

Meeting Maintenance's Requirements of Operating PennDOT's Municipal Separate Storm Sewer System

NPDES Permit - PA I-1215-00-05-0002

Pennsylvania Department of Transportation Webinar

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Apex Companies, LLC**

Learning Objectives

- **Familiarity with Municipal Separate Storm Sewer System (MS4) and NPDES Permit**
- **Expectations of EPA and PADEP**
- **How this affects design, construction and maintenance personnel**
- **Reporting and deliverables**



What is an MS4?

- **A conveyance or system of conveyances that is:**
 - **Owned by state, city, town or public entity that discharges to waters**
 - **Designated or used to collect or convey stormwater**
 - **Not a combined sewer**
 - **Not part of a publicly owned treatment works**

Example – Conveyance

- Includes roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm-water drains that discharge untreated stormwater into the waters of the Commonwealth



Example – Conveyance



**Two types of BMPs operated within
PennDOT's MS4s**

PennDOT's MS4

- **Transportation authorities are responsible for maintaining stormwater systems**
- **Challenges**
 - **Roads can convey polluted runoff**
 - **Linear systems cross multiple watersheds and jurisdictions**
 - **Stormwater systems convey pollutants sourced outside the ROW**
- **Solution – NPDES Permit**
 - **Management of their stormwater systems**
 - **Develop/Implement comprehensive stormwater program**

What is the NPDES MS4 Permit?

- **National Pollution Discharge Elimination System**
 - **EPA, under Clean Water Act, seeks to eliminate water pollution by regulating point source discharges**
 - **Point sources are discrete conveyances**
 - Pipes or man-made ditches



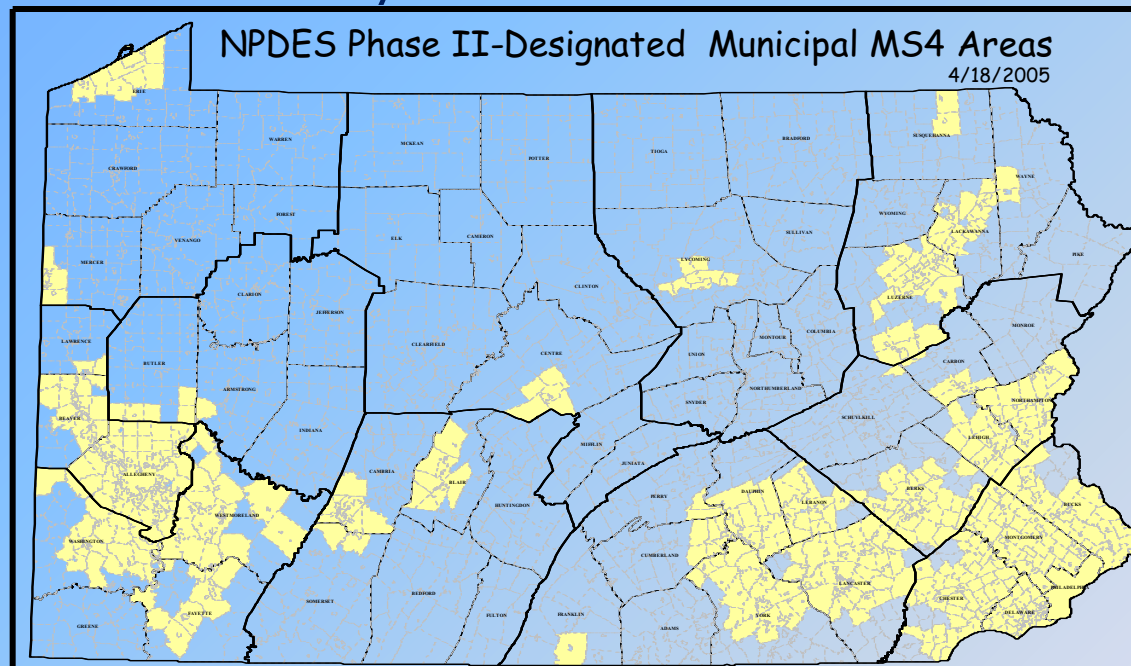
Who Must Have an NPDES Permit?

- **Clean Water Act requires anyone discharging pollutants from one source into water:**
 - **Municipal wastewater systems**
 - **Industries and commercial facilities**
 - **Concentrated animal feeding operations**
 - **Municipal and industrial stormwater systems**

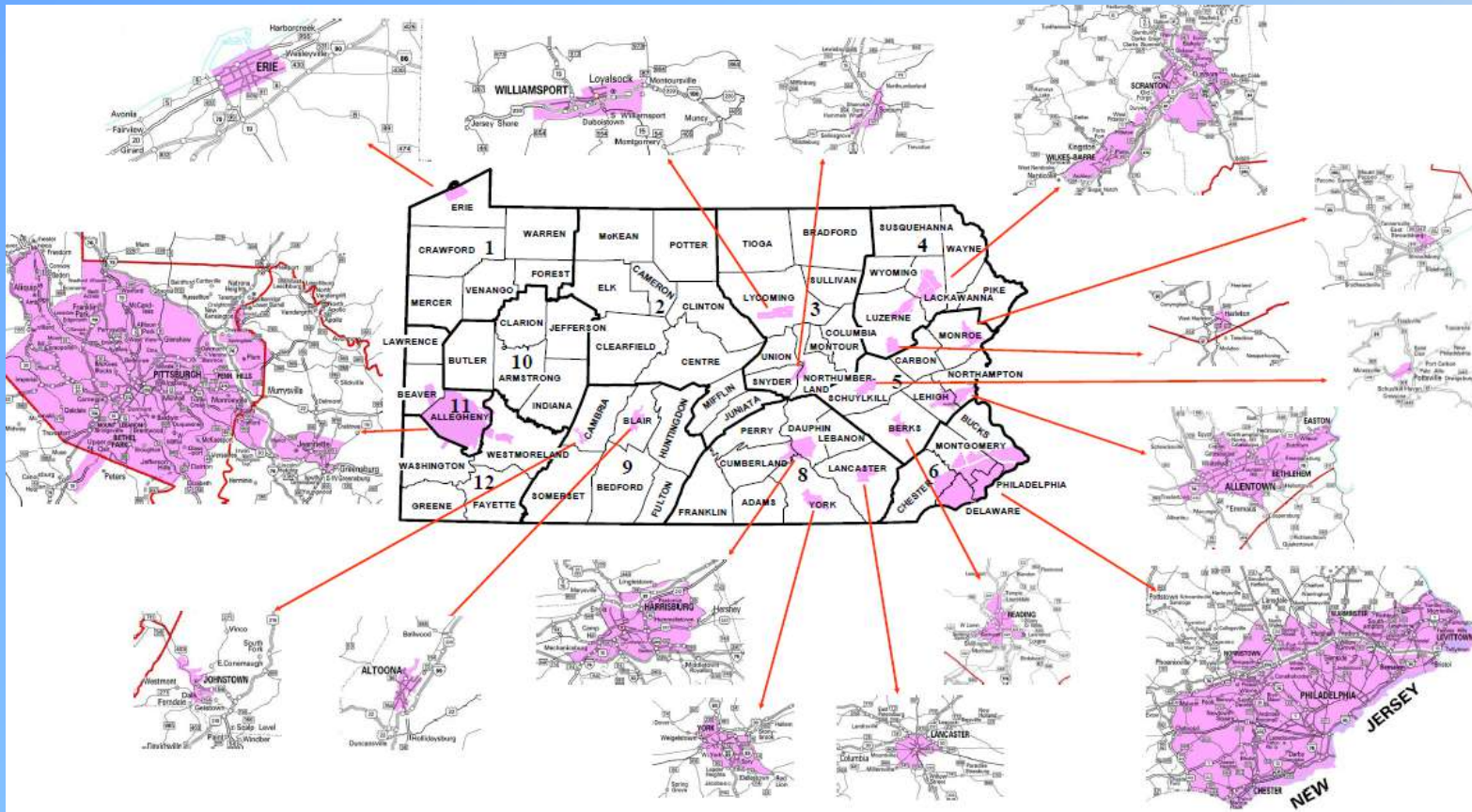


Municipal Separate Storm Sewer Systems (MS4s)

- **Operators of MS4s within designated urbanized areas must obtain NPDES Permit**
 - Also non-urbanized areas designated by permitting authority



Pennsylvania Urbanized Area Map



Reference:
<http://cfpub.epa.gov/npdes/stormwater/urbanmapresult.cfm?state=PA>

2/10/2012; Slide 11

Urbanized Area Map Details

Site
 Documents
 News

- Log In
- About DEP
- Newsroom
- DEP Programs A - Z
- Air
- Energy
- Environmental Cleanup & Brownfields
- Mining
- Oil and Gas
- Radiation Protection
- Waste
- Water**
- Water Standards and Facility Regulation
- Watershed Management**
- Waterways
- Public Participation
- Licensing, Permits & Certification
- Report an Incident
- Regional Resources
- Grants & Loans
- Environmental Education
- Tools
- Public Records

Home > Water > Watershed Management > Stormwater Management > Urbanized Area Numbers

Urbanized Area Numbers

Pennsylvania Urbanized Areas	Urbanized Area Number	Overview Map [PDF Format]	Detailed Map with Roads [PDF Format]
Allentown	1	Allentown, Bethlehem Overview Map	Allentown, Bethlehem Detailed Map
Altoona	2	Altoona Overview Map	Altoona Detailed Map
Bethlehem	3	Allentown, Bethlehem Overview Map	Allentown, Bethlehem Detailed Map
Connellsville	4	Uniontown, Connellsville Overview Map	Unionville, Connellsville Detailed Map
Erie	5	Erie Overview Map	Erie Detailed Map
Harrisburg	6	Harrisburg Overview Map	Harrisburg Detailed Map
Hazleton	7	Hazleton Overview Map	Hazleton Detailed Map
Johnstown	8	Johnstown Overview Map	Johnstown Detailed Map
Lancaster	9	Lancaster Overview Map	Lancaster Detailed Map
Lebanon	10	Lebanon Overview Map	Lebanon Detailed Map
Monessen	11	Monessen Overview Map	Monessen Detailed Map
Philadelphia (NE)	12	Philadelphia NE Overview Map	Philadelphia NE Detailed Map
Philadelphia (NW)	13	Philadelphia NW Overview Map	Philadelphia NW Detailed Map
Philadelphia	..	Philadelphia SE Overview	Philadelphia SE

Watershed Management Topics

- ▼ **Watershed Management**
 - ▶ County Conservation Districts
 - ▶ Drought Information
 - ▶ Nonpoint Source Management
 - ▶ Watershed Notebooks
 - ▶ Watershed Snapshot
 - ▶ Citizen's Volunteer Monitoring Program
 - ▶ Agricultural Operations
 - ▶ Water Conservation Center
 - ▶ Wetlands
 - ▶ Sinkholes
 - ▶ State Water Plan
- ▼ **Stormwater Management**
 - Announcements
 - MS4 Information Resource CD
 - NPDES MS4 Information
 - **Urbanized Area Numbers**
 - General Information
 - ▶ Technical Information
 - ▶ Permitting
 - ▶ Best Management Practices Manual
 - ▶ Water Allocation

http://www.portal.state.pa.us/portal/server.pt/community/stormwater_management/10628/urbanized_area_numbers/669155

Application to PennDOT

MS4 Operational Permit No. PA 1-1315-00-5-0002

– **Five-year period beginning July 15, 2011**

– **Effects:**

- Maintenance,
- Design,
- Construction,
- Counties,
- Municipal Services, and
- Facilities Management



Permit Language

- **“Approval to discharge in accordance with the terms and conditions herein No condition or this permit shall release PENNDOT from any responsibility or requirement under Pennsylvania or Federal environmental statutes and regulations.”**

Four Parts of the Permit

- **Part A - Permit Elements**
- **Part B - General Conditions**
- **Part C - Other Conditions**
- **Part D - Special Conditions**

Part A

- **Effluent Limitations and Other Requirements**
- **Minimum Control Measures (MCMs)**
- **Reporting**



Effluent Limitations

- **PennDOT must:**
 - **Implement Stormwater Management Program described in Permit**
 - **Design to reduce discharge of pollutants**
 - **Make level of effort “maximum extent practicable”**
- **So, what are you doing?**

Six Established Minimum Control Measures

1. Public education and outreach on stormwater impacts
2. Public participation and involvement
3. Illicit discharge detection and elimination
4. Construction site runoff control
5. Post-construction stormwater management
6. Pollution prevention and good housekeeping

Part B

- **Permit Renewal Requirements**
- **Management Requirements**
 - **Renewal, termination, revocation, amendment, etc**
- **Reporting**
 - **Non-compliance, testing, record retention**
- **Responsibilities**
 - **Duty to comply, penalties, etc.**
- **Definitions**

Definitions

- **Best Management Practices –**
 - **Activities, controls, planning or procedures to minimize accelerated erosion and sedimentation and manage stormwater to protect, maintain, reclaim and restore quality of surface waters andbefore, during and after earth disturbance activities.**

Definitions

- **Earth disturbance activity**
 - **Construction or other human activity which disturbs surface of land, including land clearing, grubbing, grading, excavations....**



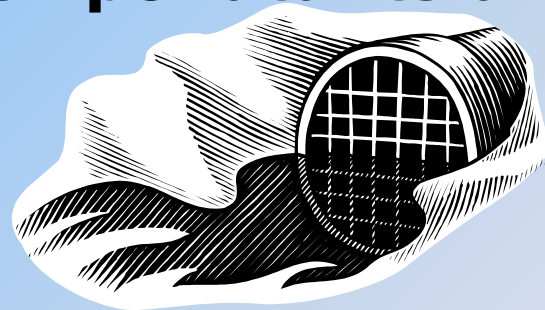
Definitions

- **Outfall –**
 - **“Point Source” is point where MS4 discharges to surface waters of Commonwealth:** this does not include open conveyances connecting two MS4s or pipes, tunnels or other conveyances which connect segments of same stream or other surface waters and are used to convey surface waters.



Definitions

- **Point Source –**
 - **Discernible, confined and discrete conveyance including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock CAAP, CAFO, landfill leachate collection system or vessel or floating craft from which pollutants are or may be discharged.**

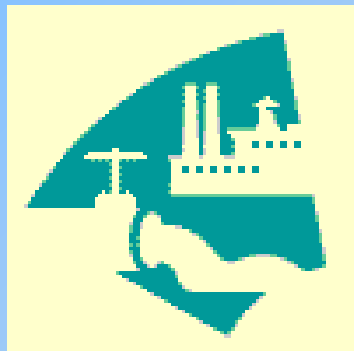


Definition

- **Illicit Discharge –**

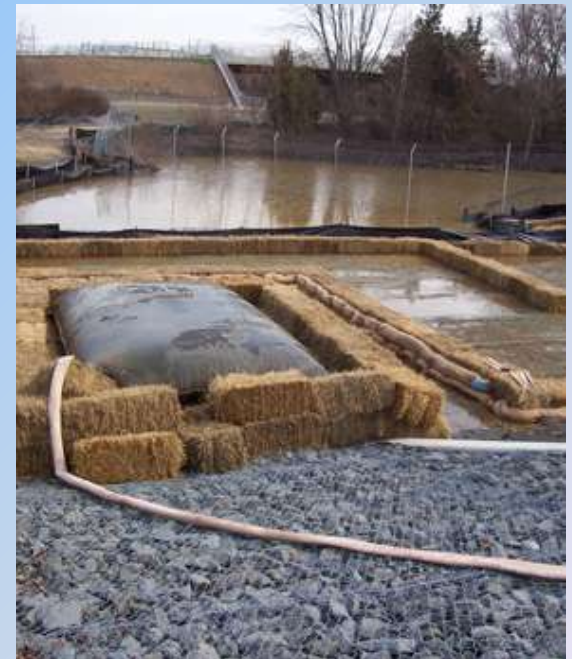
- **Any discharge (or seepage) to MS4 not composed entirely of stormwater.**

- Examples include dumping of motor vehicle fluids, household hazardous waste, grass clipping, leaf litter, animal wastes, or unauthorized discharge of sewage, industrial waste, restaurant wastes.
 - Illicit discharges can be accidental or intentional



Part C – Other Conditions

- **Discharges must be entirely stormwater**
 - **14 exceptions including pools, springs, sumps, etc.**
- **Reporting**
 - **Implementation of Minimum Control Measures (MCMs)**
 - **Permit compliance**
 - **Corrective actions**



Part C – Other Conditions

- **Post Construction BMP Plan Review**
- **Longer Term O&M of PC BMPs**
- **Certification**



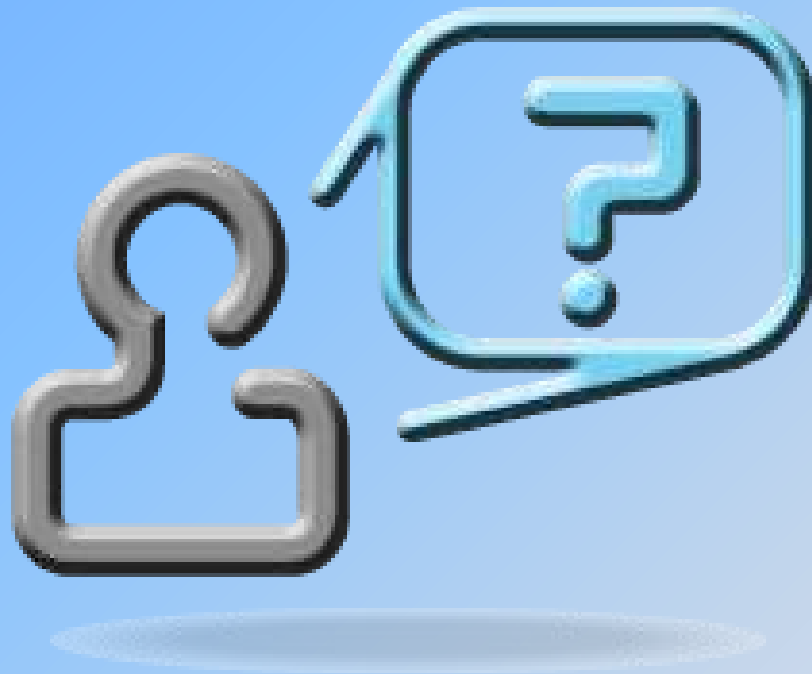
Part D - Special Conditions

- **MCM 1– Public Outreach**
- **MCM 2 - Public Participation and Involvement**
- **MCM 3 - Illicit Discharge Detection/ Elimination**
- **MCM 4 - Construction Site Runoff Control**
- **MCM 5 - Post-Construction SW Mgmt in New Development and Redevelopment**
- **MCM 6 – Pollution Prevention and Good Housekeeping for Municipal Operations and Maintenance**

Part D – TMDL Plan

- **Agree to develop TMDL Plan that addresses pollutant loading in:**
 - A. New discharges in urbanized areas**
 - B. Existing discharges in urbanized areas**
 - C. Reduction of TMDL system-wide**
 - **Banking/credits for improvements outside urbanized areas**
 - **Reduction in fertilizer and mowing cycles**

Questions



MCM 3 – Illicit Discharge Detection & Elimination

- **IDD&E control measures:**
 - **Develop maps of MS4 that identify outfalls, receiving streams, and EPA or DEP urbanized areas**
 - **Update procedures to detect illicit discharges in Publication 23 - Maintenance Manual**
 - **Use STAMPP personnel to inspect 25% of roadway systems annually**
 - **Train STAMPP and maintenance field personnel to detect observable discharges**

MCM 3 – Illicit Discharge Detection/ Elimination

- **Publication 23, Chapter 8 – Drainage and Drainage Systems**
 - **Drainage systems should operate as designed**
 - **to convey stormwater away from road**
 - **8.4 – Unlawful for any person to discharge sewage or drainage, except surface drainage, within legal limits of ROW**
- **Publication 73 – Drainage Condition Survey Field Manual**
 - **Identify and rate MS4 system**

Illicit Discharge Examples



Illicit Discharge Examples



MCM 3-Illicit Discharge Detection Responses

- **Observe and record characteristics**
 - **Color, odor, sheen, flow, garbage/sewage, surrounding vegetation condition**
- **Make reasonable efforts to trace discharge to source**
- **Document steps taken to identify and remove**



MCM 3 - Illicit Connection

- An illegally connected pipe or any other improper connection that conveys illicit discharges to storm drain system or waterways.



**Note Pipes
Running to open
waterway**

MCM 3-Illicit Discharge Documentation

- **Expected that records of field investigations include:**
 - **Date and exact place of observation(s)**
 - **Name of individual making observation**
 - **Description of observation**
 - **Results of any screening or analytical testing performed**



MCM 3-Illicit Discharge Documentation

PennDOT's Illicit Discharge Reporting Form

Discharge Information

County Where Discharge was found, if known:	How Long since Last Rainfall: <input type="checkbox"/> Raining Now <input type="checkbox"/> 3 or more Days <input type="checkbox"/> 0 – 2 Days <input type="checkbox"/> Unknown
State Route/Segment/Offset, or Nearest Intersection/Landmark, or GPS location, if known:	Nature of Discharge or Flow: <input type="checkbox"/> Solid (Continuous) <input type="checkbox"/> Pulsing (Fluctuating)
If possible, identify the source of the discharge? <input type="checkbox"/> Pipe Outfall <input type="checkbox"/> Gutter <input type="checkbox"/> Sanitary Wastewater <input type="checkbox"/> Ditch <input type="checkbox"/> Septic System <input type="checkbox"/> Other: _____ <input type="checkbox"/> Storm Sewer	Potential for Discharge to enter into: <input type="checkbox"/> Stream/Water Body <input type="checkbox"/> Wetland <input type="checkbox"/> Storm Drain Other: _____
Was water flow observed? <input type="checkbox"/> Yes <input type="checkbox"/> No	Was a photo taken? _____ If yes, attach photo
Describe Odor: <input type="checkbox"/> None <input type="checkbox"/> Musty <input type="checkbox"/> Rotten Eggs (Sulfur) <input type="checkbox"/> Rancid/Sour Milk <input type="checkbox"/> Sewage <input type="checkbox"/> Gas/Petroleum <input type="checkbox"/> Cooking Oil <input type="checkbox"/> Other _____	
Describe Clarity: <input type="checkbox"/> Clear <input type="checkbox"/> Cloudy <input type="checkbox"/> Opaque <input type="checkbox"/> Sheen <input type="checkbox"/> Gray	
Describe Color: <input type="checkbox"/> Red <input type="checkbox"/> Yellow <input type="checkbox"/> Brown <input type="checkbox"/> Green <input type="checkbox"/> Grey <input type="checkbox"/> Other _____	
Describe Solids/Floatables: <input type="checkbox"/> Garbage <input type="checkbox"/> Sewage <input type="checkbox"/> Tissue <input type="checkbox"/> Oily Sheen <input type="checkbox"/> Suds <input type="checkbox"/> Unknown	
Additional Information to assist in the Investigation:	
Send completed form to:	SEMP Section, Keystone Building, 400 North Street, 6 th Floor, Harrisburg, PA 17120, submit on-line, or Call 1-800-Fix-Road

MCM3-Illicit Discharge Reporting

- Documentation sent to SEMP Section
- SEMP Section contacts and forwards information/records reported to PADEP



MCM3-Illicit Discharge Reporting

- **Illicit discharge reporting from public**
 - **Perform a site view**
 - **Document conditions and screening as above**
 - **Forward as above**



Discharge Information	
County Where Discharge was found, if known:	How Long since Last Rainfall: <input type="checkbox"/> Raining Now <input type="checkbox"/> 3 or more Days <input type="checkbox"/> 0 - 2 Days <input type="checkbox"/> Unknown
State Route/Segment/Offset, or Nearest Intersection/Landmark, or GPS location, if known:	Nature of Discharge or Flow: <input type="checkbox"/> Solid (Continuous) <input type="checkbox"/> Pulsing (Fluctuating)
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Was water flow observed? <input type="checkbox"/> Yes <input type="checkbox"/> No	Was a photo taken? _____ If yes, attach photo
Describe Odor: <input type="checkbox"/> None <input type="checkbox"/> Musty <input type="checkbox"/> Rotten Eggs (Sulfur) <input type="checkbox"/> Rancid/Sour Milk <input type="checkbox"/> Sewage <input type="checkbox"/> Gas/Petroleum <input type="checkbox"/> Cooking Oil <input type="checkbox"/> Other _____	
Describe Clarity: <input type="checkbox"/> Clear <input type="checkbox"/> Cloudy <input type="checkbox"/> Opaque <input type="checkbox"/> Sheen <input type="checkbox"/> Gray	
Describe Color: <input type="checkbox"/> Red <input type="checkbox"/> Yellow <input type="checkbox"/> Brown <input type="checkbox"/> Green <input type="checkbox"/> Grey <input type="checkbox"/> Other _____	
Describe Solids/Floatables: <input type="checkbox"/> Garbage <input type="checkbox"/> Sewage <input type="checkbox"/> Tissue <input type="checkbox"/> Oily Sheen <input type="checkbox"/> Suds <input type="checkbox"/> Unknown	
Additional Information to assist in the Investigation:	
Send completed form to: SEMP Section, Keystone Building, 400 North Street, 6th Floor, Harrisburg, PA 17120, submit on-line, or Call 1-800-Fix-Road	

MCM 3 – Illicit Discharge Mitigation

- **Appropriate steps to mitigate**
- **Document steps taken**
- **Contact PADEP if outside of PennDOT's control**



MCM 3-Illicit Discharge Reporting

The screenshot shows the homepage of the Pennsylvania Department of Environmental Protection (DEP). The header features the DEP logo and the text "pennsylvania DEPARTMENT OF ENVIRONMENTAL PROTECTION". Below the header is a navigation bar with "pennsylvania PA", "PA STATE AGENCIES", "ONLINE SERVICES", and a search box. A secondary navigation bar lists "Tom Corbett, Governor | Michael Krancer, Secretary | DEP Home".

The main content area is titled "Welcome to the Pennsylvania Department of Environmental Protection" and includes a paragraph about the department's responsibilities. Below this is a "Latest News" section with a list of recent articles, including "DEP Reminds Pennsylvanians that January is National Radon Action Month" and "DEP Fines TerraAqua Resource Management for Frack Water Spill".

On the left side, there is a vertical navigation menu with various categories. A red arrow points to the "Report an Incident" link, which is circled in red. Other links in the menu include "Site", "Documents", "News", "Log In", "About DEP", "Newsroom", "DEP Programs A - Z", "Air", "Energy", "Environmental Cleanup & Brownfields", "Mining", "Oil and Gas", "Radiation Protection", "Waste", "Water", "Public Participation", "Licensing, Permits & Certification", "Regional Resources", "Grants & Funding", "Environmental Education", and "Tools".

On the right side, there are several promotional boxes, including "2011-12 Pennsylvania State Budget", "Open Government Website", "DEP's Letter to EPA on Clean Air Council Petition", "Sec. Krancer's Nov. 16, 2011 Congressional Testimony", "Air Emissions Inventory for Marcellus Shale Infrastructure", and "Technical Guidance on Wastewater Treatment Permitting".

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

MCM 3-Illicit Discharge Reporting

Home > Report an Incident

Report an Incident

Emergency Response Contact Numbers In Your Area

Region	Emergency Phone	Region Headquarters	Counties Supervised
Southeast	484-250-5900	East Main Street Harrisburg, PA 17401 Phone: 484-250-5900	Bucks, Chester, Delaware, Montgomery, Philadelphia
Northeast	570-826-2511	2 Public Square Wilkes-Barre, PA 18711-0790 Phone: 570-826-2511	Carbon, Lackawanna, Lehigh, Luzerne, Monroe, Northampton, Pike, Schuylkill, Susquehanna, Wayne, Wyoming
Southcentral	877-333-1904	909 Elmerton Avenue Harrisburg, PA 17110 Phone: 717-705-4700	Adams, Bedford, Berks, Blair, Cumberland, Dauphin, Franklin, Fulton, Huntingdon, Juniata, Lancaster, Lebanon, Mifflin, Perry, York
Northcentral	570-327-3636 24 Hours	208 West Third Street Suite 101 Williamsport, PA 17701 Phone: 570-327-3636	Bradford, Cameron, Centre, Clearfield, Clinton, Columbia, Lycoming, Mifflin, Northumberland, Potter, Snyder, Sullivan, Tioga, Union
Southwest	412-442-4000 24 Hours	400 Waterfront Drive Pittsburgh, PA 15222-4745 Phone: 412-442-4000	Allegheny, Armstrong, Beaver, Cambria, Fayette, Greene, Indiana, Somerset, Washington, Westmoreland
Northwest	814-332-0945 After Hours: 800-373-3338	230 Chestnut Street Meadeville, PA 16335-3481 Phone: 814-332-0945	Butler, Clarion, Crawford, Elk, Erie, Forest, Jefferson, Lawrence, McKean, Mercer, Venango, Warren

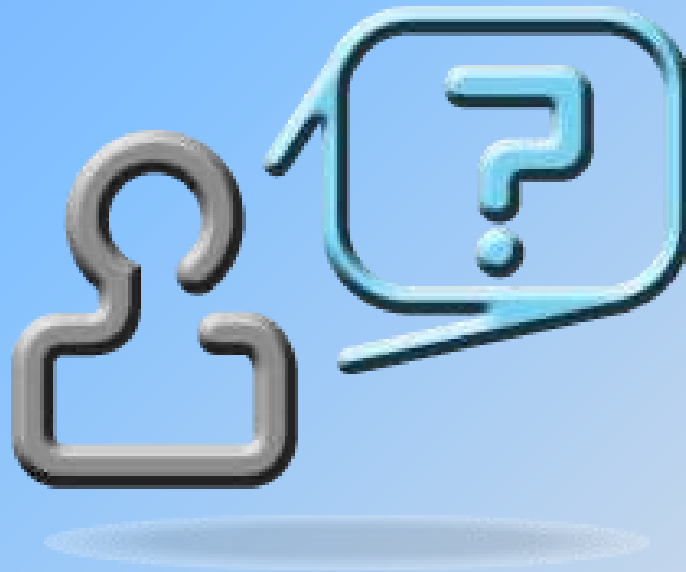
Call appropriate PADEP region:

- >5 gallons hazardous material
- >5 gallons petroleum
- Incidents of illegal/improper disposal

MCM 3 – Program Goals

- **Mapping of MS4 System**
 - **High risk areas prioritized**
 - **IDD&E Program developed**
- **Training**
 - **Maintenance personnel trained**
- **Inspection**
 - **25% of MS4 system inspected and screened for illicit discharges**

Questions



MCM 5 – Post-Construction Stormwater Management

- **Requires PennDOT to:**
 - **Coordinate PCSM plans with County Conservation Districts and PADEP**
 - **Implement/update “Anti-degradation and Post Construction Stormwater Management Policy”**
 - **Update/revise E&S, BMPs and stormwater control policies or guidance as operational observations dictate**
 - **Seek partnerships for construction mitigation projects**
 - **Provide training on erosion, sediment and stormwater control policy materials/guidance documents**

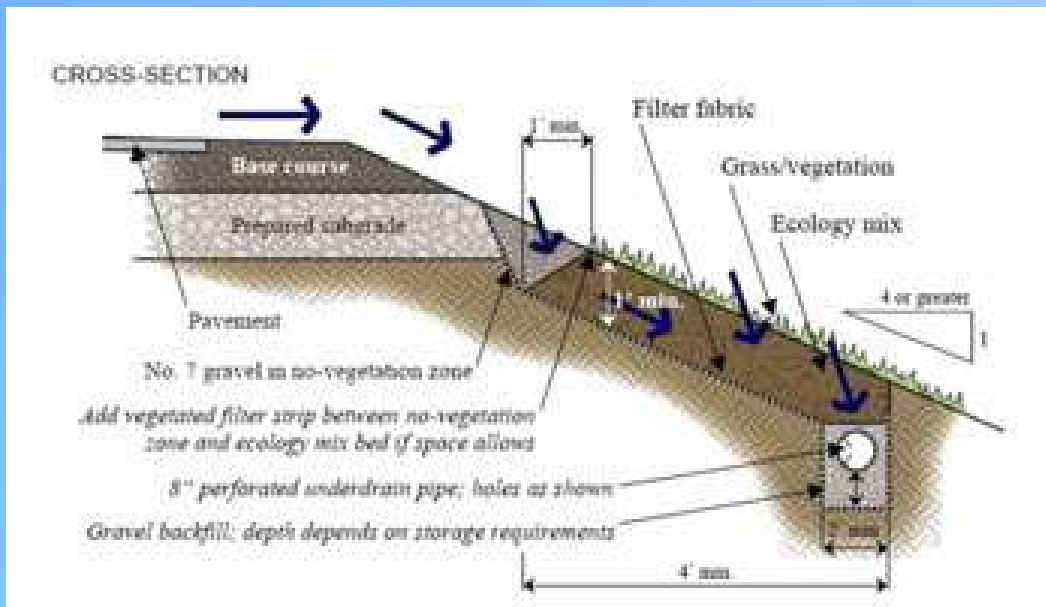
MCM 5 – Post-Construction Stormwater Management

- Ensure NPDES PCSM BMPs operated and maintained



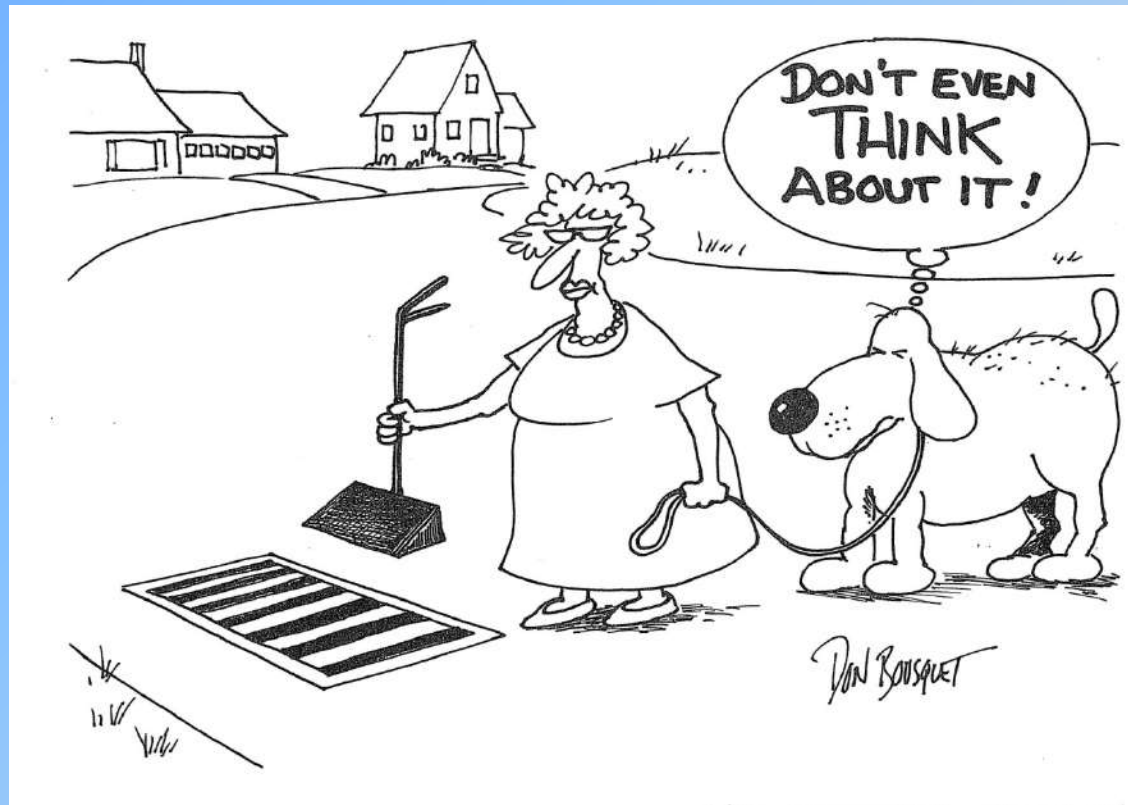
MCM 5 – Post-Construction Stormwater Management

- **What are inspection requirements?**
 - **Use maintenance inspection and STAMPP**
- **Report and correct operational issues**
 - **Use existing inspection forms**



MCM 5 – Post-Construction Stormwater Management

- Questions on MCM 5



MCM 6 Pollution Prevention and Good Housekeeping

- **Targeted objectives**
 - **PennDOT facilities:
Winter services**
 - Stockpiles and garage management
 - Road maintenance activities
 - **Welcome Centers
and Safety Rest
Areas**
 - **Employee training**



MCM 6 Pollution Prevention and Good Housekeeping

- **Publication 23,**
 - **Chapter 8 – Drainage and Drainage Systems**
 - **Chapter 12 – Buildings and Grounds**
 - **Chapter 20 – Waste Management**
 - **Chapter 21 – Storage Tank Management**
- **Publication 611**
- **Combined Facility Response Plan**
- **SEM Program**

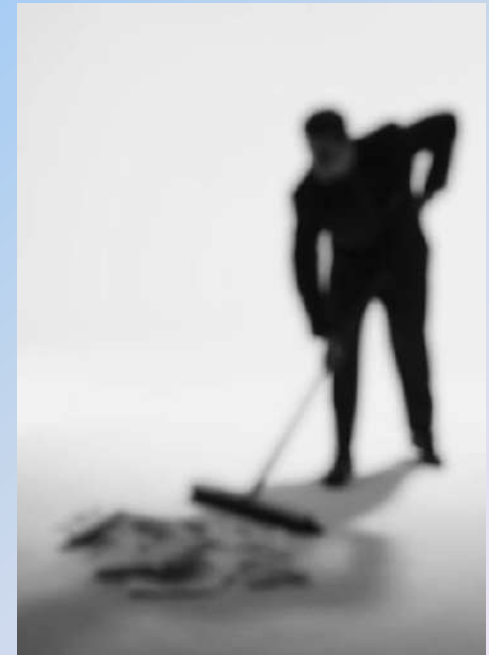
MCM 6 Pollution Prevention and Good Housekeeping

- **Chapter 8 – Drainage & Drainage Systems**
 - **Routine inspections to:**
 - Confirm satisfactory conditions
 - Evaluate conditions for cleanup and repair



MCM 6 Pollution Prevention and Good Housekeeping

- **Chapter 12 – Buildings and Grounds**
 - **Purpose to, “..maintain these facilities in a neat and tidy manner...”**
- **Includes:**
 - **Maintenance of stormwater BMPs**
 - **Proper materials storage**



MCM 6 Pollution Prevention and Good Housekeeping

- **Chapters 20 and 21, Pub 611 and CFRP**
 - **Reduce or eliminate waste**
 - **Comply with regulations**
 - **Appropriately plan and respond to spills/leaks**



MCM 6 Pollution Prevention and Good Housekeeping

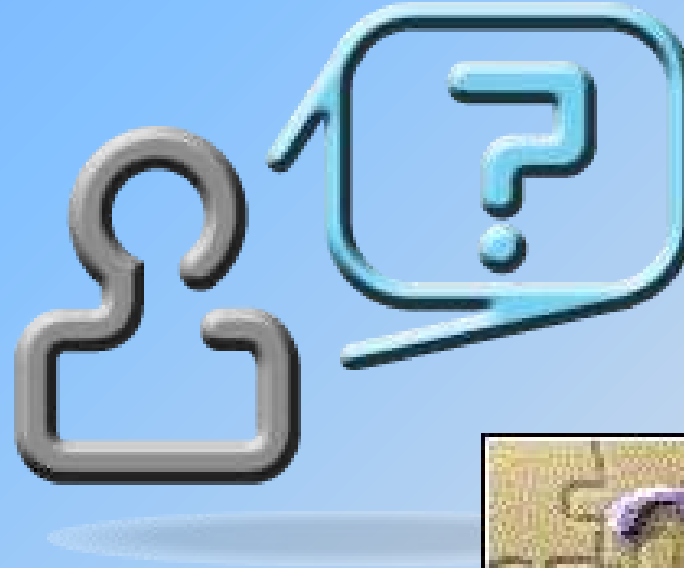
- **Coordinated with local municipal MS4**
 - **Must define responsibility and maintenance of any BMP in writing**



MCM 6 - Program Goals

- **Year 1: Information gathering**
 - **Facilities stormwater – inspection/condition**
 - **Vehicle operations – procedures and PP efforts**
 - **Training (none at this time)**
- **Years 2-5:**
 - **Review data and implement BMP maintenance program – revise as necessary**
 - **Develop/implement/update facility pollution prevention plans**
 - **Train employees on maintenance, PP and related**

Questions



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