MS4 Program Management

Adjusting MS4 Programs

Southwest Pennsylvania Commission (SPC)
Community and Rec Center @ Boyce Matthew Park
Upper St. Clair, PA 15241
June 19th, 2019

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Land Studies

Agenda

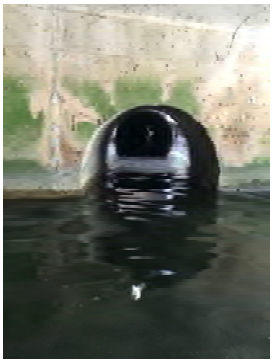
- Introduction and Background
- Permit vs. Policy
- MS4 Permit Focus Areas
- SWMO Updates
- Audits/Inspections
- Questions and Discussion

Adjusting MS4 Programs

Introduction & Background

MS4

Municipal
Separate
Storm
Sewer
System



MS4 Realm: Acronym Heaven

COMMON ACRONYMS

303(d) list	Clean Water Act Section 303(d) List of Water Quality Limited Segments
ACOE	Army Corps of Engineers
BMP	Best Management Practice
CBPRP	Chesapeake Bay Pollutant Reduction Plan
CCD	County Conservation District
CFR	Code of Federal Regulations
COMID	National Hydrography Dataset common identifier code for waterbodies
CWA	Federal Water Pollution Control Act (also known as the Clean Water Act)
ESA	Environmentally Sensitive Area
GI	Green Infrastructure
GIS	Geographic Information System
HHW	Household Hazardous Waste
HOA	Home Owners Association
IDD&E	Illicit Discharge Detection and Elimination
LA	Load Allocation
LID	Low Impact Development
MCM	Minimum Control Measure

…and many more

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Definitions (handout)

IMPORTANT DEFINITIONS

Illicit Discharge Any discharge to an MS4 that is not composed entirely of stormwater, except authorized non-stormwater discharges. Examples of illicit discharges include dumping of motor vehicle fluids, grass clippings and landscape debris, animal wastes, industrial waste/discharges, restaurant wastes, or any other non-stormwater waste. Illicit discharges can be accidental or intentional.

Load Allocation The portion of a surface water's loading capacity that is assigned or allocated to existing and future nonpoint sources and natural quality.

Municipal Separate Storm Sewer
A conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains): (i) Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to surface waters; (ii) Designed or used for collecting or conveying stormwater; (iii) Which is not a combined sewer; and (iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

Municipal Separate Storm Sewershed (MS3)
The land area draining to an individual MS4 outfall.

Water Quality "Problems"

"Clean Water" Laws/Regulations (policy level-why)

1899: Rivers and Harbors Act
Oldest federal environmental law in the United States

1937: PA Act 394 "Clean Streams Law"

1948: Federal Water Pollution Control Act
Legislation calling for the **reduction** of water pollution

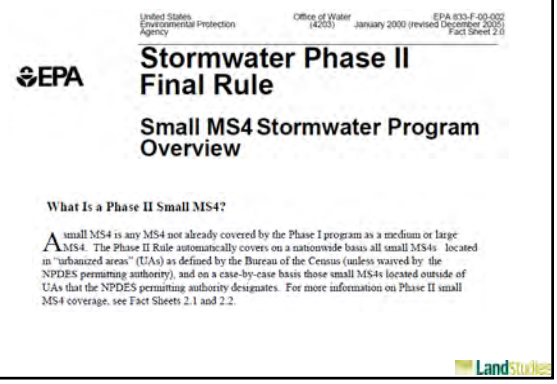
1972: **"Clean Water Act"** (Amendment to the original 1948 legislation)
Significant new language calling for the **control** of water pollution
Created the NPDES

1978: PA Act 167 "Stormwater Management Act"
Addresses accelerated stormwater runoff (flooding problems)
Considered "revolutionary" in its approach

1987: "Water Quality Act" (Amendment to the original 1948 legislation)
Additional language that specifically labeled stormwater a problem with respect to water pollution

1992: TMDL Procedural Regulations established
Total Maximum Daily Load of a pollutant or set of pollutants that a water body can receive while meeting water quality standards (designated uses, etc.)

Small MS4s– Final Rule(s) (procedures level-who, what, where)



United States Environmental Protection Agency | Office of Water (4203) | EPA 833-F-00-002 January 2000 (revised December 2005) Fact Sheet 2.0

EPA

Stormwater Phase II Final Rule

Small MS4 Stormwater Program Overview

What Is a Phase II Small MS4?

A small MS4 is any MS4 not already covered by the Phase I program as a medium or large MS4. The Phase II Rule automatically covers on a nationwide basis all small MS4s located in "urbanized areas" (UAs) as defined by the Bureau of the Census (unless waived by the NPDES permitting authority), and on a case-by-case basis those small MS4s located outside of UAs that the NPDES permitting authority designates. For more information on Phase II small MS4 coverage, see Fact Sheets 2.1 and 2.2.

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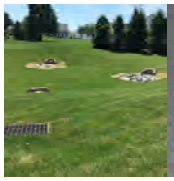
PADEP MS4 Permit for small MS4s (practice level-how)

- "Streamlined" process to meet the federal requirements.
- 25 Pa. Code Ch. 92a



25 Pa. Code Ch. 92a

Ch. 92a DISCHARGE ELIMINATION SYSTEM 25 § 92a.1

CHAPTER 92a. NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMITTING, MONITORING AND COMPLIANCE

§ 92a.1. Purpose and scope.

(a) *Purpose.* The regulatory provisions contained in this chapter implement the NPDES Program by the Department under the Federal Act.

§ 92a.3. Incorporation of Federal regulations by reference.

(a) The Federal NPDES regulations in subsection (b) are incorporated by reference to the extent that these provisions are applicable and not contrary to the law of the Commonwealth. In the event of a conflict between a Federal regulatory provision and a regulation of the Commonwealth, the provision expressly set out in this chapter shall be applied unless the Federal provision is more stringent.

PA MS4s

In Pennsylvania, there are two Large MS4s, no Medium MS4s, and 1,059 Small MS4s.

MS4 – Stormwater Management Programs (SWMPs)

To prevent harmful pollutants from being washed or dumped into MS4s, certain operators are required to obtain NPDES permits and develop stormwater management programs (SWMPs). The SWMP describes the stormwater control practices that will be implemented consistent with permit requirements to minimize the discharge of pollutants from the sewer system.

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PA MS4 Permit Program

In December 2002, DEP issued a General Permit ("PAG-13") for use by MS4s that fall under the National Pollutant Discharge Elimination System (NPDES) Phase II program, requiring the implementation of a stormwater management program for minimizing the impacts from runoff.

MS4 Permits are intended to cover five (5) year periods (permit cycles).

Basic MS4 Permit-SWMP Requirements

Six (6) Minimum Control Measures (MCMs) that must be implemented:

- MCM 1: Public Education & Outreach
- MCM 2: Public Involvement & Participation
- MCM 3: Illicit Discharge & Detection
- MCM 4: Construction Site Runoff Control
- MCM 5: Post-Construction SWM
- MCM 6: Good Housekeeping

"Additional" PADEP MS4 Permit Requirements

----Stream Impairments----

- Total Maximum Daily Load (TMDL)
  - With applicable WLAs
- Metals and/or pH (AMD) PCMs – Appendix A
- Pathogens PCMs – Appendix B
- Priority Organic Compounds PCMs – Appendix C
- Nutrients and Sediment PRP
  - CBPRP – Appendix D
  - General – Appendix E

Acronyms

-AMD	Acid Mine Drainage
-CBPRP	Chesapeake Bay Pollutant Reduction Plan
-PCMs	Pollutant Control Measures
-PRP	Pollutant Reduction Plan
-WLA	Waste Load Allocation

Notes

-Priority Organic Compounds covers a variety of parameters including PCBs and pesticides.

-Nutrients are a general reference to Phosphorus and Nitrogen

Adjusting MS4 Programs

Permit vs. Policy

Permit vs. Policy

Permit: an official document giving someone authorization to do something (allow "someone" to do "something").

Policy: a deliberate system of principles to guide decisions and achieve rational outcomes.

Permit vs. Policy

Policy (Why)

FEDERAL WATER POLLUTION CONTROL ACT

(33 U.S.C. 1251 et seq.)

AN ACT To provide for water pollution control activities in the Public Health Service of the Federal Security Agency and in the Federal Works Agency, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

TITLE I—RESEARCH AND RELATED PROGRAMS

DECLARATION OF GOALS AND POLICY

SEC. 101. (a) The objective of this Act is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. In order to achieve this objective it is hereby declared that, consistent with the provisions of this Act—

(1) it is the national goal that the discharge of pollutants into the navigable waters be eliminated by 1985;

(2) it is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water be achieved by July 1, 1983;

(3) it is the national policy that the discharge of toxic pollutants in toxic amounts be prohibited;

Procedures (Who, When, Where)

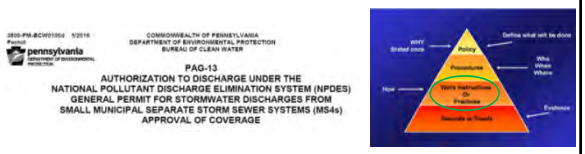
CFR 40

§ 122.1 Purpose and scope.

(a)*Coverage.*

(1) The regulatory provisions contained in this part and parts 123, and 124 of this chapter implement the National Pollutant Discharge Elimination System (NPDES) Program under sections 318, 402, and 405 of the Clean Water Act (CWA), as amended, 33 U.S.C. 1251*et seq.*

Practices (How)

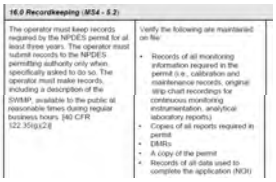


COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER

PAG-13
AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL PERMIT FOR STORMWATER DISCHARGES FROM SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEMS (MS4s) APPROVAL OF COVERAGE

- Six Minimum Control Measures:
  1. Public Education & Outreach
  2. Public Involvement/Participation
  3. Illicit Discharge Detection and Elimination (IDDE)
  4. Construction Site Storm Water Runoff Control
  5. Post-Construction Storm Water Management in New and Re-Development Activities
  6. Pollution Prevention and Good Housekeeping for Municipal Operations

Records or Proofs

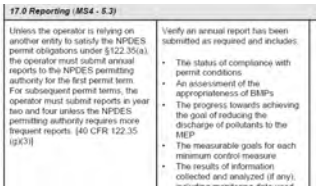


16.0 Recordkeeping (MS4 - 5.2)

The operator must keep records required by the NPDES permit for at least three years. The operator must submit records to the NPDES permitting authority only when specifically asked to do so. The operator must make records, including a description of the SWMP, available to the public at reasonable times during regular business hours. [40 CFR 122.35(g)(2)]

Verify the following are maintained on file:

- Records of all monitoring information required in the permit (i.e., calibration and maintenance records, original strip chart recordings for continuous monitoring instrumentation, analytical laboratory reports)
- Copies of all reports required in permit
- DMRs
- A copy of the permit
- Records of all data used to complete the application (NOI)



17.0 Reporting (MS4 - 5.3)

Unless the operator is relying on another entity to satisfy the NPDES permit obligations under §122.35(a), the operator must submit annual reports to the NPDES permitting authority for the first permit term. For subsequent permit terms, the operator must submit reports in year two and four unless the NPDES permitting authority requires more frequent reports. [40 CFR 122.35 (g)(3)]

Verify an annual report has been submitted as required and includes:

- The status of compliance with permit conditions
- An assessment of the appropriateness of BMPs
- The progress towards achieving the goal of reducing the discharge of pollutants to the MEP
- The measurable goals for each minimum control measure
- The results of information collected and analyzed (if any),

Procedures “Issues” (Waters of the U.S.)

Waters of the United States (WOTUS) Definition

1986/1988 Regulatory Definition of "Waters of the United States"

40 CFR 230.3(s) The term waters of the United States means:

1. All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
2. All interstate waters including interstate wetlands;
3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:
   a. Which are or could be used by interstate or foreign travelers for recreational or other purposes; or
   b. (From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
   c. Which are used or could be used for industrial purposes by industries in interstate commerce;

Waters of the United States (WOTUS) Definition (cont'd)

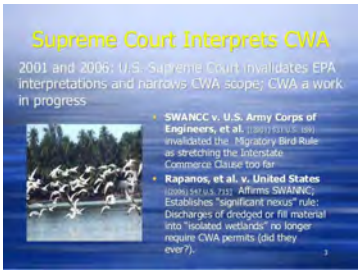
4. All impoundments of waters otherwise defined as waters of the United States under this definition;
5. Tributaries of waters identified in paragraphs (s)(1) through (4) of this section;
6. The territorial sea;
7. Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (s)(1) through (6) of this section; waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR 423.11(m) which also meet the criteria of this definition) are not waters of the United States.

* Waters of the United States do not include prior converted cropland.

WOTUS


In The
Supreme Court of the United States

On Writ Of Certiorari To The
United States Court Of Appeals For The Sixth Circuit



Rapanos vs. U.S. - Supreme Court Decision Summary

Summary of Key Points

The agencies will assert jurisdiction over the following waters:

- **Traditional navigable waters**
- **Wetlands adjacent to traditional navigable waters**
- **Non-navigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months)**
- **Wetlands that directly abut such tributaries**

The agencies will decide jurisdiction over the following waters based on a fact-specific analysis to determine whether they have a significant nexus with a traditional navigable water:

- **Non-navigable tributaries that are not relatively permanent**
- **Wetlands adjacent to non-navigable tributaries that are not relatively permanent**
- **Wetlands adjacent to but that do not directly abut a relatively permanent non-navigable tributary**

The agencies generally will not assert jurisdiction over the following features:

- **Swales or erosional features (e.g., gullies, small washes characterized by low volume, infrequent, or short duration flow)**
- **Ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water**

The agencies will apply the significant nexus standard as follows:

- **A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by all wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical and biological integrity of downstream traditional navigable waters**
- **Significant nexus includes consideration of hydrologic and ecologic factors**

WOTUS definition refinement

WOTUS (Clean Water Rule)

USEPA/ACOE CLEAN WATER RULE (PARTIAL)

Clean Water Rule: Definition of "Waters of the United States" 40 CFR 230.3

§230.3 Definitions.
* * * * *
(o) The term waters of the United States means:
(1) For purposes of the Clean Water Act, 33 U.S.C. 1251 et. seq. and its implementing regulations, subject to the exclusions in paragraph (o)(2) of this section, the term ''waters of the United States'' means:
(i) All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
(ii) All interstate waters, including interstate wetlands;
(iii) The territorial seas;
(iv) All impoundments of waters otherwise identified as waters of the United States under this section;
(v) All tributaries, as defined in paragraph (o)(3)(iii) of this section, of waters identified in paragraphs (o)(1)(i) through (iii) of this section;

WOTUS (Clean Water Rule) (cont'd)

(vii) All waters in paragraphs (o)(1)(vii)(A) through (E) of this section where they are determined, on a case-specific basis, to have a significant nexus to a water identified in paragraphs (o)(1)(i) through (iii) of this section. The waters identified in each of paragraphs (o)(1)(vii)(A) through (E) of this section are similarly situated and shall be combined, for purposes of a significant nexus analysis, in the watershed that drains to the nearest water identified in paragraphs (o)(1)(i) through (iii) of this section. Waters identified in this paragraph shall not be combined with waters identified in paragraph (o)(1)(vi) of this section when performing a significant nexus analysis. If waters identified in this paragraph are also an adjacent water under paragraph (o)(1)(vi), they are an adjacent water and no case-specific significant nexus analysis is required.

WOTUS (Clean Water Rule) (cont'd)

(A) Prairie potholes. Prairie potholes are a complex of glacially formed wetlands, usually occurring in depressions that lack permanent natural outlets, located in the upper Midwest.

(B) Carolina bays and Delmarva bays. Carolina bays and Delmarva bays are ponded, depressional wetlands that occur along the Atlantic coastal plain.

(C) Pocosins. Pocosins are evergreen shrub and tree dominated wetlands found predominantly along the Central Atlantic coastal plain.

(D) Western vernal pools. Western vernal pools are seasonal wetlands located in parts of California and associated with topographic depression, soils with poor drainage, mild, wet winters and hot, dry summers.

(E) Texas coastal prairie wetlands. Texas coastal prairie wetlands are freshwater wetlands that occur as a mosaic of depressions, ridges, intermound flats, and mima mound wetlands located along the Texas Gulf Coast.

WOTUS (Clean Water Rule) (cont'd)

(viii) All waters located within the 100-year floodplain of a water identified in paragraphs (o)(1)(i) through (iii) of this section and all waters located within 4,000 feet of the high tide line or ordinary high water mark of a water identified in paragraphs (o)(1)(i) through (v) of this section where they are determined on a case-specific basis to have a significant nexus to a water identified in paragraphs (o)(1)(i) through (iii) of this section. For waters determined to have a significant nexus, the entire water is a water of the United States if a portion is located within the 100-year floodplain of a water identified in paragraphs (o)(1)(i) through (iii) of this section or within 4,000 feet of the high tide line or ordinary high water mark. Waters identified in this paragraph shall not be combined with waters identified in paragraph (o)(1)(vi) of this section when performing a significant nexus analysis. If waters identified in this paragraph are also an adjacent water under paragraph (o)(1)(vi), they are an adjacent water and no case-specific significant nexus analysis is required.

WOTUS (Clean Water Rule) - Exclusions

(2) The following are not "waters of the United States" even where they otherwise meet the terms of paragraphs (o)(1)(iv) through (viii) of this section.

(i) Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of the Clean Water Act are not waters of the United States.

(ii) Prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other Federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA.

(iii) The following ditches:

(A) Ditches with ephemeral flow that are not a relocated tributary or excavated in a tributary.
(B) Ditches with intermittent flow that are not a relocated tributary, excavated in a tributary, or drain wetlands.
(C) Ditches that do not flow, either directly or through another water, into a water identified in paragraphs (o)(1)(i) through (iii) of this section.

…and more

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WOTUS - lots of misinformation

(2) The following are not "waters of the United States" even where they otherwise meet the terms of paragraphs (o)(1)(iv) through (viii) of this section.

(iv) The following features:

(G) Puddles.

WOTUS (Clean Water Rule) – Exclusions (cont'd)

(iv) The following features (are excluded):

(A) Artificially irrigated areas that would revert to dry land should application of water to that area cease;
(B) Artificial, constructed lakes and ponds created in dry land such as farm and stock watering ponds, irrigation ponds, settling basins, fields flooded for rice growing, log cleaning ponds, or cooling ponds;
(C) Artificial reflecting pools or swimming pools created in dry land;
(D) Small ornamental waters created in dry land;
(E) Water-filled depressions created in dry land incidental to mining or construction activity, including pits excavated for obtaining fill, sand, or gravel that fill with water;
(F) Erosional features, including gullies, rills, and other ephemeral features that do not meet the definition of tributary, non-wetland swales, and lawfully constructed grassed waterways; and
(G) Puddles.

(v) Groundwater, including groundwater drained through subsurface drainage systems.
(vi) Stormwater control features constructed to convey, treat, or store stormwater that are created in dry land.

WOTUS "Confusion"?

Confusing procedures (who, when, where) with practices (how)?

Procedures: Final Rules, regulations, etc.

Practices: Permit(s)

Primary MS4 Permit Requirement

Authorization to Discharge
- "2018 PAG-13" – Discharges Not Authorized (item 6)

"The discharge is not, or will not, result in compliance with an applicable effluent limitation or water quality standard."

The operator must, at a minimum, develop, implement, and enforce a SWMP designed to reduce the discharge of pollutants from the MS4:
- to the maximum extent practicable (MEP),
- to protect water quality, and
- to satisfy the appropriate water quality requirements of the Clean Water Act. [40 CFR 122.34(a)]

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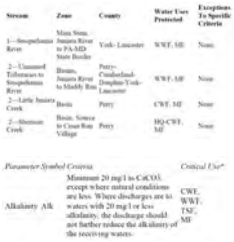
Satisfy Appropriate Water Quality Requirements of the CWA

The "meat" of the requirements…there are three applicable WQ requirements of the CWA:

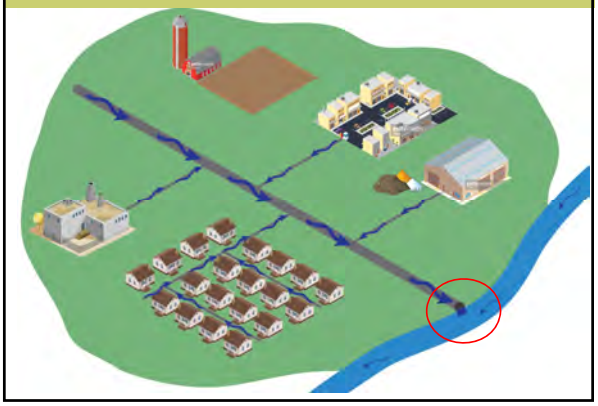
1. Designated Uses
   - States must identify and designate how each waterbody in the state is used.
2. Water Quality Criteria
   - States must set specific numeric criteria and/or narrative criteria necessary to protect each designated use.
3. Anti-degradation Policy
   - Rules (or policies) to protect existing uses and prevent clean waters from being degraded.



Stream	Zone	County	Water Uses Protected	Exceptions To Specific Criteria
1—Susquehanna River	Main Stem, Juniata River to PA-MD State Border	York- Lancaster	WWF, MF	None
2—Unnamed Tributaries to Susquehanna River	Basin, Juniata River to Muddy Run	Perry-Cumberland-Dauphin-York-Lancaster	WWF, MF	None
2—Little Juniata Creek	Basin	Perry	CWF, MF	None
2—Shermans Creek	Basin, Source to Cross Roads Village	Perry	HQ-CWF, MF	None

Parameter Symbol	Criteria	Critical Use*
Alkalinity Alk	Minimum 20 mg/l as $CaCO_3$, except where natural conditions are less. Where discharges are to waters with 20 mg/l or less alkalinity, the discharge should not further reduce the alkalinity of the receiving waters.	CWF, WWF, TSF, MF

The Interface



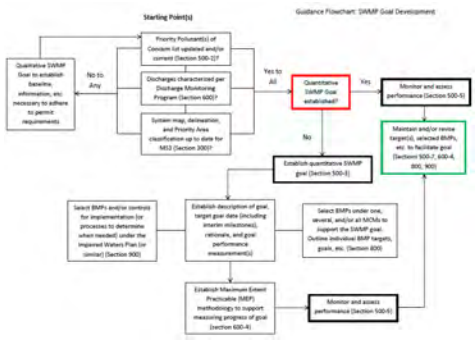
Clean Water Rule confusion – as a "guide"

USEPA Expectations for an MS4 Permit Program

Stormwater Management for Small MS4s…are the following addressed?

- Applicability
- Limitations on Coverage
- Discharges to Water Quality Impaired Waters
- Stormwater Management Program (SWMP)
- Public Education and Outreach (MCM 1)
- Public Involvement/Participation (MCM 2)
- Illicit Discharge Detection & Elimination (MCM 3)
- Construction Site Stormwater Runoff Control (MCM 4)
- Post-Construction Stormwater Management in New Development and Redevelopment (MCM 5)
- Pollution Prevention/Good Housekeeping for Municipal Operations (MCM 6)
- Sharing Responsibility
- Reviewing and Updating SWMPs
- Monitoring
- Recordkeeping
- Reporting

Permit/SWMP Implementation (part of the how)



SWMP Goals

All SWMP goals include the following information:

- description of the goal
- target goal date
- rationale behind the goal
- measurement of the goal (including interim milestones)
- Best Management Practices (BMPs) that will be used to support facilitation of the goal

WOTUS


No. 04-1034

In The
Supreme Court of the United States

JOHN RAPANOS, ET UX., ET AL.,
Petitioners,
v.
UNITED STATES,
Respondent.

On Writ Of Certiorari To The
United States Court Of Appeals For The Sixth Circuit

AMICUS CURIAE BRIEF OF THE CATO INSTITUTE IN SUPPORT OF PETITIONERS

MS4 Permit – "New" Requirements

Some of the "how" could be considered new requirements, but not really…

The MS4 Permit, CWA, Final Rules, regulations, and so on have always required a permittee to address Discharges to Water Quality Impaired Waters.

"Additional" PADEP MS4 Permit Requirements

----Stream Impairments----

- Total Maximum Daily Load (TMDL)
  - With applicable WLAs
- Metals and/or pH (AMD) PCMs – Appendix A
- Pathogens PCMs – Appendix B
- Priority Organic Compounds PCMs – Appendix C
- Nutrients and Sediment PRP
  - CBPRP – Appendix D
  - General – Appendix E

Acronyms

-AMD	Abandoned Mine Drainage
-CBPRP	Chesapeake Bay Pollutant Reduction Plan
-PCMs	Pollutant Control Measures
-PRP	Pollutant Reduction Plan
-WLA	Waste Load Allocation

Notes

-Priority Organic Compounds covers a variety of parameters including PCBs and pesticides.
-Nutrients are a general reference to Phosphorus and Nitrogen

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MS4 Permit – "New" Requirements

Standing Requirement (since Day 1):

Cannot cause and/or contribute to an impairment

Adjusting MS4 Programs

Permit Focus Areas

USEPA Expectations for an MS4 Permit Program

Stormwater Management for Small MS4s…are the following addressed?

- Applicability
- Limitations on Coverage
- Discharges to Water Quality Impaired Waters
- Stormwater Management Program (SWMP)
- Public Education and Outreach (MCM 1)
- Public Involvement/Participation (MCM 2)
- Illicit Discharge Detection & Elimination (MCM 3)
- Construction Site Stormwater Runoff Control (MCM 4)
- Post-Construction Stormwater Management in New Development and Redevelopment (MCM 5)
- Pollution Prevention/Good Housekeeping for Municipal Operations (MCM 6)
- Sharing Responsibility
- Reviewing and Updating SWMPs
- Monitoring
- Recordkeeping
- Reporting

How the MCMs support the SWMP

- Provides tools and mechanisms to help identify if issues or problems arise and avenues for resolution with the intent to reduce the potential for the **MS4 causing an exceedance** to water quality standards.
- Provides tools and mechanisms to help administer approaches with the intent to reduce the **MS4 contributing to an exceedance** to water quality standards.

Illicit Discharge Detection & Elimination (MCM 3)

Field investigations to detect illicit materials before entering the system, in the system, and exiting the system (outfall screening)

Chemical analyses

Tracing (dye, smoke, TV, etc.)

Regulation(s)

MCM 3 is a set of field, administrative, and technical tools.

IDD&E (MCM 3) Base Policy

Still the same…

MCM #3: Illicit Discharge Detection and Elimination (IDD&E)

The following are the requirements for MCM #3 that are included in the Federal Regulations:

- *Develop, implement, and enforce a program to detect and eliminate illicit discharges into the MS4 (40 CFR Part 122.34(b)(3)(i)).*
- *Develop, if not already completed, a storm sewer system map, showing the location of all outfalls and the names and locations of all surface waters of the Commonwealth that receive discharges from those outfalls (40 CFR Part 122.34(b)(3)(ii)(A)).*
- *To the extent allowable under State or local law, effectively prohibit, through ordinance, or other regulatory mechanism, non-stormwater discharges into your storm sewer system and implement appropriate enforcement procedures and actions (40 CFR Part 122.34(b)(3)(ii)(B)).*
- *Develop and implement a plan to detect and address non-stormwater discharges, including illegal dumping, to your system (40 CFR Part 122.34(b)(3)(ii)(C)).*
- *Inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste (40 CFR Part 122.34(b)(3)(ii)(D)).*

IDD&E Plan Adjustment

<u>Authorized Discharges List</u>

Authorized Discharges List (previous)

1. The following are authorized discharges:

   a. Stormwater discharges. This permit authorizes stormwater discharges to surface waters of the Commonwealth from regulated small MS4s, except as excluded in Section 2 below.

   b. Non-stormwater discharges. The following categories of non-stormwater discharges or flows are authorized by this permit unless the permittee or DEP has identified them as significant contributors of pollutants to the regulated small MS4 or its discharges:

      i. discharges or flows from fire fighting activities;
      ii. discharges from potable water sources including dechlorinated water line and fire hydrant flushing;
      iii. irrigation water and landscape drainage;
      iv. diverted stream flows;
      v. uncontaminated pumped ground water;
      vi. uncontaminated water from foundation and footing drains;
      vii. air conditioning condensation;
      viii. springs;
      ix. water from crawl space pumps;
      x. water from lawn watering;
      xi. individual residential car washing;
      xii. flows from riparian habitats and wetlands; and
      xiii. dechlorinated swimming pool discharges. (clean, no filter backwash)

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Authorized Discharges List (current)

DISCHARGES AUTHORIZED BY THIS GENERAL PERMIT

Except where specifically prohibited under the "Discharges Not Authorized by this General Permit" section, this General Permit authorizes the discharge of stormwater to surface waters from regulated small MS4s. In addition, the following non-stormwater discharges are authorized by this General Permit as long as such discharges do not cause or contribute to pollution as defined in Pennsylvania's Clean Streams Law.

1. Discharges or flows from firefighting activities.
2. Discharges from potable water sources including water line flushing and fire hydrant flushing, if such discharges do not contain detectable concentrations of Total Residual Chlorine (TRC).
3. Non-contaminated irrigation water, water from lawn maintenance, landscape drainage and flows from riparian habitats and wetlands.
4. Diverted stream flows and springs.
5. Non-contaminated pumped ground water and water from foundation and footing drains and crawl space pumps.
6. Non-contaminated HVAC condensation and water from geothermal systems.
7. Residential (i.e., not commercial) vehicle wash water where cleaning agents are not utilized.
8. Non-contaminated hydrostatic test water discharges, if such discharges do not contain detectable concentrations of TRC.

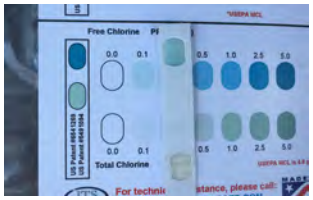
Fire Hydrant Flushing

Previous:

ii. discharges from potable water sources including dechlorinated water line and fire hydrant flushing;

Current:

2. Discharges from potable water sources including water line flushing and fire hydrant flushing, if such discharges do not contain detectable concentrations of Total Residual Chlorine (TRC).



Residential Car Washing

Previous:

xi. individual residential car washing;

Current:

7. Residential (i.e., not commercial) vehicle wash water where cleaning agents are not utilized.

Swimming Pools

Previous:

xiii. dechlorinated swimming pool discharges. (clean, no filter backwash)

Current:

????

Swimming Pools

DRAINING A POOL

At the end of the season, it's time to drain your pool. But where do you put all that water? Because your pool water contains sanitizing chemicals like chlorine or salt, it is not safe to dump it down the storm sewer. If you do, those chemicals will end up in our streams and rivers, polluting the water, killing fish and other aquatic life. This factsheet describes good pool maintenance practices to use in order to protect water quality and enhance quality of life in the borough.

Keep in Mind

- Only sanitary sewers take waste-water (including pool water) to a treatment facility. Discharging to a sanitary sewer is the preferred method.
- It is not just the water quality that is a concern — think about the sheer volume of water in your pool and how that could impact your neighbor, the sewer system, and the environment.
- The maximum pump rate is 50 gallons per minute (GPM). This will help prevent treatment plant overload and sewer back-up into your house.

- If this is not an option, you may dispose of the water on your property. However, the water should only be released after you stop adding treatment chemicals and hold the water in the pool for at least one week while chlorine levels drop.
- Use a pool test kit to measure the chlorine level prior to draining to make sure levels are less than 0.1 mg/l free chlorine. A longer holding period may be necessary if the level is higher than that.

Dry Weather Outfall Screening

Changes really only apply for new permittees…

Previous:

BMP #4: Following the IDD&E program created pursuant to BMP #1, the permittee shall conduct outfall field screening, identify the source of any illicit discharges, and remove or correct any illicit discharges using procedures developed under BMP #1.

Measurable Goals: For new permittees, all of the identified regulated small MS4 outfalls shall be screened during Dry Weather on at least two different occasions during the permit coverage term. In each permit coverage year, at least forty percent of the total number of outfalls should be screened.

For renewal permittees, each of the identified regulated small MS4 outfalls shall be screened at least once during each permit coverage term. For areas where past problems have been reported or known sources of dry weather flows occur on a continual basis, outfalls shall be screened annually.

Current:

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

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However (for renewal permittees):

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

Sampling when screening

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

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

Observation Points

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

Additional IDD&E Consideration

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

Which is under MCM #6…

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

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Post-Construction Stormwater Management (MCM 5)

---System (MS4) protection mechanism---

Standards and performance criteria for structural and non-structural BMPs treating stormwater associated with new development (and re-development)

Inspections, administration, and enforcement

Regulation(s)

MCM 5 is primarily a set of engineering-based tools related to performance and supported by administrative tools to help protect your system.

PCSM (MCM 5) Base Policy

Still the same…

The following are the requirements for MCM #5 that are included in the Federal Regulations:

- *Develop, implement, and enforce a program to address stormwater runoff from new development and redevelopment projects that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale, that discharge into your small MS4. Your program shall ensure that controls are in place that would prevent or minimize water quality impacts (40 CFR Part 122.34(b)(5)(i)).*
- *Develop and implement strategies which include a combination of structural and/or non-structural best management practices (BMPs) appropriate for your community (40 CFR Part 122.34(b)(5)(ii)(A)).*
- *Use an ordinance or other regulatory mechanism to address post-construction runoff from new development and redevelopment projects to the extent allowable under State, Tribal or local law (40 CFR Part 122.34(b)(5)(ii)(B)).*
- *Ensure adequate long-term operation and maintenance of BMPs (40 CFR Part 122.34(b)(5)(ii)(C)).*

PCSM Plan Reinforcement

BMP O&M

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

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

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

PCSM Plan Recommendations

OPERATION AND MAINTENANCE VERIFICATION FORM
DETENTION BASINS

1. Transcribe the following information from your notification letter and make corrections as necessary:

Permit No.: _____
BMP Location: _____
Responsible Party: _____
Phone Number: _____ **Email:** _____
Responsible Party Address: _____
Number Street Name & Suffix City/Zip

☐ *Check here for Address or phone number change*

2. Using the Table below, please describe the inspections and maintenance activities that have been conducted during the permit year (March 16 – March 15), and date(s) maintenance was performed. Under "Result's of Inspection," indicate whether maintenance was required based on each inspection, and if so, what type of maintenance. If maintenance was required, provide the date maintenance was conducted and a description of the maintenance. ***REFER TO THE BACK OF THIS SHEET FOR MORE INFORMATION DESCRIBING TYPICAL MAINTENANCE INDICATORS AND MAINTENANCE ACTIVITIES.*** *If no maintenance was required based on the inspection results, state "no maintenance required."*

What to Look For?	Date Inspected	Results of Inspection: Work Needed? (Yes/No)	Date Maintenance Completed and Description of Maintenance Conducted
Accumulation of Sediment, Litter, Grease			
Standing Water			

LandStudies

PCSM Plan Recommendations

PCSM Title Block Information

INDIVIDUAL BMP INFORMATION			
BMP Name:		BMP #:	
BMP Description/Type:		Acres treated:	
BMP Length (ft) (if applicable):		Imp. acres treated:	
BMP Area (ac):		Lifecycle (yrs):	
BMP Depth (ft):		Other:	
Vol. of stormwater treated (cf):			
Vol. reduction (cf) (if applicable):			

Other Information that should already be somewhere else on the title page, or should be added:

- NPDES Permit # (if applicable)
- Site Location (Address)
- Owner Name
- Owner Address
- Owner Phone #
- Watershed
- Receiving Waterbody
- Borough Outfall #

O&M Agreements

OPERATION AND MAINTENANCE (O & M) AGREEMENT
STORMWATER MANAGEMENT FACILITIES

THIS AGREEMENT, made and entered into this _____ day of _____, 20___, by and between _____, (hereinafter the "Landowner"), and Lititz Borough, Lancaster County, Pennsylvania, (hereinafter "Borough");

WITNESSETH

WHEREAS, the Landowner is the owner of certain real property as recorded by deed in the land records of Lancaster County, Pennsylvania, Deed Book _____ at page _____, (hereinafter "Property").

WHEREAS, the Landowner is proceeding to build and develop the Property; and

WHEREAS, the SWM FACILITIES Operation and Maintenance (O & M) Plan approved by the Borough (hereinafter referred to as the "O & M Plan") for the property identified herein, which is attached hereto as Appendix A and made part hereof, as approved by the Borough, provides for management of stormwater within the confines of the Property through the use of Stormwater Management Best Management Practices (BMPs); and

WHEREAS, the Borough, and the Landowner, his successors and assigns, agree that the health, safety, and welfare of the residents of the Borough and the protection and maintenance of water quality require that on-site SWM Facilities be constructed and maintained on the

O&M Agreements ("Plans")

O&M Agreements ("Plans")

1.4 Defined Parameters

There are certain operation and maintenance notes found in the PCSM Plan and certain stormwater management elements present that do not have maintenance notes and require better defined parameters. This section of the BMP O&M Plan defines those parameters and thresholds as follows:

- Removal of Accumulation of Debris: Debris (landscape waste, trash, and similar) that accumulates enough to partially block and/or settle directly in front of a pipe opening will be considered the threshold for removal.
- Major Storm Event: A major storm event is considered any continuous rain event that exceeds 3" of rain for a 24-hour period. Weather Underground is the reference data for determining amount of and/or extent of time for a rain event.
- Maintain Access Surface in Good Condition (Open Channel Swale): the surface areas of the open channel swale are considered in good condition when erosion is not observed and specified turf exceeds 90% coverage and weeds do not exceed 20% coverage based on visual observations.
- Erosion: an area will be considered eroded when visual observations reveal sediment deposition or rills/gullies.

O&M Agreements ("Plans")

3.3 Annual Maintenance Schedule

The following table reflects the annual maintenance schedule of the PCSM BMPs and stormwater management facilities. This schedule does not capture special maintenance activities (as noted in the previous section) that may be required as a result of an inspection or monthly monitoring.

	Soil Test	Mow Basin/ Forebays	Herbicide Applications	Clean out silt and/or sediment	"Snout" Cleaning	Remove trash, debris, etc.	Replenish Mulch Media
January						X	
February						X	
March	X			X		X	X
April		X				X	
May			X		X	X	
June						X	
July						X	
August			X			X	
September						X	
October			X	X		X	
November		X				X	
December						X	

Figure 3 Annual Maintenance Schedule

O&M Agreements ("Plans")

Introduction to Design and Maintenance Considerations for SNOUT® Stormwater Quality Systems

Background:

The SNOUT system from Best Management Products, Inc. (BMP, Inc.) is based on a vented hood that can reduce floatable trash and debris, free oils, and other solids from stormwater discharges. In its most basic application, a SNOUT hood is installed over the outlet pipe of a catch basin or other stormwater quality structure which incorporates a deep sump (see Installation Drawing). The SNOUT forms a baffle in the structure which collects floatable debris and free oils

Maintenance Recommendations:

- Monthly monitoring for the first year of a new installation after the site has been stabilized.
- Measurements should be taken after each rain event of .5 inches or more, or monthly, as determined by local weather conditions.
- Checking sediment depth and noting the surface pollutants in the structure will be helpful in planning maintenance.
- The pollutants collected in SNOUT equipped structures will consist of floatable debris and oils on the surface of the captured water, and grit and sediment on the bottom of the structure.

Easements

"Additional" PADEP MS4 Permit Requirements

----Stream Impairments----

- Total Maximum Daily Load (TMDL)
  - With applicable WLAs
- Metals and/or pH (AMD) PCMs – Appendix A
- Pathogens PCMs – Appendix B
- Priority Organic Compounds PCMs – Appendix C
- Nutrients and Sediment PRP
  - CBPRP – Appendix D
  - General – Appendix E

Acronyms

-AMD	Abandoned Mine Drainage
-CBPRP	Chesapeake Bay Pollutant Reduction Plan
-PCMs	Pollutant Control Measures
-PRP	Pollutant Reduction Plan
-WLA	Waste Load Allocation

Notes

-Priority Organic Compounds covers a variety of parameters including PCBs and pesticides.
-Nutrients are a general reference to Phosphorus and Nitrogen

LandStudies

Delineated Sewersheds (MS3s)

Primary MS4 Permit Requirement

Authorization to Discharge
- "2018 PAG-13" – Discharges Not Authorized (item 6)

"The discharge is not, or will not, result in compliance with an applicable effluent limitation or water quality standard."

Standing Requirement (since Day 1):

Cannot cause and/or contribute to an impairment

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Monitoring

Parameter Loading Calculations (Simple Method)

Parameter: Total Suspended Solids (TSS)

L=0.226 x R x C x A

Lititz Borough (Spring 2018)

L = annual load (lbs)
0.226 = conversion factor
R = annual runoff (inches) and R = P x P_j x R_v P = annual rainfall (in) = 42.81
C = pollutant concentration (mg/L) P_j = fraction of rainfall events that produce runoff (usually 0.9)
A = area (acres) R_v = runoff coefficient and R_v = 0.05 + (0.9 x I_a) I_a = % impervious area draining to the outfall (in decimals)

MS3 (Outfall)	A (ac)	I_a	R_v	P_j	R (in)	factor	C (mg/L)	L (lbs)
100 (100P)	2189.0	0.15	0.185	0.66	5.227101	0.226	51.000	11881.9222
109 (109P)	2.8	0.65	0.635	0.90	24.465915	0.226	3.000	121.6445294
113 (113)	1.1	0.85	0.815	0.95	33.1456425	0.226	12.000	98.88006871
114 (114)	9.1	0.75	0.725	0.90	27.933525	0.226	12.000	689.3770502
118 (118P)	1.6	0.55	0.545	0.95	22.1648775	0.226	40.000	320.5927882
120 (120P)	140.0	0.50	0.5	0.90	19.2645	0.226	12.000	7314.34536
123 (123)	5.4	0.80	0.77	0.90	29.66733	0.226	9.000	325.8540858
125 (125P)	7.5	0.65	0.635	0.80	21.74748	0.226	2.500	92.1549465

Adjusting MS4 Programs

SWMO Updates

Ordinance Checklist

CHECKLIST		
Ordinance Provision	**2013 Requirement**	**2022 Requirement**
1. **Article I – General Provisions**. Does the ordinance contain sections for Short Title, Statement of Findings, Purpose, Statutory Authority, Applicability, Repealer, Severability, Compatibility with Other Requirements, Erroneous Permit, or otherwise these concepts are addressed in the ordinance in a manner generally consistent with DEP's Model Stormwater Management Ordinance?	☐	☐
Does the ordinance contain a section for Waivers?		☐
Comments:		
2. **Article II – Definitions**. Does the ordinance include definitions for all critical terms used in the ordinance, including but not limited to Earth Disturbance Activity, Land Development, Stormwater, Best Management Practice, Municipality, and Waters of the Commonwealth?	☐	☐
Comments:		

Article I Recommendations

Section 102. STATEMENT OF FINDINGS

B. A comprehensive program of SWM, including reasonable regulation of development and activities causing accelerated runoff and based on the concepts of Low Impact Development (LID), is fundamental to the public health, safety, welfare, and the protection of the people of Lititz Borough and all the people of the Borough and all of the people of the Commonwealth, their resources, and the environment.

Article I Recommendations

Section 113. MS4 PROTECTION

Any person or entity owning or occupying a premises through which the MS4 passes, or conducts activities subject to this ordinance in which the MS4 passes or receives drainage from the site in which the activities are subject to this ordinance, shall:

A. Keep and maintain that part of the premises reasonably free of trash, debris, sediment, and other obstacles which may pollute, contaminate, or retard the flow of water to or through the MS4.

B. Maintain existing structures within or adjacent to the MS4 so that those structures will not become a hazard to the use, function, or physical integrity of the MS4.

C. Protect inlets or other entry points to the MS4 to the maximum extent practicable in which activities, equipment, or materials could result in the discharge of a pollutant or a non-stormwater discharge.

Article I Recommendations

Section 114. REDUCTION OF POLLUTANTS IN STORMWATER

Any person or entity engaged in activities which may result in discharges to the MS4 shall, to the maximum extent practicable, undertake all measures to reduce the risk of non-stormwater discharges and polluted discharges. The following requirements shall apply:

A. Every person or entity undertaking an activity or use of a premise that may cause contribute to stormwater pollution or contamination, illicit discharges, or non-stormwater discharges to the MS4 shall implement structural and/or non-structural BMPs to reduce or prevent a polluted discharge. BMPs shall be maintained routinely throughout the life of the activity.

Article I Recommendations

Section 115. WAIVERS

If the Borough determines that any requirement under this Ordinance cannot be achieved for a particular regulated activity, the Borough may, after an evaluation of alternatives, approve measures other than those in this Ordinance, subject to the following:

A. Waivers or modifications of the requirements of this Ordinance may be approved by the Borough if enforcement will exact undue hardship because of peculiar conditions pertaining to the land in question, provided that the modifications will not be contrary to the public interest and that the purpose of the Ordinance is preserved. Cost or financial burden shall not be considered a hardship. Modification may be considered if an alternative standard or approach will provide equal or better achievement to the Maximum Extent Practicable of the purpose of the Ordinance. A request for modifications shall be in writing and accompany the Stormwater Management Site Plan submission. The request shall provide the facts on which the request is based, the provision(s) of the Ordinance involved and the proposed modification.

B. No waiver or modification of any regulated stormwater activity involving earth

Article II Recommendations

Added definitions…

Illicit Discharge - means any discharge to the MS4 that is not composed entirely of stormwater or polluted stormwater, except for discharges allowed under an NPDES Permit, discharges conditionally allowed under the MS4 Permit, and discharges authorized by the Ordinance as set forth in Section 801.D.

Municipal Separate Storm Sewer System (MS4) - All separate storm sewers that are defined as "large" or "medium" or "small" municipal separate storm sewer systems pursuant to 40 CFR §§ 122.26(b)(18), or designated as regulated under 40 CFR § 122.26(a)(1)(v).

National Pollution Discharge Elimination System (NPDES) - A permit issued under 25 Pa. Code Chapter 92a (relating to National Pollutant Discharge Elimination System permitting, monitoring and compliance) for the discharge or potential discharge of pollutants from a point source to surface waters.

Stormwater Management Program (SWMP) - means a written description of the specific runoff management measures and programs, including BMPs, that the Borough will implement to comply with the MS4 Permit and ensure that polluted stormwater discharges are reduced to the maximum extent practicable and do not cause or contribute to a violation of water quality regulations and standards. A copy of the currently applicable SWMP is kept on file at the Borough.

Ordinance Checklist

3.	**Article III – Stormwater Management Standards**. Does the ordinance require or include:		
a.	Preparation and implementation of a stormwater management site plan, unless exempted, and regulated activities may not commence until written approval is issued?	☐	☐
b.	BMPs consistent with DEP's Chapter 102 and E&S Manual?	☐	☐
c.	Notification of adjacent property owners when stormwater flows may be altered on adjacent property?	☐	☐
d.	Design standards directly or by reference, including the design storm volumes to be used in the analysis of peak flows.	☐	☐
e.	A standard earth disturbance area, no greater than one acre, for which E&S requirements including rate and volume controls consistent with Chapter 102 apply?	☐	☐
f.	Exemptions for certain activities and an explanation of the municipality's authority to deny or revoke exemptions?	☐	☐
g.	Use of green infrastructure and low impact development practices?	☐	☐
h.	Acceptable methods to determine pre- and post-development runoff volumes?	☐	☐
i.	Specification of the post-development peak discharge rates for areas covered and not covered by a release rate map in an approved Act 167 Plan?	☐	☐

Ordinance Checklist

4.	**Article IV – Stormwater Management Site Plan Requirements**. Does the ordinance require or include:		
a.	Specification of minimum requirements for a satisfactory stormwater management site plan consistent with DEP's Model Stormwater Management Ordinance?	☐	☐
b.	Submission of an E&S control plan to the appropriate state or county approval authority?	☐	☐
c.	The number of site plans needed and to whom the plans need to be submitted?	☐	☐
d.	Procedures for municipal review of site plans, modifications of plans, and resubmission of disapproved plans?	☐	☐
e.	Specification of the term of approval for site plans?	☐	☐
f.	Submission of as-built plans and certificates of completion for BMPs?	☐	☐

Riparian Buffers/Corridors

Section 305. Riparian Buffers

A. In order to protect and improve water quality, a Riparian Buffer Easement shall be created and recorded as part of any subdivision or land development that encompasses a Riparian Buffer.

B. Except as required by Chapter 102, the Riparian Buffer Easement shall be measured to be the greater of the limit of the 100 year floodplain or a minimum of 35 feet from the top of the streambank (on each side).

C. Minimum Management Requirements for Riparian Buffers.

1. Existing native vegetation shall be protected and maintained within the Riparian Buffer Easement.

2. Whenever practicable invasive vegetation shall be actively removed and the Riparian Buffer Easement shall be planted with native trees, shrubs and other vegetation to create a diverse native plant community appropriate to the intended ecological context of the site.

D. The Riparian Buffer Easement shall be enforceable by the municipality and shall be recorded in the appropriate County Recorder of Deeds Office, so that it shall run with the land and shall limit the use of the property located therein. The easement shall allow for the continued private ownership and shall count toward the minimum lot area required by Zoning, unless otherwise specified in the municipal Zoning Ordinance.

E. Any permitted use within the Riparian Buffer Easement shall be conducted in a manner that will maintain the extent of the existing 100-year floodplain, improve or maintain the stream stability, and preserve and protect the ecological function of the floodplain.

F. The following conditions shall apply when public and/or private recreation trails are permitted within Riparian Buffers:

1. Trails shall be for non-motorized use only.

2. Trails shall be designed to have the least impact on native plant species and other sensitive environmental features.

G. Septic drainfields and sewage disposal systems shall not be permitted within the Riparian Buffer Easement and shall comply with setback requirements established under 25 Pa. Code Chapter 73.

SWMO organizational recommendations

ARTICLE III - STORMWATER MANAGEMENT STANDARDS

Section 301 - General Requirements
Section 302 - Volume Controls
Section 303 - Rate Controls
Section 304 - Stormwater Management Performance Standards
Section 305 - Calculation Methodology
Section 306 - Riparian Corridors
Section 307 - Erosion and Sediment Pollution Control
Section 308 - Wetlands
Section 309 - Easements

ARTICLE IV - STORMWATER MANAGEMENT SITE PLAN REQUIREMENTS

Section 401 - General Requirements
Section 402 - Drafting Standards
Section 403 - SWM Site Plan Information
Section 404 - Additional Information
Section 405 - Supplemental Information
Section 406 - Pre-Application Meeting
Section 407 - SWM Site Plan Submission
Section 408 - Borough Review
Section 409 - Revision of Plans
Section 410 - Pre-Construction Meeting and Plan Recordation
Section 411 - Authorization to Construct and Term of Validity
Section 412 - Certificate of Completion
Section 413 - Record Plans

ARTICLE V - SMALL PROJECTS AND EXEMPTIONS

Section 501 - Exemptions from Plan Submission Requirements
Section 502 - Small Projects
Section 503 - Additional Provisions for Small Projects

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Small Projects Guide

Small Project Guidance Document and Worksheets

Introduction

If you are considering a relatively small construction project on your property that creates new impervious area and you need to manage the stormwater that is generated, this document will guide you through the appropriate process required by the Borough. Some general background information is provided below, prior to reviewing the necessary requirements for the Borough.

Step 1: Prepare a Site Plan (see Page 7)

☐ Minimum 8.5 x 11 inch site plan that depicts the information required in the checklist and under the instructions and examples section for Step 1 on Page 7.

Step 2: Determine the amount of proposed impervious area for your project (see Page 8)

Enter the total proposed new impervious area for your project into the following table:

PROPOSED IMPERVIOUS AREA					
Surface	Length (ft)	x	Width (ft)	=	Impervious Area (ft²)
Buildings/Structures		x		=	
Driveway/Patios/ Walkways/Other		x		=	
Total Proposed Impervious Surface Area (Sum of all impervious areas)					

Small Projects Guide (cont'd)

Step 4: Determine the review/approval process required for your project (see Page 9)

Select the appropriate option based on the calculated under Step 3 for total impervious surface area.

☐ *Option 1*	☐ *Option 2*	☐ *Option 3*
Total new and cumulative impervious surface area is less than or equal to 500 ft²	Total new and cumulative impervious area is more than 500 ft² and less than 2,000 ft²	Total new and cumulative impervious surface area is greater than 2,000 ft²
STOP!	Continue on to Step 5	**STOP!**
Complete the Exemption/Small Project Application (Appendix 4 of the Stormwater Management Ordinance), sign the Acknowledgement, attach this document and site plan, and return to the Borough.	Your project is considered a Small Project.	Your project does not qualify for an exemption or is not considered a Small Project. A Stormwater Management (SWM) Site Plan will be required.

Step 7: Determine the remaining stormwater runoff to be managed (see Page 14)

VOLUME OF RUNOFF REMAINING TO BE MANAGED				
Total Runoff (ft³) (from Step 5)	-	Stormwater Credits (from Step 6)	=	Remaining Runoff (ft³)
	-		=	

☐ Remaining runoff > 0 ft³, continue to Step 8.

☐ Remaining runoff = 0 ft³, skip Step 8 and go to Step 9.

Small Projects Guide (cont'd)

Sizing Rain Gardens:
The rain garden would be required to be sized to accommodate the net cubic feet to be managed. The following sizing chart assumes a 6 inch ponding depth rain garden. Round up your volume to be managed to match the chart.

Rain Garden Sizing Chart									
Stormwater Volume to be Managed (ft^3)	12.5	25	50	75	100	125	150	175	200
Rain Garden Required Size (ft^2)	6	14	36	59	82	106	130	154	178

Sizing Infiltration Trenches:
The infiltration trench would be required to be sized to accommodate the net cubic feet to be managed. The following sizing chart assumes a 2 foot wide trench with a depth of 2 feet:

Infiltration Trench Sizing Chart									
Stormwater Volume to be Managed (ft^3)	12.5	25	50	75	100	125	150	175	200
Infiltration Trench Required Length (ft)	8	16	31	47	63	78	94	109	125

Ordinance Checklist

5.	**Article V – Operation and Maintenance**. Does the ordinance require or include:		
a.	Enumeration of stormwater BMPs as permanent real estate appurtenances that must be recorded as deed restrictions or conservation easements that run with the land?	☐	☐
b.	Recording of the O&M Plan as a restrictive deed covenant that runs with the land?	☐	☐
c.	Enforcement by the municipality for failure to perform O&M?	☐	☐
d.	Prior to final approval of the Site Plan, the property owner must sign and record an O&M agreement?	☐	☐
e.	If the owner fails to maintain the BMPs, the municipality may conduct the maintenance and charge the owner fees?	☐	☐
f.	A financial guarantee for timely installation and proper construction of BMPs or facilities specified in the Site Plan?	☐	☐

O&M Verification Forms

Section 606. O&M VERIFICATION FORMS

A. The Borough is subject to the terms and conditions of an issued MS4 Permit. One condition included in the permit requires the Borough to ensure stormwater management facilities and BMPs are operating as intended/designed and maintained as required. To meet this condition, the Borough requires the completion and return of an O&M Verification Form from stormwater management facility and BMP owners annually verifying inspections and maintenance is occurring.

Ordinance Checklist

6.	**Article VI – Fees and Expenses**. Does the ordinance indicate that a review fee may be required for a Site Plan to include administrative costs, review costs, attendance at meetings and inspections?	☐	☐

7.	**Article VII – Prohibitions**. Does the ordinance require or include:		
a.	A general prohibition on non-stormwater discharges from entering the municipal separate storm sewer system	☐	☐
b.	Authorized and Non-Authorized Stormwater Discharges:		
	Consistent with the PAG-13 General Permit effective on March 16, 2013 ("General Permit Coverage and Limitations")	☐	
	Consistent with the PAG-13 General Permit effective on March 16, 2018 ("Discharges Authorized by this General Permit")		☐
c.	A statement that roof drains and sump pumps shall discharge to infiltration or vegetative BMPs wherever feasible?	☐	☐
d.	A prohibition on altering BMPs, facilities or structures that were installed under the ordinance without written approval of the municipality?	☐	☐

Prohibitions (Authorized Discharge List)

DISCHARGES AUTHORIZED BY THIS GENERAL PERMIT

Except where specifically prohibited under the "Discharges Not Authorized by this General Permit" section, this General Permit authorizes the discharge of stormwater to surface waters from regulated small MS4s. In addition, the following non-stormwater discharges are authorized by this General Permit as long as such discharges do not cause or contribute to pollution as defined in Pennsylvania's Clean Streams Law.

1. Discharges or flows from firefighting activities.
2. Discharges from potable water sources including water line flushing and fire hydrant flushing, if such discharges do not contain detectable concentrations of Total Residual Chlorine (TRC).
3. Non-contaminated irrigation water, water from lawn maintenance, landscape drainage and flows from riparian habitats and wetlands.
4. Diverted stream flows and springs.
5. Non-contaminated pumped ground water and water from foundation and footing drains and crawl space pumps.
6. Non-contaminated HVAC condensation and water from geothermal systems.
7. Residential (i.e., not commercial) vehicle wash water where cleaning agents are not utilized.
8. Non-contaminated hydrostatic test water discharges, if such discharges do not contain detectable concentrations of TRC.

Prohibitions (Illicit Discharges Language)

B. Illicit Discharges

1. Except as provided in Section 801.E, it is unlawful for any person or entity to cause a non-stormwater discharge to the MS4.
2. It is unlawful for any person or entity to cause either individually or jointly any discharge into or from the MS4 that results in or contributes to a violation of the MS4 Permit, including the discharge of a pollutant.
3. Any person or entity that causes a non-stormwater discharge or a discharge into or from the MS4 that results in or contributes to a violation of the MS4 Permit, including the discharge of a pollutant, is subject to the enforcement provisions of Section 902.

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Ordinance Checklist

8.	**Article VIII – Enforcement and Penalties**. Does the ordinance require or include:		
a.	A provision authorizing right-of-entry to inspect BMPs and facilities regulated by the ordinance?	☐	☐
b.	A specification of inspection frequencies of BMPs and facilities regulated by the ordinance by the landowner, owner's designee or municipality?	☐	☐
c.	Transmission of written reports concerning inspections to the municipality?		☐
d.	A statement that it is unlawful for a person to undertake any regulated activity except as provided in an approved Site Plan or otherwise exempted?	☐	☐
e.	Identification of reasons for a municipality's suspension or revocation of any approval or permit, and procedures to reinstate a suspended approval?	☐	☐
f.	Specification of penalties for violations of the ordinance?	☐	☐
g.	Appeal procedures?	☐	☐

Enforcement

B. **ENFORCEMENT RESPONSE**

The enforcement officer will be responsible for categorizing and/or tracking the categorization of a violation and/or failure to comply with any provisions of this Ordinance. The enforcement officer determines if a violation is considered repetitive, or a violation that is similar in nature to a previously identified violation. Lititz Borough has established multiple enforcement levels and corresponding actions as a response for failure to comply and/or a violation of any provision of this Ordinance, including illegal dumping and illicit discharges/connections.

I. ENFORCEMENT LEVELS

1. Enforcement is applied in numerical order of the enforcement plan levels for a violation:
   a. Level 1 – Educational outreach and voluntary compliance encouragement
   b. Level 2 – A Notice of Violation (NOV) is issued
   c. Level 3 – A second NOV is issued and includes a monetary penalty of not less than One Hundred ($100) dollars and not more than Six Hundred ($600) dollars (first-time Level 3 enforcement)
   d. Civil Litigation

Inspections (Model Ordinance language)

Section 802. Inspection

The landowner or the owner's designee (including the Municipality for dedicated and owned facilities) shall inspect SWM BMPs, facilities and/or structures installed under this Ordinance according to the following frequencies, at a minimum, to ensure the BMPs, facilities and/or structures continue to function as intended:

1. Annually for the first 5 years.
2. Once every 3 years thereafter.
3. During or immediately after the cessation of a 10-year or greater storm.

Inspections should be conducted during or immediately following precipitation events. A written inspection report shall be created to document each inspection. The inspection report shall contain the date and time of the inspection, the individual(s) who completed the inspection, the location of the BMP, facility or structure inspected, observations on performance, and recommendations for improving performance, if applicable. Inspection reports shall be submitted to the Municipality within 30 days following completion of the inspection.

Inspections ("alternate" language)

B. The following shall be addressed in the O & M Plan:

1. Description of maintenance requirements, including, but not limited to, the following:

a. Regular inspection of the SWM facilities. To assure proper implementation of BMPs, maintenance and care SWM BMPs should be inspected by a qualified person, which may include the landowner, or the owner's designee (including the municipality for dedicated and owned facilities), according to the following minimum frequencies:

★ i. Annually.

ii. During or immediately after the cessation of a 10-year or greater storm.

iii. As specified in the O & M Agreement pursuant to Section 602.

Pathogens PCMs: Ordinance Requirements

Model Ordinance - Pet Waste

Ordinance # [ ] - Pet Waste

SECTION I. Purpose:

An ordinance to establish requirements for the proper disposal of pet solid waste in **[insert name of municipality]**, so as to protect public health, safety and welfare, and to prescribe penalties for failure to comply.

SECTION II. Definitions:

For the purpose of this ordinance, the following terms, phrases, words and their derivations shall have the meanings stated herein unless their use in the text of this Chapter clearly demonstrates a different meaning. When not inconsistent with the context, words used in the present tense include the future, words used in the plural number include the singular number, and words used in the singular number include the plural number. The word "shall" is always mandatory and not merely directory.

a. Immediate – shall mean that the pet solid waste is removed at once, without delay.

b. Owner/Keeper – any person who shall possess, maintain, house or harbor any pet or otherwise have custody of any pet, whether or not the owner of such pet.

c. Person – any individual, corporation, company, partnership, firm, association, or political subdivision of this State subject to municipal jurisdiction.

d. Pet - a domesticated animal (other than a disability assistance animal) kept for

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Adjusting MS4 Programs

Audits/Inspections

Lititz Borough – USEPA Compliance Inspection

Background…

- Prior to the audit/compliance inspection, Lititz was covered under the 2003 General Permit for small MS4s as well as the subsequent 2013 update (PAG-13).
- In the August 2014, the Borough received a call from the EPA requesting that we compile information and that we would be inspected for compliance (Compliance Inspection Protocol).

Lititz Borough – USEPA Compliance Inspection

What they wanted up front…

- Program management documents (SWMP, NOI, Annual Reports, Organizational Charts)
- System mapping & BMP Inventories – with municipally owned facilities noted
- Stormwater ordinances & regulatory mechanisms
- Written procedures, tracking mechanisms, and violation tracking
- Inspection files
- Records of training

During the course of the inspection, the Borough supplied EPA with over 70 different resources.

Lititz Borough – USEPA Compliance Inspection

Initial review findings and follow-up…

- By early September, the Borough received EPA's Administrative Order. It detailed their main focus areas, which corresponded to the Minimum Control Measures (MCMs) which are required to be part of a Stormwater Management Program.
- Representatives of the EPA and their contractors audited our stormwater management program and inspected our facilities for two days in late October 2014. PADEP staff were also in attendance.

Lititz Borough – USEPA Compliance Inspection

Inspection Schedule…

Tentative Agenda for MS4 Program Inspection
Borough of Lititz, PA
October 23 – October 24, 2014

Day	Time	
Thursday, October 23, 2014	8:00 – 8:30 am	Opening Discussions (Office)
	8:30 – 10:00 am	Pollution Prevention/Good Housekeeping for Municipal Operations and Illicit Discharge Detection and Elimination (Office)
	10:00 am – 12:00 pm	Municipal Facilities (Field)
	12:00 – 1:00 pm	Lunch Break
	1:00 – 4:00 pm	IDDE (Field)
	4:00 – 4:30 pm	Recap and Logistics Planning for Friday
Friday, October 24, 2014	8:00 – 9:30 am	Construction Site Stormwater Runoff Control and Post-Construction Stormwater Management in New and Re-Development Activities (Office)
	9:30 am – 12:00 pm	Construction Sites (Field)
	12:00 – 1:00 pm	Lunch Break
	1:00 – 3:00 pm	Post-Construction Stormwater Management (Field)
	3:00 – 3:30 pm	EPA Internal Discussion[1] (Tentative time slot)
	3:30 – 4:30 pm	Closing Discussions[2] (Tentative time slot)

Lititz Borough – USEPA Compliance Inspection

Findings…

- Observation 1: At the time of inspection, Lititz did not have an accurate map that showed the location of all MS4 outfalls
- Observation 2: At the time of inspection, Lititz was not conducting field screening of outfalls in the priority areas twice a year
- Observation 3: At the time of inspection, the former Superintendent of Public Works stated that not all outfall field screening was conducted after 72 hours following a rain event.
- Observation 4: While on site, [EPA] observed that Lititz did not have equipment or sampling kits to collect and analyze dry weather samples if needed during outfall field screening.

Lititz Borough – USEPA Compliance Inspection

Findings…

- Observation 5: At the time of inspection, Lititz had not taken an enforcement action or issues a penalty for violations of erosion and sediment control (ESC) related provisions in their Stormwater Management Ordinance since the start of their permit coverage.
- Observation 6: At the time of inspection, Lititz did not distribute educational materials to developers.

Lititz Borough – USEPA Compliance Inspection

Findings…

Observation 7: During the inspection, [EPA] observed that Lititz may not be ensuring the installation of the stormwater detention basin at [an active construction site] as designed.

Observation 8: At the time of the inspection, it did not appear that Lititz had a system in place to monitor post-construction stormwater BMPs since the start of their permit coverage in 2004.

Lititz Borough – USEPA Compliance Inspection

Findings…

Observation 9: At the time of the inspection, Lititz did not have baseline information and annual records documenting current conditions and required maintenance for municipally-owned stormwater control facilities

Observation 10: While on site, [EPA] observed that a detailed schedule for inspecting all stormwater facilities and performing operations and maintenance activities was not available, except for a street sweeping schedule.

Observation 11: At the time of the inspection, the Fire Chief stated that the Lititz Fire Department washes it vehicles outside in the driveway of the Fire Station.

Lititz Borough – USEPA Compliance Inspection

Findings…

Observation 12: At the time of the inspection, Lititz disposed of sediment, catch basin debris, vegetative debris, street sweepings, grass clippings, mulch, asphalt, and concrete at its Borough-owned “fill site”…

Observation 13; While on site, [EPA] observed that Lititz did not have documentation indicating that all public works municipal employees received training about stormwater management and operations and maintenance of municipal facilities.

Lititz Borough – USEPA Compliance Inspection

Follow-up…

After receiving the observations, the Borough was asked to respond within 15 business days. A response was sent in late February 2015.

Borough heard nothing from the EPA until July 2016.

Lititz Borough – USEPA Compliance Inspection

After some time…

"Based on the 2014 inspection, as well as a review of the information provided by the Borough during and after the inspection and information obtained from PADEP, EPA believes that the Borough's MS4 program was not and is not compliant with the MS4 PAG-13"…

MCMs 3, 4, 5, and 6 were specifically cited as deficiencies

Fines were cited as high as $187,500***

….but

Lititz Borough – USEPA Compliance Inspection

Negotiations…

EPA offered an opportunity to settle the fine administratively instead of through formal litigation based on the SWMP development and implementation.

So representatives of the Borough traveled to EPA Region 3 Headquarters in Philadelphia in September 2016 to discuss the settlement and the progress made thus far.

At the meeting, we described the progress we had made into the SWMP since the audit including adding additional staff to work on the program.

During the discussion, EPA seemed impressed at our progress and even asked if they could use some of our resources as examples.

After the discussion, no fine was mentioned… despite our expectations.

The Borough received the Consent Agreement and Final Order (CAFO) in December of 2016, incorporating several of the solicitor's comments.

The amount of the final civil penalty was agreed upon in the amount of $3,000.


Final Thoughts
and Questions?
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