

# **Minimum Control Measures for Municipal Separate Storm Sewer System (MS4)**

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# Federal Stormwater Regulations



## Phase I

Finalized in 1990

Regulates medium and large MS4s (defined as areas that serve 100,000 or more people)

- 10 categories of industrial operations
- Active construction sites of acres or more

Requires:

MS4s to develop and implement a stormwater management plan (SWMP) to

- Find and eliminated illicit discharges
- Control discharges from its system by addressing runoff from active construction sites, new development and redevelopment, industrial program

Construction and Industrial stormwater dischargers to develop and implement Stormwater Pollution Prevention Plan (SWPPP)

## Phase II

Finalized in 1999

Regulates small MS4s located in an “urbanized areas” (UA) as defined by the Bureau of Census

Additional MS4s outside of UAs designated by the NPDES permitting authority

- Active construction activities disturbing between one and five acres

MS4 SWMP must include 6 minimum control measures;

- Public Education & Outreach
- Public Participation/Involvement
- Illicit Discharge Detection & Elimination
- Construction Site Runoff Control
- Post-Construction Runoff Control
- Pollution Prevention/Good Housekeeping



## NPDES Small MS4 General Permit

- Expired permit is administratively continued in accordance with the Administrative Procedures Act
- Draft general permit published on June 11, 2014 for public comment.
- Focus on continuation of Stormwater Management Program (SWMP) developed during first permit cycle.



# Stormwater Management Program

## Six Minimum Control Measure

- Public Education & Outreach
- Public Participation/Involvement
- **Illicit Discharge Detection & Elimination**
- Construction Site Runoff Control
- Post-Construction Runoff Control
- Pollution Prevention/Good Housekeeping



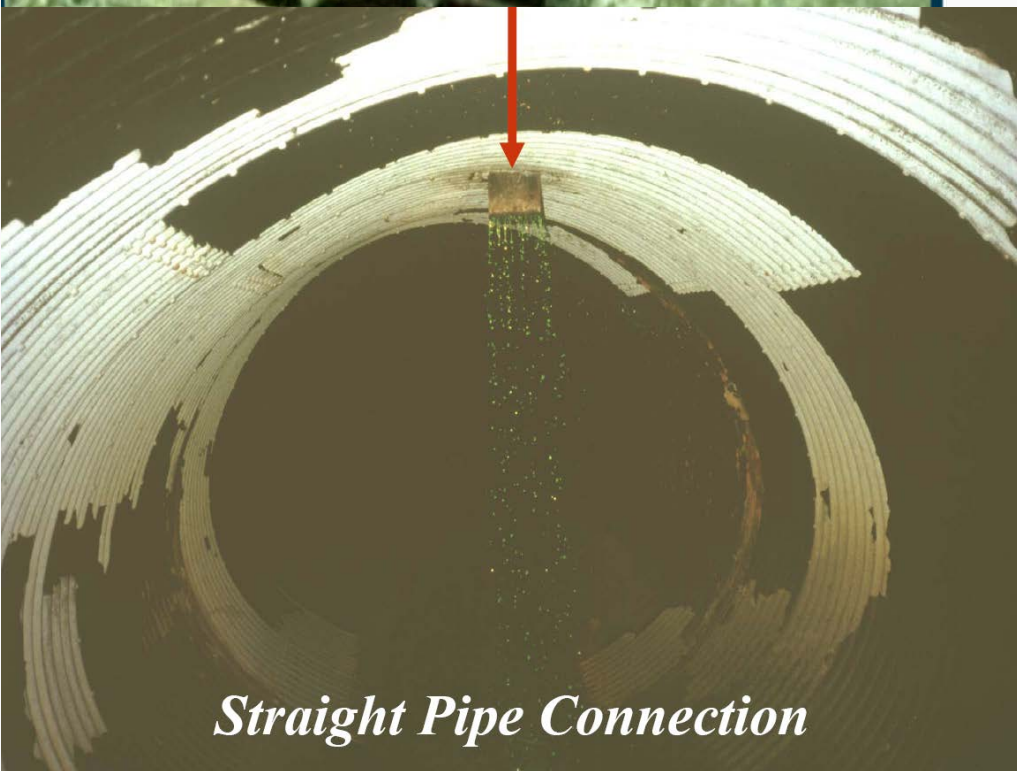
# Illicit Discharge Detection & Elimination

- Program shall include a plan to detect and address non-allowable non-stormwater discharges, including illegal dumping to the MS4 system.
- Find and eliminate sources of non-allowable non-stormwater from the MS4 and to implement procedures to prevent illicit connections and discharges.









*Straight Pipe Connection*









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## **Best Management Practice: Illicit Discharge Detection and Elimination**

- ✓ Develop a sewer system map of all outfalls and the names of all receiving waters
- ✓ Prohibit non-storm water discharges, through an ordinance or other means, and implement appropriate enforcement procedures
- ✓ Implement a plan to detect and address non-storm water discharges
- ✓ Inform public of hazards associated with illegal discharges and improper disposal of waste







# Stormwater Management Program

## Six Minimum Control Measure

- Public Education & Outreach
- Public Participation/Involvement
- Illicit Discharge Detection & Elimination
- Construction Site Runoff Control
- Post-Construction Runoff Control
- **Pollution Prevention/Good Housekeeping**





# Municipal Operations

- Parks and Open Space
- Buildings and Facilities where pollutants are exposed to stormwater runoff
- Vehicles and Equipment
- Infrastructure Operations and Maintenance



# Municipal Operations

- List of Operations
  - Public Works (transportation, workshop, fueling, etc.)
  - Ornate (chemicals storage and applications)
  - Recycling Facilities (material handling, storage, collection, etc.)
  - Maintenance Crew (construction, repairs, cleanup, etc.)





## Recycling Facilities

- Only receive source-separated recyclable materials primarily from non-industrial and residential sources (i.e., common consumer products including paper, newspaper, glass, cardboard, plastic containers, aluminum and tin cans); including recycling facilities commonly referred to as material recovery facilities (MRF).



# What BMPs can be used to minimize contact between stormwater and potential pollutants at my facility?

- BMPs must be selected and implemented to address the following:
  - Good Housekeeping
  - Minimizing Exposure
  - Management Runoff





## Activity

## Point Source

## Pollutant

<i>Recycling Facilities</i>		
Unknowing acceptance of nonrecyclable materials and/or small quantities of household hazardous wastes	Inbound recyclable materials	Dependant on material
Outdoor material storage	Deterioration of wastepaper and unprocessed aluminum beverage containers	Biochemical oxygen demand (BOD)
Processing and storage	Illicit connections or improper dumping to floor drains discharging to a storm sewer system  Washing down tipping floor areas	Dependant on material
Vehicle maintenance	Replacement of fluids such as transmission and brake fluids, antifreeze, oil and other lubricants, washdown of maintenance areas, dumping fluids down floor drains connected to storm sewer system, outside storage of fluids and oily rags and waste material	Oil and grease, gas/diesel fuel, accumulated particulate matter, antifreeze (ethylene glycol)



# Activity      Best Management Practices

<i>Recycling Facilities</i>	
Inbound recyclable materials control	<ul style="list-style-type: none"><li><input type="checkbox"/> Provide public education brochures to inform suppliers of recyclable materials which are acceptable and which are not.</li><li><input type="checkbox"/> Educate curbside pick-up drivers on acceptable materials. Reject unacceptable materials at the source.</li><li><input type="checkbox"/> Clearly marking public drop-off containers regarding which materials can be accepted.</li><li><input type="checkbox"/> Develop procedures for handling and disposal of non-recyclable material.</li><li><input type="checkbox"/> Implement employee training.</li><li><input type="checkbox"/> Provide totally-enclosed drop-off containers for public.</li></ul>
Storage	<ul style="list-style-type: none"><li><input type="checkbox"/> Conduct processing operations indoors. Clean up residual fluids.</li><li><input type="checkbox"/> Schedule routine preventive maintenance on all processing equipment.</li><li><input type="checkbox"/> Store equivalent of the average daily volume of recyclable materials indoors.</li><li><input type="checkbox"/> Direct tipping floor washwaters to sanitary sewer system if permitted by local sanitary authority.</li></ul>





# Activity      Best Management Practices

Storage (continued)	<ul style="list-style-type: none"><li><input type="checkbox"/> Provide good housekeeping.</li><li><input type="checkbox"/> Disconnect all floor drains from storm sewer system.</li><li><input type="checkbox"/> Prohibit illicit discharges and illegal dumping to floor drains that are connected to the storm sewer.</li></ul>
Outdoor material storage	<ul style="list-style-type: none"><li><input type="checkbox"/> Provide totally enclosed drop-off containers for the public.</li><li><input type="checkbox"/> Store only processed materials (i.e., baled plastic, aluminum, and glass cullet).</li><li><input type="checkbox"/> Provide covers over containment bins, dumpsters, and roll-off boxes.</li><li><input type="checkbox"/> Use tarpaulins or covers over bales of wastepaper.</li><li><input type="checkbox"/> Provide dikes and curbs around bales of recyclable wastepaper.</li><li><input type="checkbox"/> Divert surface water runoff away from outside material storage areas.</li><li><input type="checkbox"/> Conduct regularly scheduled sweeping of storage areas to minimize particulate buildup.</li><li><input type="checkbox"/> Provide containment pits with sumps pumps that discharge to sanitary sewer system. Prevent discharge of residual fluids to storm sewer.</li></ul>



# Activity Best Management Practices

## Vehicle fueling

- ☐ Conduct fueling operations (including the transfer of gas/diesel fuel from tank trucks) on an impervious, contained pad, or under a roof or canopy where possible. Covering should extend beyond spill containment pad to prevent rain from entering.
- ☐ When fueling in uncovered area, use concrete pad (not asphalt which is not chemically resistant to the fuels being handled).
- ☐ Use drip pans where leaks or spills of gas/diesel fuel can occur and where making and breaking hose connections.
- ☐ Use fueling hoses with check valves to prevent hose drainage after filling.
- ☐ Clean up spills and leaks immediately.
- ☐ Minimize/eliminate run-on onto fueling areas with diversion dikes, berms, curbing, surface grading or other equivalent measures.
- ☐ Collect stormwater runoff and provide treatment or recycling.
- ☐ Use dry cleanup methods for fuel area rather than hosing the fuel area down.
- ☐ Perform preventive maintenance on storage tanks to detect potential leaks before they occur.
- ☐ Inspect the fueling area to detect problems before they occur.
- ☐ Train personnel on proper fueling procedures.
- ☐ Provide curbing or posts around fuel pumps to prevent collisions during vehicle ingress and egress.
- ☐ Discourage "topping off" of gas/diesel fuel tanks.





# Activity      Best Management Practices

Residual non-recyclable materials	<ul style="list-style-type: none"><li><input type="checkbox"/> Store residual non-recyclable materials in covered containers for transport to a proper disposal facility.</li><li><input type="checkbox"/> Bale residual non-recyclable materials and cover with tarpaulin or equivalent.</li></ul>
Illicit connection to storm sewer	<ul style="list-style-type: none"><li><input type="checkbox"/> Plug all floor drains if it is unknown whether the connection is to storm sewer or sanitary sewer systems. Alternatively, install a sump that is pumped regularly.</li><li><input type="checkbox"/> Perform dye testing to determine if interconnections exist between sanitary water system and storm sewer system.</li><li><input type="checkbox"/> Update facility schematics to accurately reflect all plumbing connections.</li><li><input type="checkbox"/> Install a safeguard against vehicle washwaters and parts cleaning waters entering the storm sewer unless permitted.</li><li><input type="checkbox"/> Maintain and inspect the integrity of all underground storage tanks, replace when necessary.</li><li><input type="checkbox"/> Train employees on proper disposal practices for all materials.</li></ul>



# Activity Best Management Practices

## Equipment/vehicle maintenance

### Good Housekeeping

- ☐ Plug floor drains that are connected to the storm or sanitary sewer; if necessary, install a sump that is pumped regularly.
- ☐ Use drip pans, drain boards, and drying racks to direct drips back into a sink or fluid holding tank for re-use.
- ☐ Drain all parts of fluids prior to disposal. Oil filters can be crushed and recycled.
- ☐ Promptly transfer used fluids to the proper container; do not leave full drip pans or other open containers around the shop. Empty and clean drip pans and containers.
- ☐ Dispose of greasy rags, oil filters, air filters, batteries, spent coolant, and degreasers properly.
- ☐ Label and track the recycling of waste material (e.g., used oil, spent solvents, batteries).
- ☐ Maintain an organized inventory of materials.
- ☐ Eliminate or reduce the number and amount of hazardous materials and waste by substituting nonhazardous or less hazardous materials.
- ☐ Clean up leaks, drips, and other spills without using large amounts of water. Use absorbents for dry cleanup whenever possible.
- ☐ Prohibit the practice of hosing down an area where the practice would result in the discharge of pollutants to the stormwater collection system.
- ☐ Clean without using liquid cleaners whenever possible.
- ☐ Do all cleaning at a centralized station so the solvents stay in one area.
- ☐ If parts are dipped in liquid, remove them slowly to avoid spills.
- ☐ Do not pour liquid waste into floor drains, sinks, outdoor storm drain inlets, other storm drains, or sewer connections.





# Activity      Best Management Practices

## Equipment/vehicle maintenance (continued)

### Minimizing Exposure

- ☐ Perform all cleaning operations indoors or under covering when possible. Conduct the cleaning operations in an area with a concrete floor with no floor drainage other than to sanitary sewers or treatment facilities.
- ☐ If operations are uncovered, perform them on concrete pad that is impervious and contained.
- ☐ Park vehicles and equipment indoors or under a roof whenever possible and maintain proper control of oil leaks/spills.
- ☐ Check vehicles closely for leaks and use pans to collect fluid when leaks occur.

### Management of Runoff

- ☐ Use berms, curbs, or similar means to ensure that stormwater runoff from other parts of the facility does not flow over the maintenance area.
- ☐ Collect the stormwater runoff from the cleaning area and provide treatment or recycling. Discharge vehicle wash or rinse water to the sanitary sewer (if allowed by sewer authority), wastewater treatment, a land application site, or recycle on-site. DO NOT discharge washwater to a storm drain or surface water.



# Activity      Best Management Practices

Equipment/vehicle maintenance (continued)	<p>Inspections and Training</p> <ul style="list-style-type: none"><li><input type="checkbox"/> Inspect the maintenance area regularly for proper implementation of control measures.</li><li><input type="checkbox"/> Train employees on proper waste control and disposal procedures.</li></ul>
Outdoor Vehicle and Equipment Storage	<ul style="list-style-type: none"><li><input type="checkbox"/> Inspect area for leaking engines, chipping/corroding bumpers, chipping paint, galvanized metal</li></ul>





# EPA Website

- Primary Stormwater Site

<https://www.epa.gov/npdes/npdes-stormwater-program>

- Municipal Stormwater Site

<https://www.epa.gov/npdes/stormwater-discharges-municipal-sources>