



Municipal Separate Storm Sewer System Employee Training

MS₄ – How It Effects YOU



Learning Objectives

1

Understand what MS₄ is, and how it impacts all of us

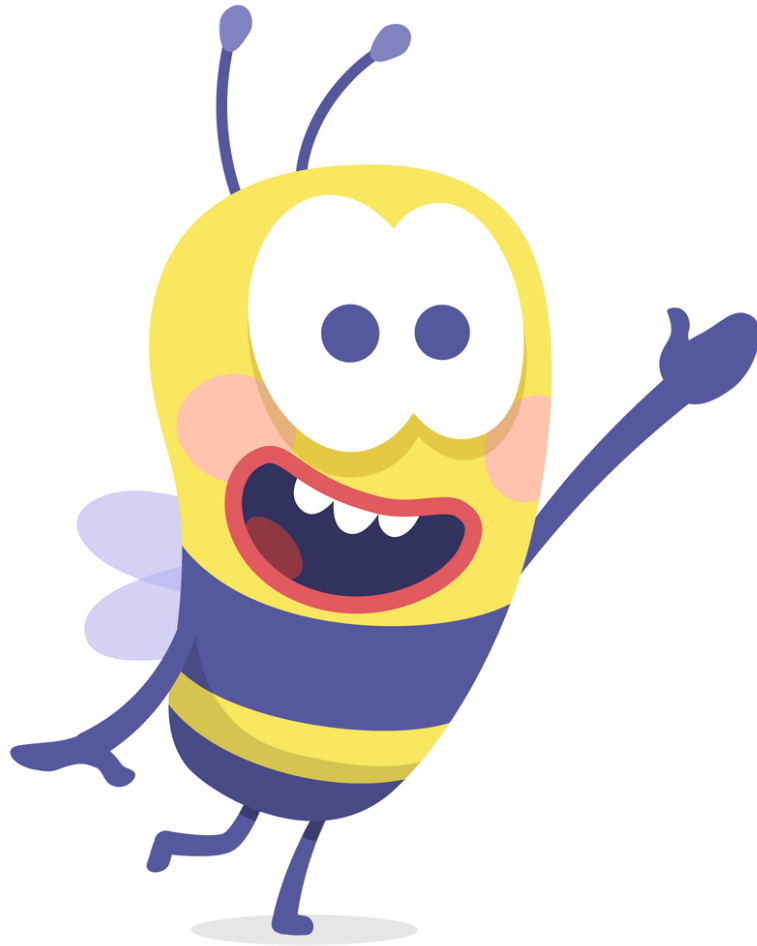
2

Learn the MS₄ Program's minimum control measures and best management practices

3

Recognize ways that we can aid in the MS₄ initiatives.

Buzz Words/Phrases



- Storm Water
- Illicit Discharges
- Pollutants
- MS₄
 - Municipal Separate Storm Sewer System
- MCM
 - Minimum Control Measure
- BMP
 - Best Management Practice
- Run-Off

Goals of MS4



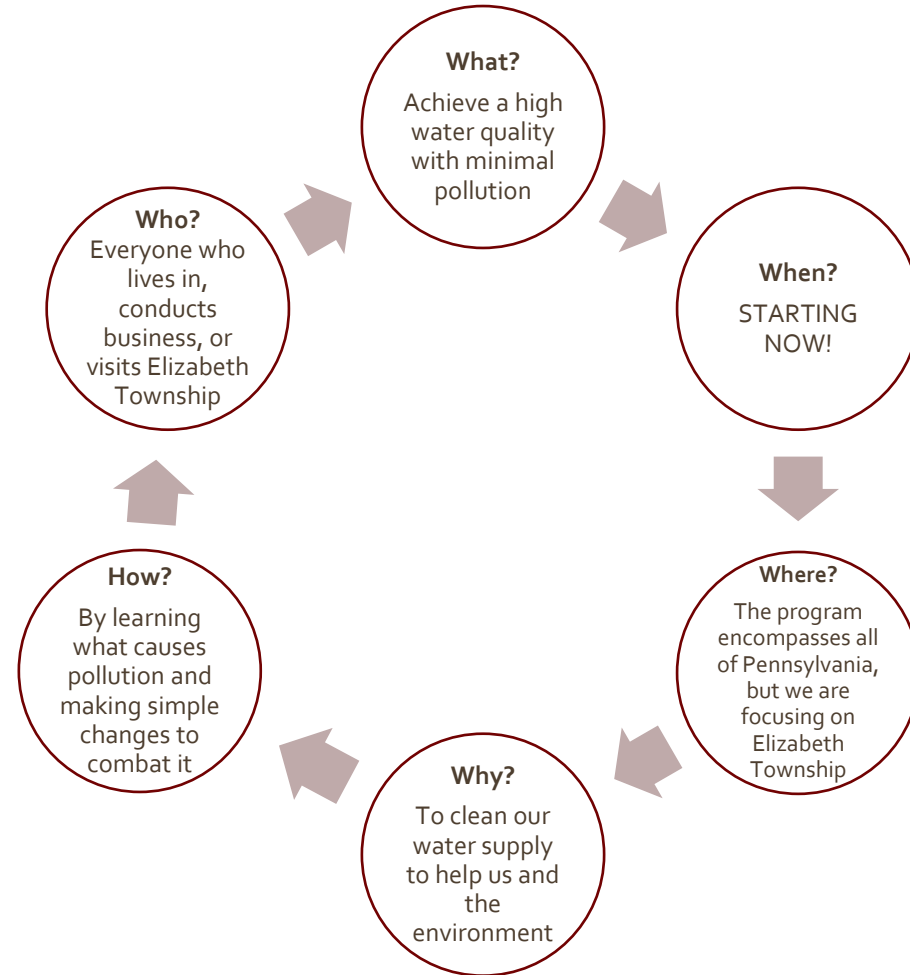
Bring attention to activities that can pollute our water sources and identify how we can decrease pollution



Achieve and maintain a high level of local water quality

What is MS₄?

- MS₄ – Municipal Separate Storm Sewer System
- The premise?
 - Reduce water pollution by ensuring that ONLY storm water goes down our grates and into our drains





What is Storm Water?

- Storm water is classified as water that **ONLY** comes from precipitation.
- What should go down storm drains?
 - Rain
 - Melted snow
 - Other surface runoff and drainage

Quick Check!

Is it stormwater?



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How did you do?

Where Does our Storm Water go?



NATURAL vs. URBAN STORMWATER DRAINAGE



Stormwater infiltrates into the ground
Plants and trees work to absorb
stormwater

Water hits impervious surface and
runs off roofs, streets, parking lots etc.
Runoff goes into the sewers

http://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/technical/alphabetical/water/restoration/?&cid=nrcs143_026903

What is the Problem? - Illicit Discharge

- Illicit discharges
 - Illicit discharges are non-storm water discharges that enter the storm water system
 - Oil, Gas, Antifreeze, etc.
- Why the issue?
 - People letting contaminants reach the storm water drains, or people dumping contaminants in the storm water drains
 - Illicit Connections
 - Wastewater wrongfully entering the storm water system
 - Industrial or Sanitary Connections





Common Storm Water Pollutants

- Sediment
- Trace Metals
- Nutrients
- Toxic Chemicals
- Bacteria
- Chlorides
- Oxygen Demand
- Thermal Impacts
- Oil and Grease

Municipal Permit Requirements

- Implement a storm water management program by following minimum control measures and best management practices
- Track progress toward goals
- Report on progress to PA DEP



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Guidelines for Maintaining Streams in Your Community

 **pennsylvania**
DEPARTMENT OF ENVIRONMENTAL
PROTECTION
Bureau of Waterways Engineering and Wetlands

MCM 1 - Public Education and Outreach

Public Educational and Outreach material
is available on our website.

www.munhallpa.us



PUBLIC COMMENT

MCM 2 – Public Involvement and Participation

Public Involvement and Participation Program

- Clean up events in partnership with Munhall CARES
- Opportunities to host a neighborhood or stream cleanup event with support from the Borough

MCM 3 – Illicit Discharge Detection and Elimination

- What is Illicit Discharge?
 - Illicit discharges are pollutants that make their way into our waters and cause our water to fall below the recommended quality. Pollutants do not need to necessarily be dumped right into a water source to be considered an illicit discharge. Any sort of “dirty” chemical, or item that makes its way to our waters pollutes our waters and causes a mess of other issues. In short, illicit discharges are any discharge not ENTIRELY composed of stormwater that make their way into the stormwater system.

- Common Examples of Illicit Discharge
 - Fertilizer
 - Pet Feces
 - Garbage
 - Diapers
 - Home Improvement Waste



Illicit Discharge – Signs and Examples

Signs of Illicit Discharge

- Water running from drains or pipes when it has not recently rained
- Sudsy or bubbly water
- Foul odor coming from water
- Waste/litter around water site



Would **YOU** feel comfortable using this water?

MCM 3– Illicit Discharge Continued. . .

How You Can Get Involved

- Volunteer to check water ways for any signs of illicit discharges
- Spread the word about the impacts of Illicit Discharge
- Organize a clean up day, to clean up the community of potential discharges
- Report any illicit discharges or actions that cause illicit discharges

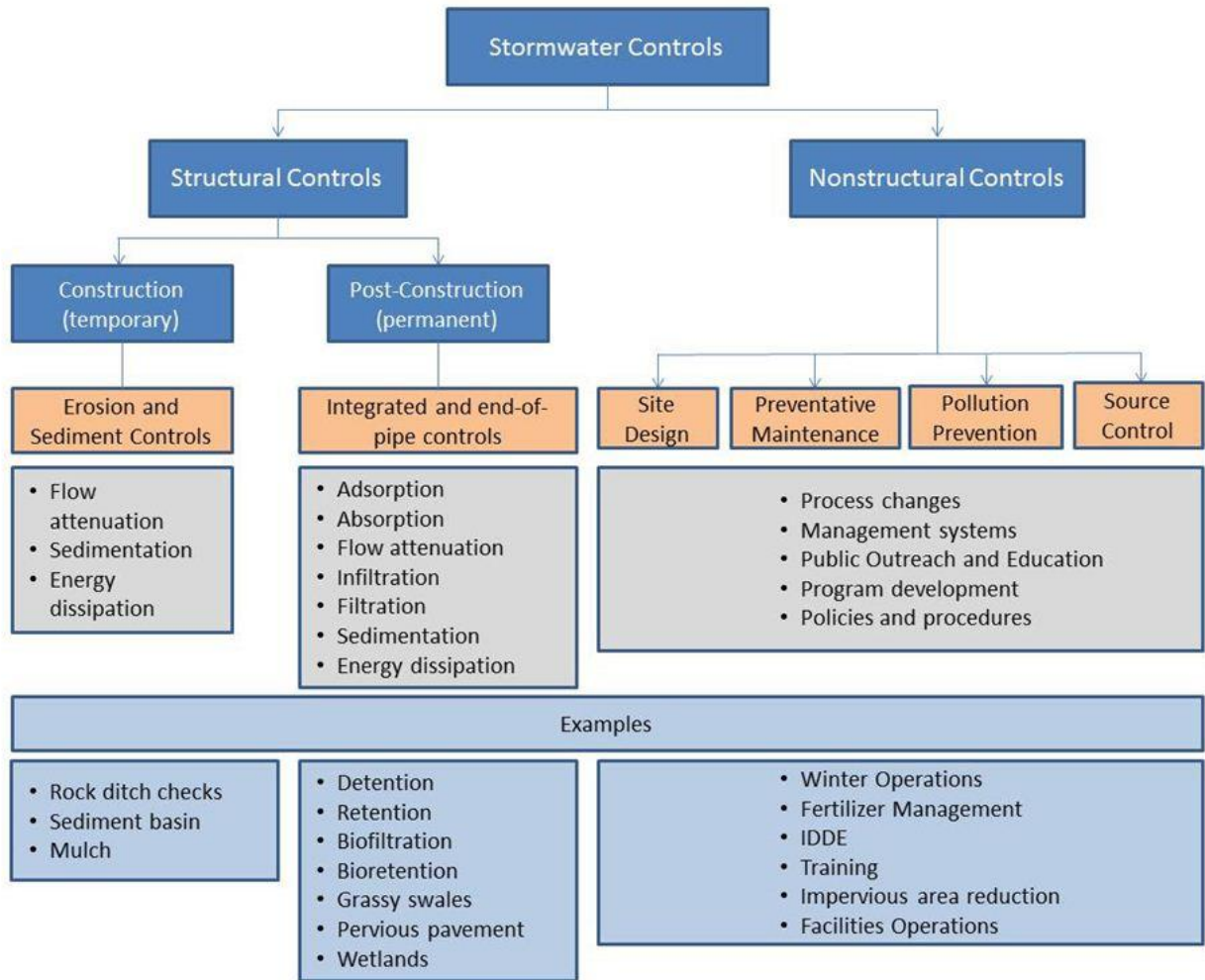


Ways You Can Control Illicit Discharges

- Never dump anything down storm drains
- Use lawn and garden chemicals sparingly; sweep up any excess from driveways, sidewalks and roads
- Repair vehicle leaks; cover spilled fluids with kitty litter then sweep into household waste
- Pick up after your pet and dispose of properly
- Control soil erosion on your property by planting ground cover and stabilizing erosion-prone areas
- Keep grass clippings, leaves, litter, and debris out of street gutters and storm drains
- Direct downspouts onto grassy areas away from paved surfaces
- Use a commercial car wash or wash your vehicle on the grass instead of the driveway
- Dispose of used oil, antifreeze, paints and other household chemicals in an approved manner

Maintain your BMPs!





Storm Water BMP O&M Frequency Guidelines	
Short-term (more frequent)	<u>Routine</u> Visual assessment, litter and debris removal, vegetation management
Long-term (less frequent)	<u>Non-routine</u> Clean out trash and solids, structural repairs, partial rehabilitation
Rare	<u>Major</u> Rehabilitation or rebuild

MCM 5 – Post-Construction Storm Water Management

Our Responsibilities:

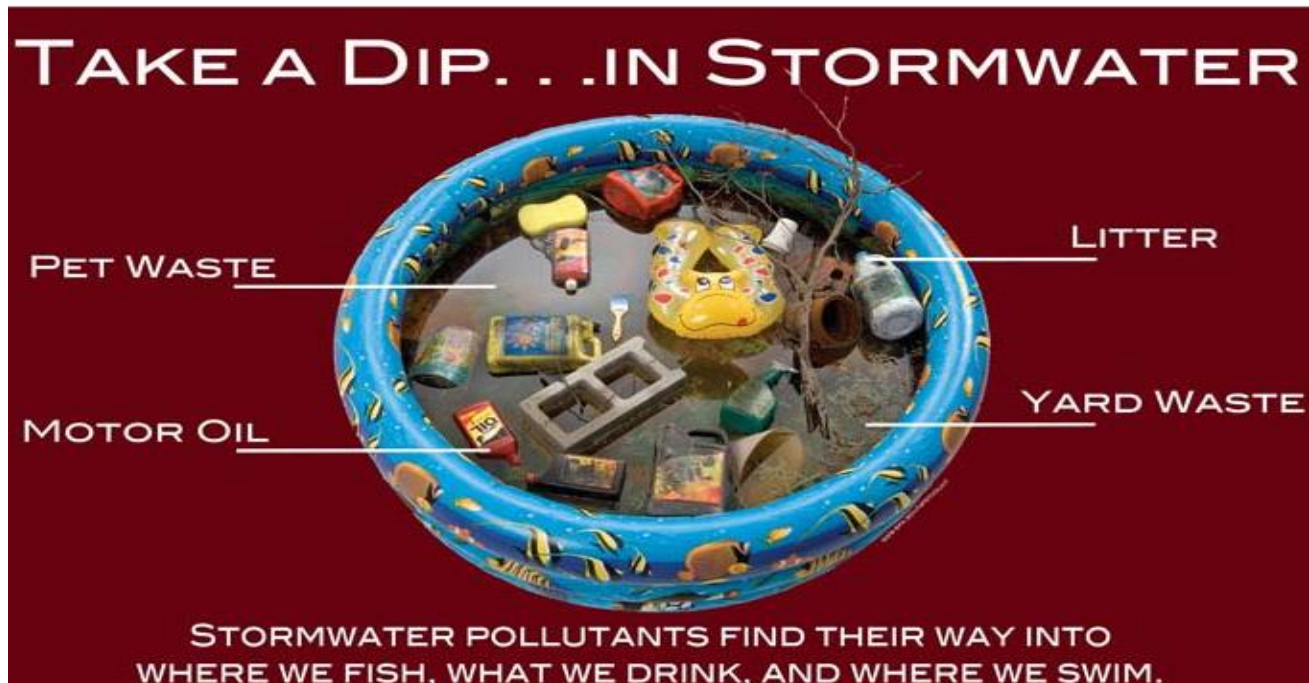
- Adopt PA DEP’s model storm water management ordinance
- Ensure proper operation and maintenance of post-construction controls

First Tier	Second Tier
Establish a minimum amount of storm water to be managed on-site (e.g., a minimum of 0.4 inches of storm water runoff). Require an offset ratio of 1:2 if the developer demonstrates to the applicant that this amount of runoff is completely infeasible to manage on site.	Require an off-set ratio of 1:1.5 for the amount of storm water above the first tier.

MCM 6 – Pollution Prevention and Good Housekeeping

Our Responsibilities:

- Implement O & M program that focuses on pollution prevention including street sweeping, cleaning of catch basins and outfalls that lead to waterways.
- Train community employees on good housekeeping practices
- Educate community on pollution prevention



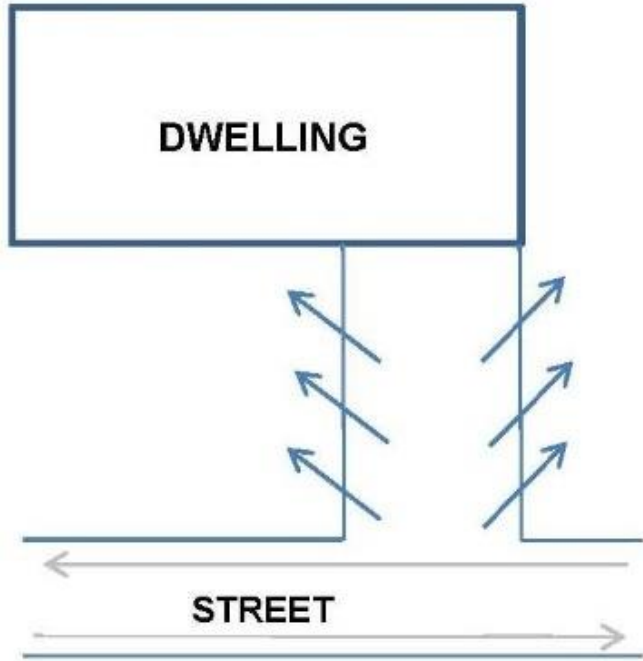
How YOU Can Help!



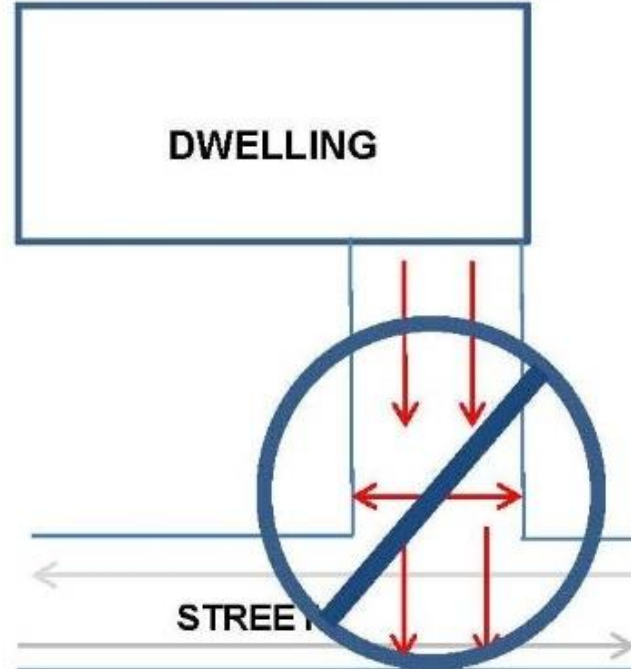
Landscaping

- Control soil erosion; use mulch if necessary.
- Recycle lawn clippings, trimming from trees and other landscapes.
- Employ shutoff devices to prevent irrigation after precipitation.
- Don't over water (excess water transports pollutants off into storm drains).
- Avoid applying fertilizers pesticides, or herbicides during rainy weather.
- Never apply fertilizers or pesticides within 5 feet of pavement, 25 feet of storm inlet, or 50 feet of water body.
- Calibrate fertilizers spreaders to avoid excessive application.
- Don't blow leaves or grass clippings into the gutter. If clippings or leaves are left in the gutter, call for the sweeper to follow up and clean up.
- Keep trash picked up and covers/lids closed

CORRECT SNOW PLOWING



INCORRECT SNOW PLOWING



How YOU Can Help!

Plowing and Street Sweeping

- Pre-applying salt makes snow removal easier.
- Use salt sparingly around buildings and on pavement.



Benefits of our MS₄ Program

Enhanced fishing

Enhanced opportunities for recreation

Reduced flood damage

Drinking water benefits

Navigational benefits

Reduced illness

Enhanced aesthetic value

For Additional Information...

- www.munhallpa.us
- <https://www.dep.pa.gov/Business/Water/CleanWater/StormwaterMgmt/Stormwater/Pages/default.aspx>
- <http://www.stormwaterpa.org/national-perspective.html>

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