.2%. Ephrata Township partners with and maintains a Memorandum of Understanding (MOU) with the Lancaster County Conservation District (LCCD), who takes the lead in farmer education, outreach, and compliance issues. Farmers are required to develop Conservation and Manure/Nutrient Management Plans and implement BMPs to protect the natural resources (soil, water, and air quality) on their farms. Because the agricultural community makes up over half of the land area, Ephrata Township will work with partners to distribute educational materials that provide information on the benefits of conservation tillage practices, cover crops, terraces, barnyard improvements, livestock crossings, exclusionary fencing, riparian buffers, and other agricultural BMPs to this TAG.

Commercial and Industrial / Recreational

Commercial and industrial land developments, including recreational facilities account for approximately 6.0% of Ephrata Township's parcels and 8.5% of land area. These parcels may include large areas of impervious surfaces which have a significant impact on stormwater volumes and water quality. While newer developments may have stormwater facilities that provide water quality requirements, many older developments have either no stormwater facilities or no facilities that provide water quality benefits. This TAG can play a significant role in Ephrata Township's SWMP and provide opportunities for green infrastructure retrofits to existing facilities. Also, business and industry leaders may be willing to sponsor and/or participate in community stormwater committees, activities, and local watershed groups.

Community-based Organizations

This TAG comprises less than 1% of the total parcels and 1.2% of the land area, and includes churches, scouting organizations, and social clubs. These organizations often hold regular meetings, which present a good opportunity to distribute and discuss stormwater educational materials. The members of these groups are often interested in community service projects and may be willing volunteers for stormwater and water quality activities.

Governmental Agencies

Local government agencies account for less than 1% of the total parcels and land area. This TAG includes municipal offices, maintenance facilities, parks, and sewer and water authority properties. Employees and volunteers should have sufficient knowledge of stormwater issues to educate members of their communities, answer questions, and promote the SWMP goals and objectives. This is especially important during public meetings and other direct communication with members of the community.

MCM #1: Public Education and Outreach Program (PEOP)

(25 Pa. Code §92a.32(a) and 40 CFR §122.34 (b)(1))

Educational Facilities

Educational facilities account for less than 1% of the total parcels and land area. Providing stormwater educational information to schools is a worthy effort and a key component of the SWMP. Water quality education should be a component of the existing science curriculum in the public schools and may be included in any environmentally themed club or student-run organization. Many students are required to accumulate volunteer hours. Working together with Ephrata Township staff to mark inlets with a “No Dumping” message or planting trees can be important activities that benefit the students and the municipality. In addition to the Ephrata Area School District, there are numerous private schools and home-schools that may provide water quality educational information to their students.

Utilities, Developers and Contractors

Local government agencies account for less than 1% of the total parcels and land area. Members of this TAG conduct business and construct projects within Ephrata Township but may not have an established physical location within municipal boundaries. The parcels classified as utility include a variety of electric and telecommunication ROWs comprising less than 1% of total parcel and land area counts. However, since members of this group may have regular interactions with municipal staff during the land development review and approval process, it is important that they understand elements of the SWMP that directly affect their projects.

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

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

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

(2) In subsequent years (and for existing permittees), the list of items published and the content in these items shall be reviewed, updated, and maintained annually. The publications shall contain stormwater educational information that addresses one or more of the 6 MCMs.

Ephrata Township provides a variety of educational information at the municipal building.

Ephrata Township also maintains a website with a Storm Water Management page dedicated to water quality topics including. Ephrata Township staff reviews the information and adds educational information and links to other organizations as needed. Ephrata Township documents information contained on the website and records the date and description of any new material that is uploaded to the website (See Appendix 1C).

MCM #1: Public Education and Outreach Program (PEOP)

(25 Pa. Code §92a.32(a) and 40 CFR §122.34 (b)(1))

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

All permittees shall select and utilize at least two distribution methods in each permit year. These are in addition to the newsletter and website provisions of BMP #3, above.

By promoting the stormwater pollution message in print, digital, and face-to-face events, Ephrata Township increases the likelihood that everyone in the community receives information. Ephrata Township has developed strong relationships with partnering organizations who provide additional opportunities to distribute stormwater educational materials to a more regional audience. In addition, by promoting different types of participatory learning events such as workshops, clean-up days, and tree plantings, Ephrata Township ensures that people of all ages and abilities have an opportunity to engage in a way that meets their level of comfort and availability. In addition to the municipal office and website, Ephrata Township engages the public as follows:

- Partners with the Ephrata Library to educate children and adults on water quality topics.
- Promotes activities and events in the Cocalico Creek Watershed.

All educational events and activities are documented on Ephrata Township Education Log (See Appendix 1D).

MCM #2: Public Involvement / Participation Program (PIPP) (25 Pa. Code §92a.32(a) and 40 CFR §122.34 (b)(2))

Ephrata Township will promote public participation in the design, implementation, and tracking of the Stormwater Management Program (SWMP) by ensuring the public can easily find information about the program, partner with existing environmental organizations, create participatory events and opportunities that attract all citizens regardless of age, ability, economic status, or ethnicity, and develop methods to document and track the PIPP to gauge permit compliance and program effectiveness.

Finding citizens willing to participate in the SWMP is challenging for a small community and Ephrata Township must find creative ways to gain public interest. However, because greater participation leads to reduced water pollution, Ephrata Township is strongly committed to meeting this challenge. Ephrata Township solicits participation from a variety of target audience groups (TAGs) as part of the PIPP and will take advantage of these efforts to find willing volunteers. A key component of the PIPP is to tap into the memberships of partnering organizations. By continually promoting the stormwater message to all community groups, Ephrata Township can garner greater public support for the SWMP. Ephrata Township will review, evaluate, and update the PIPP to ensure that program goals are met.

Developing a PIPP is the second Minimum Control Measure (MCM) outlined in the NPDES MS4 General Permit (Permit) which requires the following: *The permittee shall comply with applicable state and local public notice requirements when implementing a public involvement/participation program.*

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

New permittee's PIPP shall be developed and implemented during the first year of coverage under this General Permit. All permittees shall reevaluate the PIPP annually and make revisions as needed. The PIPP shall include, but not be limited to:

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

One of the most important aspects of the PIPP is to offer a variety of participatory events so everyone can find a way to get involved in the decision-making processes associated with the SWMP. Volunteers may be attracted by physical activities such as planting trees, marking inlets and participating in clean-up events; those in business and industry may want to serve on committees, attend meetings and/or workshops, and a significant number of residents may be more comfortable participating from home by updating web sites, doing research, and/or writing articles for newsletters. Extra care will be taken to provide enough digital and/or virtual opportunities for those

MCM #2: Public Involvement / Participation Program (PIPP) (25 Pa. Code §92a.32(a) and 40 CFR §122.34 (b)(2))

individuals that may not have the time or the ability to participate in person via blogs, video-conferencing, and website participation. The challenge for Ephrata Township is encouraging people to participate

Ephrata Township has strong relationships with a variety of environmental organizations and continually works with each one on a variety of water quality initiatives. The methods of routine communication with each of these groups is identified in the table below:

Organization	Methods of Routine Communication
Ephrata Library	Email
Lancaster County Clean Water Partners	Email

Ephrata Township makes all SWMP documents available to the public upon request. The Annual Reports, stormwater infrastructure maps, and written documents associated with the Permit are available to view and download on the municipal website. The public can also view the documents at the municipal offices, and request copies to be delivered by US Mail.

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

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

1) *For ordinances and SOPs, the permittee shall provide notice to the public; provide opportunities for public comment; document and evaluate the public comments; and document the permittee’s responses to the comments prior to finalizing the documents. The permittee shall provide this documentation to PA DEP upon request.*

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

Ephrata Township complies with the procedural requirements of §1601 of the Pennsylvania Second Class Township Code, as amended, prior to adopting or amending any Ephrata Township Ordinance. In the summer of 2017, Ephrata Township made the Pollutant Reduction Plan (PRP) available for a 30-day public review and comment period. The PRP and public review process was advertised in a local newspaper and the PRP was presented at a public meeting. Ephrata Township will continue to make the PRP available for public review and comment as the plan is modified throughout the MS4 Permit term.

MCM #2: Public Involvement / Participation Program (PIPP) (25 Pa. Code §92a.32(a) and 40 CFR §122.34 (b)(2))

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

- 1) The permittee shall solicit public involvement and participation from target audience groups on the implementation of the SWMP. The solicitation can take the form of public meetings or other events. The public shall be given notice in advance of each meeting or event. During the meetings or events, the permittee should present a summary of progress, activities, and accomplishments with implementation of the SWMP, and the permittee should provide opportunities for the public to provide feedback and input. The presentation can be made at specific MS4 events or during any other public meeting. Existing permittees shall conduct at least one public meeting that includes information on SWMP implementation by March 15, 2023; new permittees shall conduct at least one public meeting within 5 years following approval of General Permit coverage.*
- 2) The permittee shall document and report instances of cooperation and participation in MS4 activities; presentations the permittee made to local watershed organizations and conservation organizations; and similar instances of participation or coordination with organizations in the community.*
- 3) The permittee shall also document and report activities in which members of the public assisted or participated in the meetings and in the implementation of the SWMP, including education activities and activities such as cleanups, water quality monitoring, marking storm inlets, or others.*

Ephrata Township regularly solicits public involvement and participation from the TAGs through various methods including through the website, meetings and through partnerships with other organizations. Ephrata Township specifically promotes reporting of suspected illicit discharges on the municipal website.

Ephrata Township staff documents all instances of cooperation with other organizations and participation in MS4 activities on Ephrata Township Participation Log (Appendix 2A). In addition, Ephrata Township documents public participation in meetings and activities on the Public Participation Log (Appendix 2B).

MCM #3: Illicit Discharge Detection & Elimination Program (IDD&E) (25 Pa. Code § 92a.32(a) and 40 CFR §122.34(b)(3))

Illicit discharges are defined as any type of flow found in the MS4 that is not composed entirely of stormwater. These discharges can enter the system through illegal connections, intentional dumping, accidental spills, or through cracks in stormwater pipes. Sewage contamination, a common example of an illicit discharge, can occur when a resident or business owner makes an illegal connection of the sanitary sewer system into the stormwater system. Illicit discharges are a major source of water pollution, occur during dry-weather conditions, and can be much more toxic to stream ecosystems because the pollutant/pathogen load is not diluted by stormwater; discharges resulting from fire-fighting activities and those that are authorized under another NPDES permit are not considered to be illicit. Eliminating illicit discharges into waterways is a key component of Ephrata Township’s strategy to improve water quality.

Developing an IDD&E program is the third Minimum Control Measure (MCM) outlined in the NPDES MS4 General Permit (Permit) which requires Ephrata Township to “develop, implement and enforce a program to detect and eliminate illicit discharges into the permittee’s regulated small MS4”. MCM #3 includes six Best Management Practices (BMPs) Ephrata Township must implement to comply with current regulations. Each BMP is identified below followed by Ephrata Township’s strategy to achieve program compliance.

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

- *Procedures for identifying priority areas. These are areas with a higher likelihood of illicit discharges, illicit connections or illegal dumping. Priority areas may include areas with older infrastructure, a concentration of high-risk activities, or history of water pollution problems.*
- *Procedures for screening outfalls in priority areas. The program shall include dry weather field screening of outfalls for non-stormwater flows, and sampling of dry weather discharges for selected chemical and biological parameters. Test results shall be used as indicators of possible discharge sources.*
- *Procedures for identifying the source of an illicit discharge when a contaminated flow is detected at a regulated small MS4 outfall.*
- *Procedures for eliminating an illicit discharge.*
- *Procedures for assessing the potential for illicit discharges caused by the interaction of sewage disposal systems (e.g., on-lot septic systems, sanitary piping) with storm drain systems.*
- *Mechanisms for gaining access to private property to inspect outfalls (e.g., land easements, consent agreements, search warrants) and for investigating illicit connections and discharges.*
- *Procedures for program documentation, evaluation and assessment. Records shall be kept of all outfall inspections, flows observed, results of field screening and testing, and other follow-up investigation and corrective action work performed under this program.*
- *Procedures for addressing information or complaints received from the public.*

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

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

MCM #3: Illicit Discharge Detection & Elimination Program (IDD&E) (25 Pa. Code § 92a.32(a) and 40 CFR §122.34(b)(3))

Ephrata Township has developed written procedures for each component identified in BMP #1. These procedures are summarized below:

Identifying Priority Areas (Appendix 3A): Ephrata Township has assessed the illicit discharge potential (IDP) of each regulated outfall and has assigned priority areas within the municipality where the likelihood of illicit discharges, illicit connections or illegal dumping is greatest. Ephrata Township conducted this assessment based on information provided in the Center for Watershed Protection’s publication *Illicit Discharge Detection and Elimination- A Guidance Manual for Program Development and Technical Assessments*. This report identifies ten key factors that contribute to the IDP of a regulated outfall (See Figure 3.2), four of which Ephrata Township has used to identify priority areas: Stormwater Outfall Density, Age of Subwatershed Development, Sewer Conversion, and Density of Aging Septic Systems. In addition, Ephrata Township has identified the following land use categories as having a high IDP:

- Automobile Dealers
- Automobile Parking
- Automobile Recyclers & Scrap Yards
- Automobile Repair
- Food Processing
- Gasoline Stations
- Maintenance Depots
- Municipal Fleet Washing
- Nurseries & Garden Centers
- Oil Change Businesses
- Public Works Yards

Screening Outfalls in Priority Areas (Appendix 3B): All stormwater outfalls must be inspected for dry-weather discharges at least once per each 5-year permit term. However, Ephrata Township will inspect the outfalls ranked high annually, inspect outfalls ranked medium twice per the 5-year permit term, and inspect outfalls ranked low at least once during the permit term. Ephrata Township has developed a 5-year inspection schedule and a written procedure for inspecting outfalls and sampling dry-weather flows for chemical and biological parameters that would result from an illicit discharge. During the inspection, municipal staff will conduct simple field tests to determine the temperature, pH, and for the presence of ammonia in any dry-weather flow. If an illicit discharge is suspected, the inspector will act to identify and eliminate the source. If the substance is unidentifiable, then a sample will be sent to a local laboratory for chemical and biological analysis. The following table summarizes Ephrata Township’s field analysis:

Figure 3.1 Ephrata Township Dry-Weather Discharge - Field Analysis

Field-Test Parameters	Normal Range	Outside Normal Range (Indicative of Illicit Discharge)	Possible Source of Illicit Discharge
Temperature	Consistent with groundwater and stream temperatures	Colder or warmer temperature could indicate illicit discharge	Sewage, washwater, tap water, industrial or commercial liquid wastes
pH	6-9	<6 or >9 could indicate illicit discharge	Washwater, industrial or commercial liquid wastes
Ammonia	<1.0mg/l	>1.0mg/l could indicate illicit discharge	Sewage, washwater, industrial or commercial liquid wastes

MCM #3: Illicit Discharge Detection & Elimination Program (IDD&E) (25 Pa. Code § 92a.32(a) and 40 CFR §122.34(b)(3))

Figure 3.2 Defining Discharge Screening Factors in a Community

	Discharge Screening Factors	Defining and Deriving the Factor
1	Past Discharge Complaints and Reports	Frequency of past discharge complaints, hotline reports, and spill responses per sub-watershed. Any sub-watershed with a history of discharge complaints should automatically be designated as having high IDP.
2	Poor Dry Weather Water Quality	Frequency that individual samples of dry weather water quality exceed benchmark values for bacteria, nutrients, conductivity or other predetermined indicators. High risk if two or more instances are found in any given year.
3	Density of Generating Sites or Industrial NPDES Stormwater Permits	Density of more than 10 generating sites or five industrial NPDES storm water sites per square mile indicates high IDP. Density determined by screening business or permit databases
4	Stormwater Outfall Density	Density of mapped storm water outfalls in the sub-watershed, expressed as the average number per stream or channel mile. A density of more than 20 outfalls per stream mile indicates high IDP.
5	Age of Sub-Watershed Development	Defined as the average age of most development in a sub-watershed. High IDP is often indicated for developments older than 50 years. Determined from tax maps and parcel data, or from other known information about neighborhoods.
6	Sewer Conversion	Sub-watersheds that had septic systems but have been connected to the sanitary sewer system in the last 30 years have high IDP.
7	Historic Combined Sewer Systems	Sub-watersheds that were once served by combined sewer system but were subsequently separated have a high IDP.
8	Presence of Older Industrial Operations	Sub-watersheds with more than 5% of its area in industrial sites that are more than 40 years old are considered to have high IDP. Determined from historic zoning, tax maps, and "old-timers."
9	Aging or Failing Sewer Infrastructure	Defined as the age and condition of the sub-watershed sewer network. High IDP is indicated when the sewer age exceeds design life of its construction materials (e.g., 50 years) or when clusters of pipe breaks, spills, or overflows are reported by sewer authorities.
10	Density of Aging Septic Systems	Sub-watersheds with a density of more than 100 older drain fields per square mile are considered to have high IDP. Determined from analysis of lot size outside of sewer service boundaries.

Source: Center for Watershed Protection's Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments.

Identifying the Source of an Illicit Discharge (Appendix 3C): Once an illicit discharge is discovered, municipal staff works to identify the source. Ephrata Township has mapped the stormwater management