MS-4 Stormwater Management Program Protocol

Pollution Prevention and Good Housekeeping for Municipal Operations and Maintenance
Stormwater Management Evolution

• “Run it in ditches”
• “Run it in pipes”
• “Run it in stormwater pipes”
• “Keep it from stormwater pipes”
• “Just don’t cause a flood”
• “Oh... and don’t pollute either”
History of MS4

• Municipal Separate Storm Sewer System
• 1987 Clean Water Act Amendments
• Phase I MS4s for places with populations greater than 100,000
• Certain industrial and construction sites
• In Pennsylvania – Erie and Pittsburgh have combined sewer systems
• Allentown and part of Philadelphia are included in MS4 Phase I
What is MS4 Phase II?

- Phase II became effective in 2003
- Phase II is for urban areas with < 100,000 population
- Urbanized areas defined based on 1990 and 2000 census data
- Requires NPDES permit for storm water
- US EPA requires six minimum control measures as part of program
- PA DEP incorporates Protocol in General Permit
- Permit extensions through March 9, 2013
What is a Municipal Separate Storm Sewer System?

- Municipal Separate Storm Sewer: A conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains), which is all of the following:
  1. owned or operated by a state, city, town, borough, township, county, district, association or other public body (created under state law) having jurisdiction over disposal of sewage, industrial wastes, stormwater or other wastes,
  2. designed or used for collecting or conveying stormwater,
  3. not a combined sewer, and
  4. not part of a Publicly Owned Treatment Works as defined at 40 CFR § 122.2.

- Urbanized Areas are currently based upon the 2000 US Census
Six Minimum Control Measures

1. Public Education and Outreach
2. Public Participation and Involvement
3. Illicit Discharge Detection and Elimination (IDDE)
4. Construction Site Runoff Control
5. Post-Construction Stormwater Management (New and Redevelopment)
6. Pollution Prevention and Good Housekeeping for Municipal Operations and Maintenance
What’s New for the 2013-2018 Permit

• Beyond the six MCMs
  – Stream Impairments
  – Total Maximum Daily Loads for MS4s (TMDLs)
    • Maiden Creek/Lake Ontelaunee – Sediment
    • Schuylkill River – Polychlorinated Biphenyls (PCBs)
    • Wyomissing Creek - Sediment

• New requirements for six MCMs
  – Increased Vigilance
  – Documentation
Cooperative Efforts for New Permit

• Berks County MS4 Steering Committee
  – Berks County Cooperative Education Program
  – --- Municipal Agreements Adopted
• Berks County Conservation District MOUs
  – --- Municipal Agreements Adopted
• Wyomissing Creek Watershed Coalition
  – Seven Municipal Members
• Pennsylvania Stormwater Coalition
  – Legal & Technical
## Meeting New MCM Permit Requirements Cooperatively

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<thead>
<tr>
<th>MCMs</th>
<th>MCM Cooperative Approach</th>
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MCM #6 BMP #1
Identify and document all facilities and activities owned or operated having the potential for generating stormwater runoff

Activities
- Street sweeping
- Plowing
- Salting
- Lawn care
- Building maintenance
- Vehicle Maintenance, fueling, maintenance, washing
- Yard waste Activities
- Material Transfer, cinders, salt, leaf pick-up, trash
- Storage of Materials
- Right of way maintenance & stormwater facility maintenance
- License, Education and Permit Requirements!!!!!

Facilities
- Streets, roads, highways
- Parking lots,
- Maintenance shops & storage yards
- Parks
- Riparian buffers & stormwater conveyances
- Detention/Retention/Treatment
- Transfer Stations
MCM #6 BMP #2

Develop, Implement and Maintain Written O&M Program

• Management Practices Policies and Procedures
• Maintenance Activities Schedules and Inspection Procedures
• Controls for Reducing or Eliminating Discharge from Activities & Facilities
• Procedures for Proper Disposal of Wastes Removed
MCM #6 BMP #3

Develop and Implement an Employee Training Program (Annual, Documented and Reported)

• Employees could include:
  – Public Works, Parks & Recreation
  – Building/Zoning/Codes
  – Engineering/Planning
  – Construction & Contracted Personnel
  – Administrative & Elected
  – Police & Fire
  – Volunteers

• Training Guidance
  – Formal, informal; on-site, off-site
  – Individual or group; on-job, separate session
  – Staff, consultant; written, oral
Good Housekeeping
Municipal Vehicles: Maintenance

• Establish an operations and maintenance program for all municipal vehicle operations. You may already have implemented these O&M aspects; however if you have not or as a reminder, here are the following items relating to vehicle maintenance:

  – Having on hand dry absorbent material such as kitty litter, straw or sawdust for cleaning up spills;

  – Having designated receptacles for disposal of oils, oily rags, used filters, batteries, spent coolants, degreasers, etc.

  – Covered or pervious, i.e., grass or gravel washing areas

  – Signs that remind employees
FLOOR ABSORBENT

Absorbs grease, oil, water.

Keeps floors clean, safe, and dry.

Net Wt. 40 lbs.
(18.1 kg)

EMPTY EVERY NIGHT
Pay attention to the frequency of activities; types of substances used; materials storage, handling and disposal practices; and new regulations.
Maintenance

• Make proper disposal of greasy rags, oil filters, air filters, batteries, spent coolant, degreasers, etc., easy by providing appropriate receptacles. Locate waste and recycling drums in properly controlled areas of the yard, preferably areas with a concrete slab and secondary containment.

• Avoid hosing down work areas.

• Put leaking vehicles coming in for service under cover or immediately place drip pans under them.

• Collect leaking or dripping fluids in drip pans or containers.
Where is your Oil/Water Separator?
When was it last serviced?
Do you have Records & Procedures?
Maintenance

• Keep a drip pan under the vehicle while you unclip hoses, unscrew filters or remove other parts.

• Do not pour liquid waste into floor drains, sinks, outdoor storm drain inlets, or other storm drains or sanitary sewer connections.

• Place oil filters in a funnel over the waste oil recycling or disposal collection tank to drain excess oil before disposal, then crush and recycle oils filters; ask your oil supplier or recycler about recycling oil filters.
Fueling

• Place overfill prevention equipment on underground storage tanks. Watch transfer constantly to prevent overfilling and spilling.

• Discourage topping off of fuel tanks through training and posting signs

• Avoid cleaning fuel areas with running water. Consider using damp cloth on pumps and a damp mop on paving rather than a hose.

• Control spills immediately. Small spills can be cleaned up with rags and larger spills can be cleaned with dry absorbent material such as kitty litter, straw or sawdust. Don’t forget to clean up your MESS!

• Do not wash petroleum spills into the storm drain.
Washing

• If possible utilize commercial car washes. They typically recycle wash water and direct it to a wastewater treatment plant.

• Create and use designated cleaning areas, preferably indoors where wash water can be recycled or directed to treatment. If indoor washing is not possible create specific areas to wash the vehicles on gravel, grass or other permeable surfaces.

• Block off storm drains while washing or use an insert to catch wash water. Make inserts and dams available.

• On-site washing to drains discharging to WWTP, if permitted.
Where does your wash pad drain?
Washing

• Convert to use phosphate-free biodegradable detergents.

• Pump soapy water from the washing activity to a sanitary sewer drain. If pumping into a drain is not feasible, pump the wash water onto grass or landscaping to provide filtration.

• Be sure to check Local, State and Federal requirements regarding the use of the sanitary sewer system.
Alternative to Road Salt

• Use of deicing materials other than salt in areas that drain to environmentally sensitive areas should be considered. Sources of alternatives can be found through a technical release – HITEC Releases ICE Ban (registration trademark) Evaluation Report.

• LTAP assists municipalities in training for the winter road maintenance.

• Request attendance at scheduled training sessions.
Snow Storage Areas

• Designate Snow storage areas around the municipality for temporary storage of snow that has been removed. For some municipalities, these snow areas are used only after large precipitation events. These snow storage areas should not be near surface waters or groundwater drinking sources AND should take into consideration drainage.

• Clean the storage areas after the snow has melted by collecting the sediment, debris and trash, which was picked up in the snow removal process.
Salt and Deicing Storage Areas

- Locate all salt and deicing areas outside the 100-year floodplain, areas of localized flooding and away from stormwater facilities.

- Cover all salt and deicing material storage piles with tarps, hard shelters or within dikes or berms.

- Avoid using water to clean up spills!
Application of Salt and Deicing Materials

- Apply deicing materials according to manufacturer’s recommendations for the given circumstance. When determining the amount to apply consider the road width, traffic concentration, proximity to surface waters and road temperature to prevent over application.

- Use trucks with calibration devices or volume controls on their spreaders.
  - When did you last calibrate your dispenser?

- Avoid applying deicing materials near surface waters, groundwater drinking sources or other environmentally sensitive areas. In these areas and the High Quality (HQ) and Environmental Value (EV) waters apply alternative deicing materials such as sand or salt substitutes.

- Do you turn off your dispenser when?
  - Crossing an open grate bridge
  - Railroad tracks
  - Sitting at a traffic signal
  - Moving your load
Consider sweeping up extra anti-skid materials and stockpiling for re-use.
Landscaping

• Ensure that the applicators have a valid state license.

• Application of chemicals. Pretest the soils to determine the proper application rates.

• Apply fertilizer, herbicides and pesticides exactly according to the manufacture guidelines. **More is not better.**

• Require that the applicators attend continuing education to keep abreast of the current and proper application techniques as detailed in the Pollution Prevention Training Section.
MOWING

• How close are you mowing to a stream?
• Are you mowing areas, regularly that could be let to grow back to meadow?
• Do your drains get clogged with grass/debris?
• Where are your Outfalls?
• Are you inspecting bi-annually?
• What happens if there is flowing water/inspection issue?
• Documentation for annual report?
• Updating maps with stormwater facilities?
Inlets and Storm Sewer Facilities

IDD&E

- Inspections of the facilities and outfalls identified in the permit.

- Maintain and clean the systems on a regular basis, including cleaning the inlets. Document the amount of material cleaned out of the storm sewer system.

- Keep gutter lines and swales clean and storm sewers will require less cleaning.

- Inspect each catch basin at least once a year to determine if it needs cleaning and note any repairs needed. If the depth of the materials in the bottom of the catch basins is greater than or equal to one-third the depth of the inlet bottom to the invert of the lowest pipe opening, have the catch basin cleaned as soon as possible.
Inlets and Storm Sewer Facilities

• Catch basins that require regular cleaning inspect more often than once a year.

• Remove leaves, anti-skid and other debris from gutter lines and swales as soon as possible to prevent the materials from depositing in the catch basin.

• Dispose of the sediment and debris from the catch basins in a proper manner.
Stenciling
Pollution Prevention & Education

- Location – Painting street with stencil
- Decal – No Dumping Drains to Creek with Frog Logo
- Painting – No Dumping Drains to Creek with Fish Logo
## Operations & Maintenance Tracking Forms

### Storm Water Facility Operation and Maintenance Program Development:

- **Existing Programs**

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- **Proposed Program Modifications (for Permit Year 2)**

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# Operations & Maintenance Tracking Forms

**Vehicle Maintenance, Fueling and Washing Program Development:**

### Existing Program Information (for Permit Year 1)

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We can all do our part of keeping the Waters of the Commonwealth a little cleaner by changing our habits at work and at home.
Remember that we drink, play and enjoy these waters and the pollutants in the stormwater systems may cause the contamination and loss of this important resource.
Special thanks to:

- Birdsboro Borough
- Cumru Township
- Spring Township
- Wyomissing Borough
- City of Reading
- Berks County Planning Commission
- Berks County Conservation District
- Berks County Public Works Association
- Spotts, Stevens and McCoy, Inc.
Questions and Answers