UPPER MAKEFIELD TOWNSHIP
MS-4 Stormwater Management Program Protocol

Pollution Prevention and Good Housekeeping for Municipal Operations and Maintenance

Presented March 24,2023

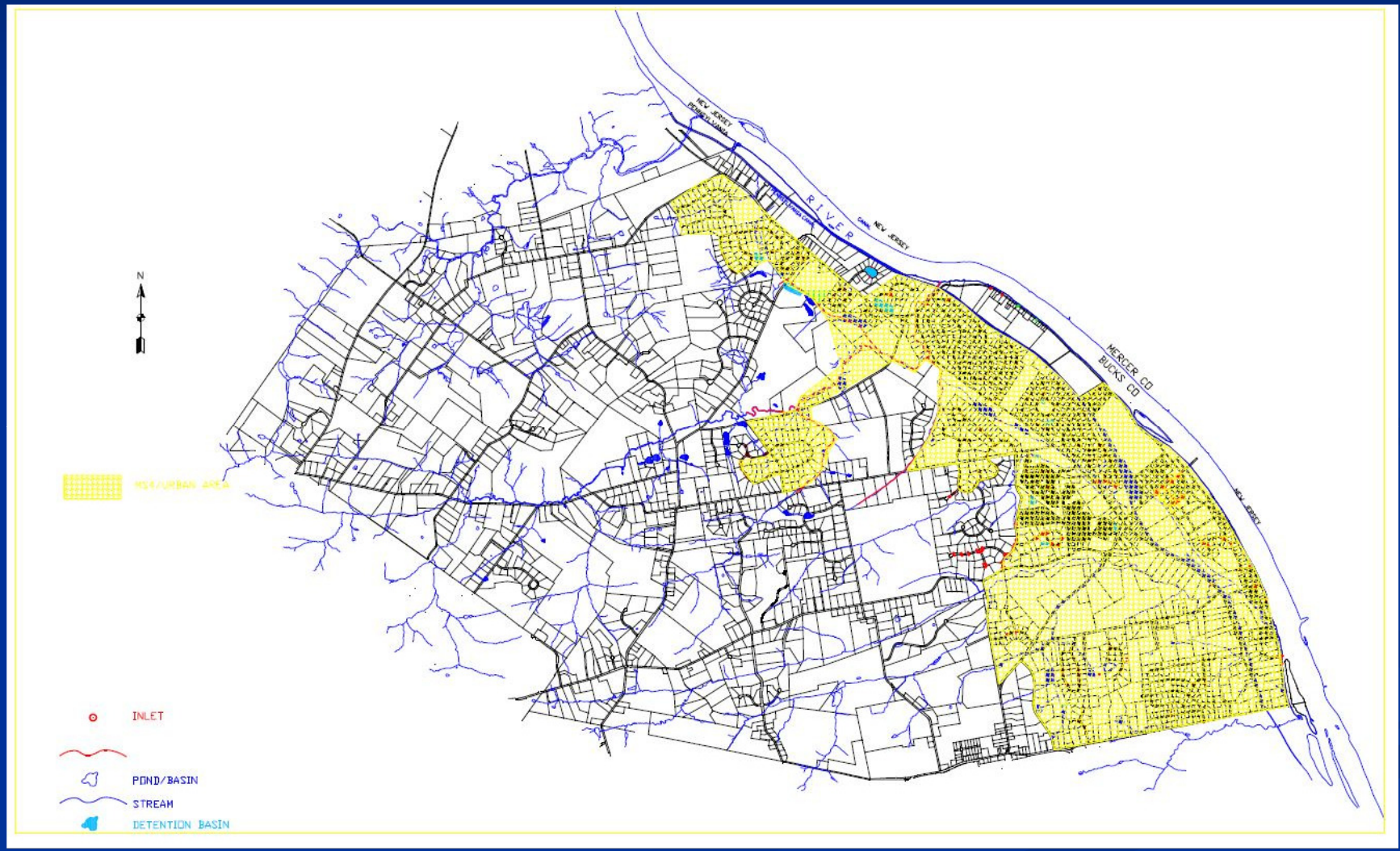
What is MS4?

- Municipal Separate Storm Sewer System
- 1987 Clean Water Act Amendments
- Phase II MS4s for places with populations less than 100,000 (Upper Makefield 8,503)
- Only Philadelphia, Pittsburgh and Allentown are Phase I (2020 Census)
- Certain industrial and construction sites

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 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

UPPER MAKEFIELD URBAN AREA



Six Minimum Control Measures

- Public Education and Outreach
- Public Participation and Involvement
- Illicit Discharge Detection and Elimination
- Construction Site Runoff Control
- Post-Construction Stormwater Management (New and Redevelopment)
- Pollution Prevention and Good Housekeeping for Municipal Operations and Maintenance

Pollution Prevention and Good Housekeeping

- This Presentation and Training Seminar focuses on a comprehensive pollution prevention program for municipal operations focusing particularly on vehicle maintenance, fueling and washing, maintenance of stormwater facilities and employee training. Possibly changes in habits and procedures are necessary to meet these regulations.

Pollution Prevention Program for Municipal Operations

- Three key items that the program will focus on are:

1. Vehicle maintenance, fueling and washing
2. Stormwater facility operation, maintenance, and inspection
3. Training: This seminar satisfies the requirements for the training portion.

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
grease, oil, water.
Keeps floors clean, safe, and dry.
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(18.1 kg)


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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.

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 (applies to off-site fueling also)

- 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. 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.

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.

Alternative to Road Salt

- Use of deicing materials other than salt in areas that drain to environmentally sensitive areas should be considered.
- Training for the winter road maintenance.
- 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. However, these snow storage areas should be at least 100 feet from surface waters or groundwater drinking sources.
- Clean the storage areas after the snow has melted by collecting the 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.
- Cover all salt and deicing material storage piles with tarps, hard shelters or within dikes or berms.

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.
- 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.

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.

Inlets and Storm Sewer Facilities

- 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

- Location – Painting street with stencil
- Decal – No Dumping Drains to Creek with Frog Logo
- Painting – No Dumping Drains to Creek with Fish Logo


NO DUMPING
DRAINS TO CREEK


NO DUMPING
DRAINS TO CREEK


NO DUMPING
DRAINS TO CREEK


NO DUMPING
DRAINS TO CREEK

Operations & Maintenance Tracking Forms

Standard Operating Procedures

SOP 21: Operations and Maintenance of Municipal Vehicles and Equipment

Inventory of Municipal Vehicles and Equipment
Upper Makefield Township, Pennsylvania

Vehicle/Equipment	Department/Location	Contact – Name, Position, Department, Phone Number	Date of Last Inspection/Calibration

What is an Illicit Discharge

- Any discharge to the storm sewer system that is not made entirely of stormwater
- Exceptions include:
  - Discharges from potable water sources
  - Diverted stream flows
  - Rising ground waters and springs
  - Uncontaminated ground water infiltration
  - Uncontaminated pumped ground water
  - Foundation and footing drains
  - Air conditioning condensation
  - Water from crawl space pumps
  - Individual residential vehicle washing
  - Flows from wetlands and riparian habitats
  - Dechlorinated swimming pool discharges
  - Etc.

What to Report

Dirty water in the street

Wash out of solids/liquids

Unusually colored discharges

Liquids dumped down a storm drain

Leaks

Solids blown or swept in the street or down a storm drain

CITIZEN COMPLAINT
ILLICIT DISCHARGE REPORTING FORM

Name: _____ **Contact Phone Number:** _____
_____

Date: _____ **Time Discharge Discovered:** _____
_____

Date of Last Rain Event: _____ **Estimated Quantity of Rain:**
in.
11

LOCATION OF DISCHARGE (indicate nearby street intersections, addresses, and/or landmarks for reference): _____
_____
_____
_____

_____

WHERE WAS DISCHARGE FOUND? OPEN DITCH STREAM PIPE OUTFALL OTHER: _
_____

WAS WATER FLOW OBSERVED? NO YES

WAS FLOW SOLID OR PULSING? SOLID PULSING

WAS A PHOTO TAKEN? NO YES (Please attach a copy to form)

ODOR: NONE MUSTY SEWAGE ROTTEN EGGS SOUR MILK OTHER: _
_____

COLOR: CLEAR RED YELLOW BROWN GREEN GREY OTHER: ___
_____

CLARITY: CLEAR CLOUDY OPAQUE

WAS THERE AN:
OILY SHEEN YES NO
GARBAGE/SEWAGE YES NO
OTHER: _____

ADDITIONAL INFORMATION TO ASSIST IN THE INVESTIGATION: _____
_____
_____
_____

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.

Questions and Answers