TETRA TECH

Genesee County

Municipal and School Facilities

STORMWATER POLLUTION PREVENTION

MS4

GENESEE COUNTY SWM DRAIN COMMISSIONER

Good Housekeeping

WHY ARE YOU HERE?

- Permit allows discharge of stormwater
- Learn about general good housekeeping practices to improve stormwater runoff water quality
- Training is required
  - At least once per permit cycle, typically 5-years
  - New hires shall receive training within one year

About the Permit Program

National Pollutant Discharge Elimination System (NPDES) permit program for Municipal Separate Storm Sewer Systems (MS4s)

Goal of the MS4 program is to reduce the discharge of pollutant to surface waters of the State

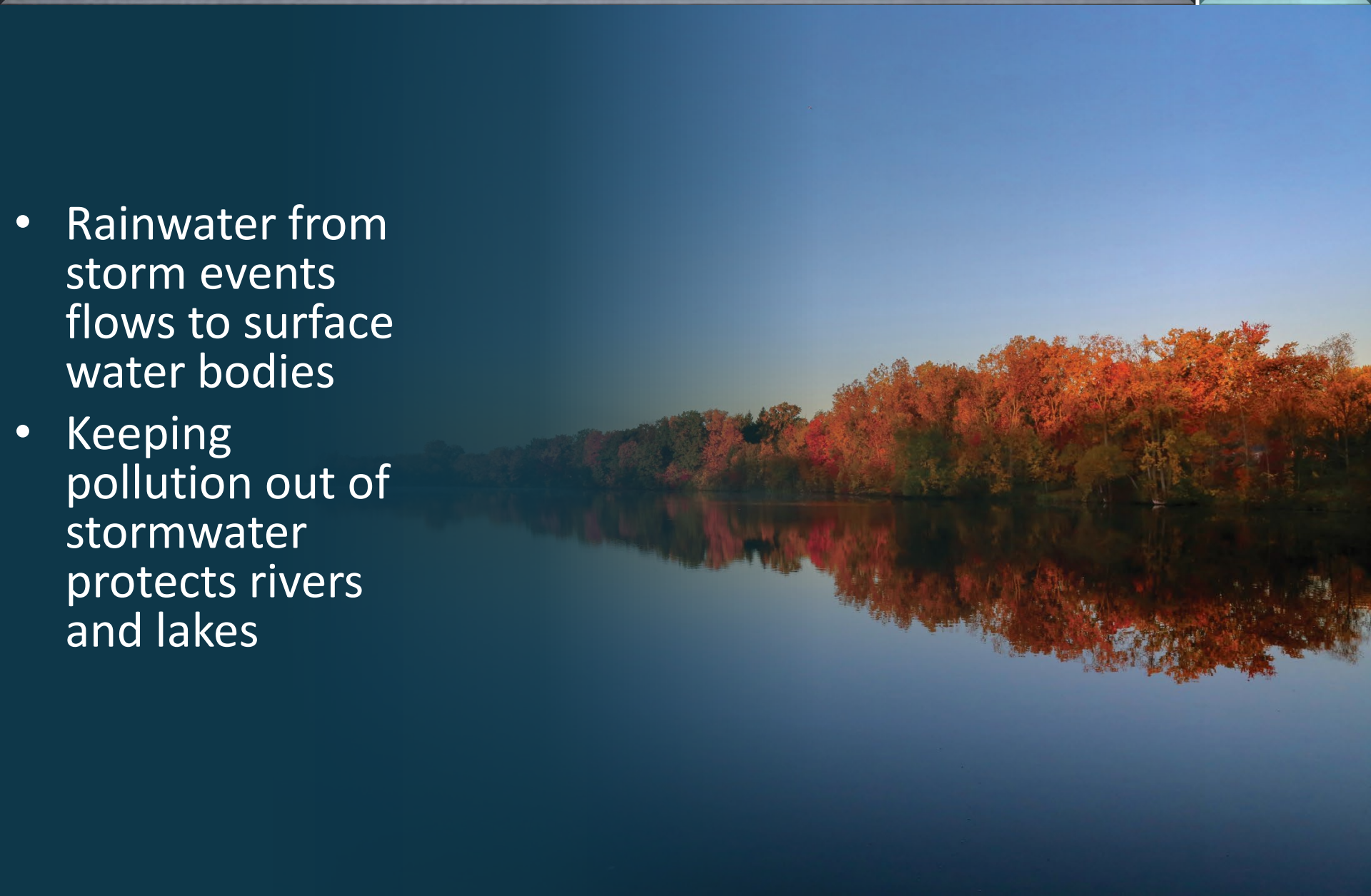
An MS4 is a system of drainage (including roads, storm drains, pipes, ditches, etc.) that is not a combined sewer or part of a sewage treatment plant.

Stormwater discharges from a regulated MS4 to a surface water of the State in an urbanized area are subject to regulations under the NPDES program.

Michigan Department of Environment, Great Lakes, and Energy (EGLE) regulates the MS4 permit.

Why We Care About Pollution Prevention

- Rainwater from storm events flows to surface water bodies
- Keeping pollution out of stormwater protects rivers and lakes



Activities contributing to “urban” stormwater runoff pollution

- Road maintenance
- Vehicle fleet management
- Fueling and vehicle repair
- Loading, transfer & storage
- Waste management
- Painting and coating
- Cleaning and degreasing
- Facility, park, landscape maintenance

Common Stormwater Pollutants

Litter

Pesticides

Oils and grease

Sewage and grey water

Chemicals from landscaping, pressure washing, auto repair, salvage yards, etc.

Domestic animal waste

Improperly disposed household chemicals

Soil erosion

Permit Components

1. Inventory of facilities and control measures *(submitted with permit application)*
2. Facility specific stormwater management *(topic of next workshop)*
3. Structural O&M
4. General O&M
5. Management of vegetated properties
6. Employee Training
7. Contractor Requirements

Catch Basins and Storm Drains

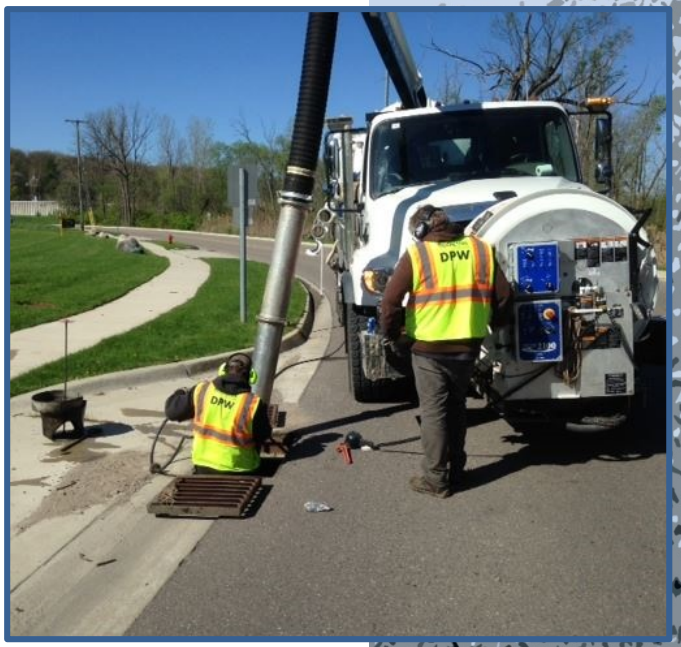
Structural Controls

BMP

Best Management Practice

Catch Basins

- Designed to catch pollutants in a sump
- Visually inspect before cleaning
- Clean when sump is 1/3 full
- Collect and properly dispose waste material (liquid and solid)
  - drying beds → solid waste landfill
  - wastewater treatment plant



Solid/liquid waste defined as “liquid industrial by-product” under Part 121 of NREPA
Refer to EGLE for additional information


EGLE MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY

CATCH BASIN CLEANING ACTIVITIES

GUIDANCE

INTRODUCTION

Catch basins are included in storm sewer system designs as a best management practice to remove pollutants such as gravel, sand, oils, and organic material carried by storm water runoff. Catch basins are designed to capture the pollutants in a sump, which may vary in depth depending on the design. The solids captured in the sump may have elevated concentrations of metals from street runoff or drainage from industrial, commercial, and residential properties. In order to maintain the effectiveness of the catch basin, the sump must be regularly inspected and cleaned out. The Water Resources Division (WRD) and Materials Management Division (MMD) of the Michigan Department of Environment, Great Lakes, and Energy's (EGLE) oversee

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Pavements

Best Management Practice

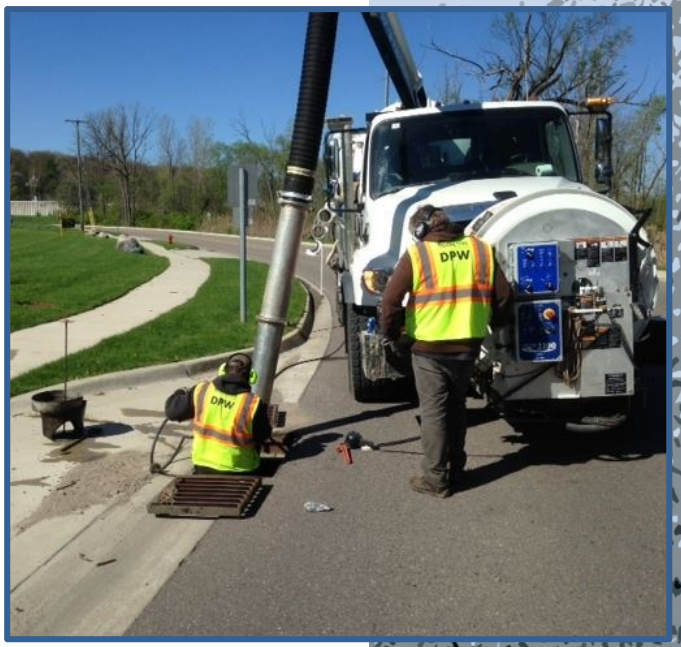
Pavements

Roads and Parking Lots

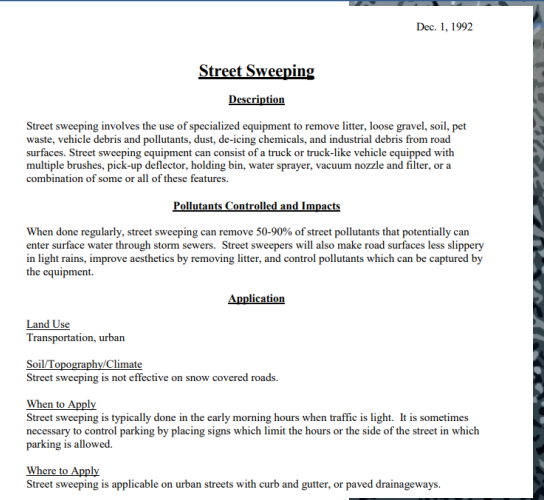
Frequency is highly variable

Collect and properly dispose waste material

- Manual sweeping → bag, bin, landfill
- Grass clippings → blow back up on lawn
- drying beds → solid waste landfill



EGLE nonpoint Source BMP Manual: Street Sweeping EGLE - NPS BMP Manual, Other BMP Design References, and Pollutants Controlled (michigan.gov)



Dec. 1, 1992

Street Sweeping

Description

Street sweeping involves the use of specialized equipment to remove litter, loose gravel, soil, pet waste, vehicle debris and pollutants, dust, de-icing chemicals, and industrial debris from road surfaces. Street sweeping equipment can consist of a truck or truck-like vehicle equipped with multiple brushes, pick-up deflector, holding bin, water sprayer, vacuum nozzle and filter, or a combination of some or all of these features.

Pollutants Controlled and Impacts

When done regularly, street sweeping can remove 50-90% of street pollutants that potentially can enter surface water through storm sewers. Street sweepers will also make road surfaces less slippery in light rains, improve aesthetics by removing litter, and control pollutants which can be captured by the equipment.

Application

Land Use
Transportation, urban

Soil/Topography/Climate
Street sweeping is not effective on snow covered roads.

When to Apply
Street sweeping is typically done in the early morning hours when traffic is light. It is sometimes necessary to control parking by placing signs which limit the hours or the side of the street in which parking is allowed.

Where to Apply
Street sweeping is applicable on urban streets with curb and gutter, or paved drainageways.

Good Housekeeping & Spill Prevention

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Best Management Practice

Spill Prevention

1	**Fueling Areas**
	Protect Nearby Catch Basins/ Storm Sewers. Have absorbent material available. Train Staff to Use Material
2	**Parking Areas**
	Keep Drip Pans Nearby and Accessible. Have Absorbent Material Available.

Spill Prevention

3	**Material Loading Areas**
	Load or Unload Away From Catch Basins/Storm Sewers. Load indoors if possible.

Spill Control & Response

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Best Management Practice

Spill Response

Have a Spill Response Plan in Place with Contact Names and Numbers in Case of a Spill.

Make Spill Control Materials Available and Train Personnel to Use Them.

Spill Notification

Keep Records of All Spills and Retain Records For 3 Years.

- **What Was Spilled and When**
- **How Much Spilled**
- **When The Spill Occurred**
- **How Was it Cleaned Up**

Vehicle Fueling

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Best Management Practice

Vehicle Fueling

Signage (location of spill kit and spill response)

Have a Fuel Spill Kit Available at All Fueling Stations.

Dispose of Used Absorbent Properly.

Store Small Fuel Containers Under Cover in a Fire-proof Cabinet.

Vehicle & Equipment Maintenance

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Best Management Practice

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Keep it Neat!

Best Management Practice

Vehicle & Equipment Maintenance

Outdoor Maintenance

- Mowers, Tractors, Plows
- Away from Catch Basins, Catch Drippings, Sweep and Dispose.

Indoor Maintenance*

- Trucks and Vehicles
- Catch Drippings, Apply Absorbent, Dispose of Waste Properly.

*Indoor maintenance is preferred over working outdoors

Vehicle & Equipment Washing

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Best Management Practice

Vehicle & Equipment Washing

Never Rinse Wash Water to a Storm Sewer.
Rinse Wash Water to a Sanitary Sewer.
Use Commercial Wash Facility.

Materials Management

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Best Management Practice

Outdoor Storage

Road Salt	1
Store Under Roof or Tarp	
Mulch or Topsoil	2
Contain with Berm Away From Catch Basin	
Fuel	3
Approved Storage, Protect Catch Basins	

Indoor Materials Storage Solutions

Order Materials “As Needed” in Small Quantities	1
Store Neatly on Shelving Unit or Pallet	2
Clean up Spills Immediately	3
Haul Waste on a Regular Schedule	4

Waste Management

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Best Management Practice

Waste Receptacles

Problem Areas
Dumpster Lid Left Open
Liquids Put in Dumpster
Located Near Catch Basin

Solutions
Close Lid When Not in Use
No Liquids in Trash Dumpsters
Locate Dumpster Away From Catch Basin

Uncontainerized Wastes

KEEP OUT of Catch Basins
All Wash Water
Concrete Wash and Asphalt
Grass Clippings, Landscape Waste
Over-Applied Fertilizers, Pesticides, and Herbicides

Municipal Facility Maintenance

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Best Management Practice

Municipal Facility Maintenance

	Facility	***Protection Measures***
1	**Municipal site**	
	Garages, Fire/Rescue and Police	***Wash Water in Sanitary, Keep Dumpster Lids Closed, Proper Material Storage, Spill Kits for Fueling Areas***
2	**Office site**	
	Municipal and Administrative Buildings	***No Liquid Waste in Dumpster, Keep Lids Closed, No Cleaning Waste in Catch Basin***
3	Open space / Park	
	Sport *Fields, Playgrounds, Parks*	***Leave buffer when Mowing Around Water Feature, Protect Storm Drains from Clippings, Don't Over-Apply Fertilizer, Pesticides or Herbicides***
4	Transportation stations	
	School Bus, Municipal Transportation Yards	***Spill Kits Available, Drip Pans for Leaks, Keep Dumpster Lids Closed***

Landscaping & Grounds Maintenance

BMP

Best Management Practice

Landscaping

Mowing 1

Use Mulching Mower, Blow Clippings Back on Grass, Leave Buffer Around Water, Don't Mow When Ground is Wet

Fertilizer and Pesticide Application 2

Apply Only When Necessary, Sweep Up Excess, Follow Application Guidelines

Permits / Certificates 3

Michigan Department of Agriculture (MDA) Pesticide/Herbicide Application Certificate

Landscaping Wastes

Disposal 1

Don't Blow Clippings into Street, Catch Basin or Water

Mulch When Possible

Composting 2

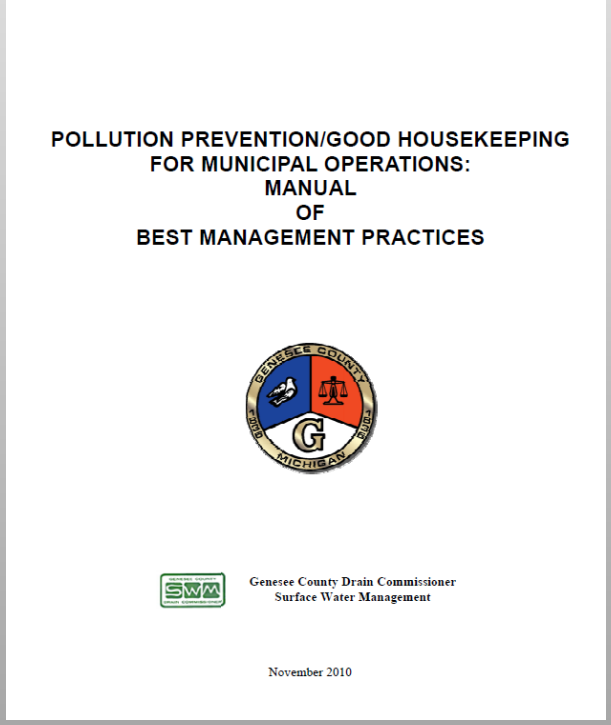
Compost Leaves and Yard Debris Away From Water and Catch Basins.

Berm Composting Area if Possible

Questions?

Additional Information

- GCDC Surface Water Management (gcdcswm.com)
- www.ClearGeneseeWater.org
- EGLE - Municipal Program / MS4 Compliance Assistance (michigan.gov)


POLLUTION PREVENTION/GOOD HOUSEKEEPING
FOR MUNICIPAL OPERATIONS:
MANUAL
OF
BEST MANAGEMENT PRACTICES

Genesee County Drain Commissioner
Surface Water Management

November 2010

end of slideshow

STORMWATER POLLUTION PREVENTION

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