Pollution Prevention/Good Housekeeping for Municipal Facilities

Wednesday, March 17, 2010
8:30 am-9:30am
Perrysburg Township

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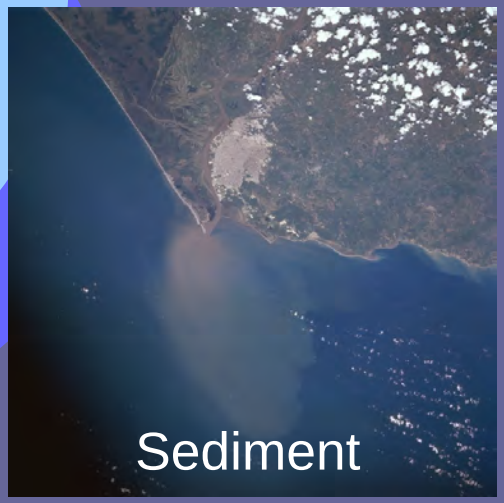
Overview

- Background
  - Stormwater pollution
  - Stormwater pollution prevention
  - Requirements for municipalities
- “Good Housekeeping Practices”
- Site Visit Checklists
- Pollution Prevention Quiz

Background

Stormwater and any pollution in it goes directly to streams without being treated!

What are common SW pollutants?



Common Stormwater Polluting Activities


Vehicle maintenance


Groundskeeping


Road maintenance


Outdoor storage and handling


Vehicle washing

Effects of Stormwater Pollution


Fish kills


Algal blooms (odor)

Public health risks


Negative economic impacts

What is Pollution Prevention/Good Housekeeping?

- Regular activities to reduce pollution in stormwater and streams
- A *required measure* for stormwater permits
- Potential money saver
  - Avoid major repair/clean-up costs

Requirements for Facilities

1. An operation and maintenance program for pollution prevention
2. Stormwater Pollution Prevention Plan (SWP3)
3. Training for municipal employees
4. Goals for the program
   - Known as “Measurable Goals”

Good Housekeeping Practices (GHPs)

"Never put off 'til tomorrow what you can do today!"– Thomas Jefferson

Examples of Good Housekeeping Practices

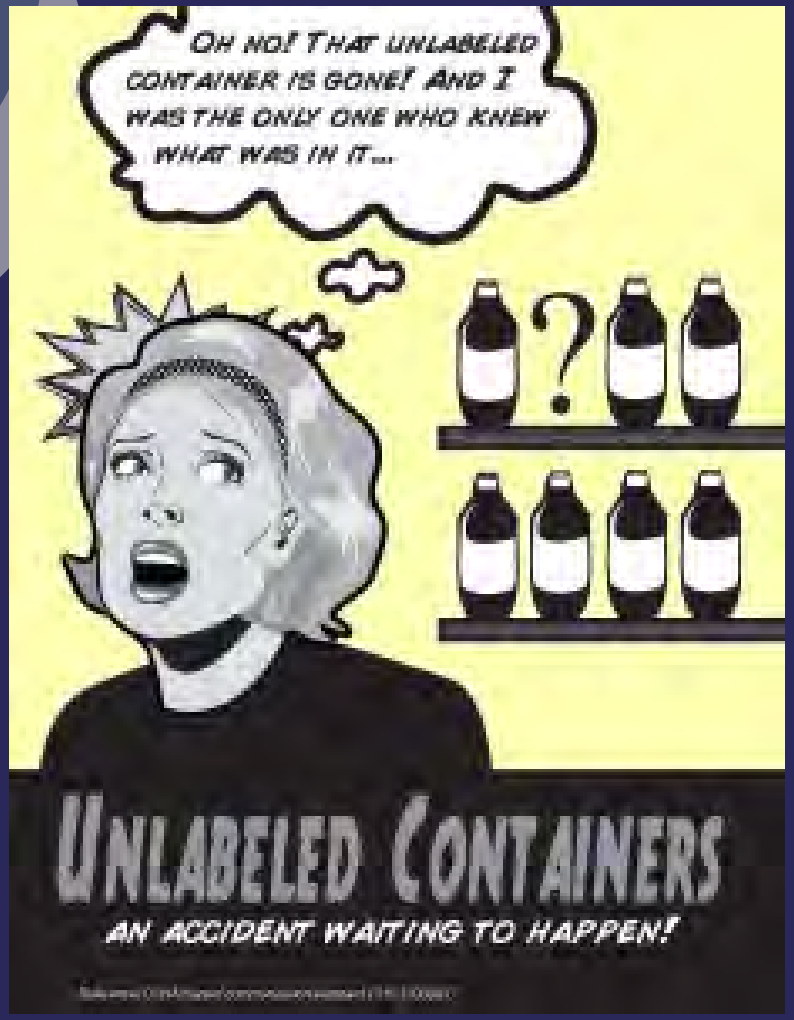
Less Intensive

- Proper storage and disposal of potential pollutants
- Selecting a “point person” at each municipal facility
- Educational materials
- Reduce or replace common pollutants
- Prevent and contain spills
- Vehicle or equipment washing
- Routine site inspections and self-audits
- Stormwater-friendly landscape management
- Road salt storage and snow removal
- Street and drainage maintenance
- Stormwater Pollution Prevention Plans

More Intensive

Proper Storage of Potential Pollutants

Clearly marked and labeled chemicals



Clear aisles with enough space

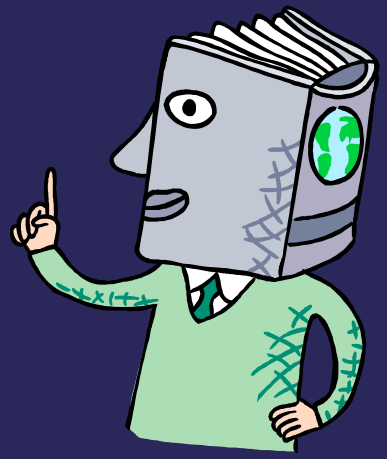
Secondary containment

Proper Disposal of Potential Pollutants

- Hazardous materials or liquids
  - Sealed containers
  - Labeled for disposal
  - Do not:
    - pour into storm drains,
    - put in regular trash, or
    - mix with other materials.
- Non-hazardous materials
  - Keep dumpster lids closed
  - Recycle if possible

Choosing a “Point-Person”

- Point-person should:
  - Be familiar with spill prevention and clean-up
  - Have contacts for Hazmat and local fire department
  - Be available to facility employees who have questions
  - Know locations of streams and storm drains



Educational Materials

- Create your own…
- Examples:
  - Flyers
  - Paycheck/paystub attachments
  - Posters
  - Training manuals

- Or use existing materials

Reduce or Replace Common Pollutants

- Reduce:
  - Fertilizers
  - Pesticides and herbicides
  - Solvents
- Replace with:
  - Look for the “Green Seal™” on products
  - Biodegradable
  - Less toxic antifreeze
  - Low-phosphorus fertilizers

Prevent and Contain Spills

Spill Response Plan (poster)

SPILL RESPONSE PLAN - IN CASE OF A SPILL OR LEAK

1. BE SAFE	- If necessary wear appropriate safety gear. Is the spill a hazardous substance? Ensure availability of MSDS to confirm correct handling of product. Include where safety gear is located onsite or in which vehicle.
2. STOP THE SOURCE	- Locate the source of the spill and stop any contributing activities eg. turn off equipment, plug the leak, upright the container.
3. PROTECT STORMWATER	- Block access to the stormwater system with drain covers, shut-off valves, pipe bungs etc. - Confine or divert the spill with sandbags, booms or other suitable material. Specify where drain covers etc can be found. If a mobile company indicate which vehicle onsite has the spill response kit.
4. NOTIFY	- Tell your supervisor/site foreman/manager and other agencies if needed. - For advice or assistance call: **North Shore City Council's 24hr Actionline 486 8600** **ARC's 24hr Water Pollution Hotline 377 3107**
5. CLEAN UP	- Clean up all residues of the spill without allowing washwater or sweepings to get into the stormwater system or the soil. - Pump or sweep to a safe container or area. Do you need to neutralise hazardous substances? If so include details here. If appropriate include contact numbers of sucker trucks or other contractors you may require during the cleanup.
6. DISPOSE RESPONSIBLY	- Use a responsible waste disposal contractor to remove contaminated material and clean-up gear. Include phone numbers of contractors you use. Specify where the waste should be disposed. Remember hazardous wastes eg. oily rags/absorbents cannot go in your normal waste collection.
7. RESTOCK AND REVIEW	- Immediately replace all used clean-up material. - Assess the cause of the spill and take any steps necessary to prevent reoccurrence. - Have a site meeting to discuss the reason for the spill. Discuss at next team meeting. If appropriate include numbers for companies that can restock your spill kit.

Spill Response Kits

Other supplies: broom, shovel, safety goggles

Vehicle and Equipment Washing

Outdoor On Impervious Service

Better

Outdoor On Grass or Pervious Service

Which one is best for Pollution Prevention?

Best

Indoors

Commercial Car Wash

Routine Site Inspections

- How often?
- What to look for (outdoors vs. indoors):

Leaks

Spills

Pollution

- What to use:
  - Checklists
  - Spill report forms

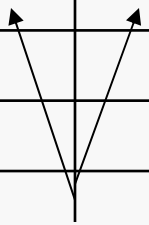
Site Visit (Self-Audit) Checklist

Vehicle/Equipment Maintenance			
Spill Prevention & Cleanup:	YES	NO	N/A
Spill prevention plan			
Maintenance activities performed inside			
Are spills cleaned up immediately?			
Berms or other measures used to contain spills			
Are "dry shop" techniques used?			
Are absorbents used for spills?			
Drip pans used during maintenance			
Spill cleanup restocking schedule			
What is the schedule?			
Funnel lids used on drums for liquid waste			

Using the Site Visit Checklist

Vehicle/Equipment Maintenance

Spill Prevention & Cleanup:	YES	NO	N/A
Spill prevention plan			
Maintenance activities performed inside			
Are spills cleaned up immediately?			
Berms or other measures used to contain spills			
Are "dry shop" techniques used?			
Are absorbents used for spills?			
Drip pans used during maintenance			
Spill cleanup restocking schedule			
What is the schedule? **Example: Clean-up materials are checked for restocking bi-monthly.**			
Funnel lids used on drums for liquid waste			



Fill in YES or NO for each appropriate category

Stormwater Friendly Grounds Management

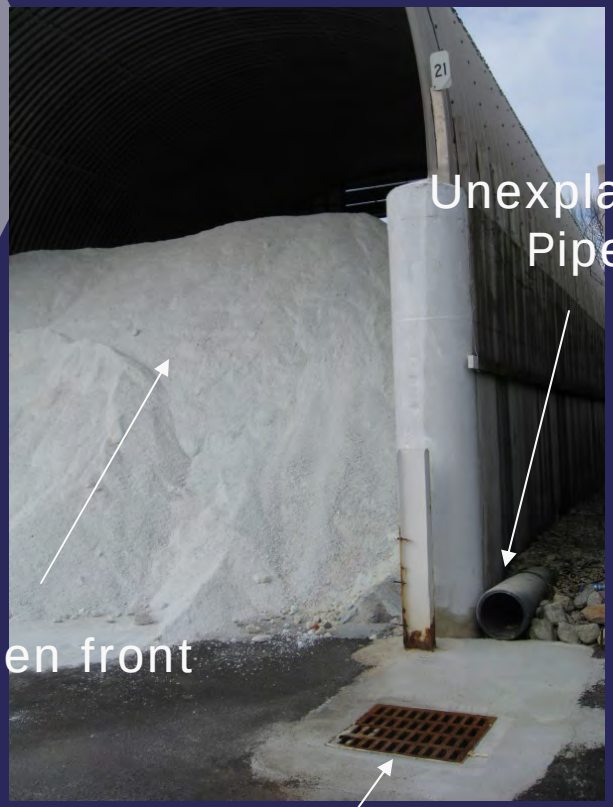
- Design landscapes that mimic natural processes
- Choose the least toxic pesticide, herbicide, or fertilizer
- Avoid applying chemicals during high winds or before a rain event
- Provide pet waste stations at municipal parks

Check those chemical pesticide labels!

Less Toxic

More Toxic

Road Salt Storage



vs.

Road Salt Alternatives

De-icer	Lowest Temperature	Cost*	Environmental Impact
Calcium Chloride	-25 degrees F	Flake $290/ton, pellet $340/ton	Less salt required
			No cyanide
			Contains chlorine
Magnesium Chloride	5 degrees F	Flake $260/ton, pellet $300/ton	Least toxic deicing salt
			May cause tracking or discoloration
Sodium Chloride ("rock salt")	15 degrees F	$35/ton	May contain cyanide
			Contains chlorine
Urea (fertilizer)	20 to 25 degrees F	$280/ton	Contains excess nutrients
			Less Corrosive
Calcium Magnesium Acetate (CMA)	22 to 25 degrees F	$2,000/ton	Less toxic
Sand	Does not melt snow or ice	$15/ton	Accumulates in streets and streams
			Needs to be swept

Sources: *Snow, Road, Salt and the Chesapeake Bay* by Tom Shuler, Center for Watershed Protection *U.S. EPA *Road Salt Application and Storage* Factsheet

Snow Removal

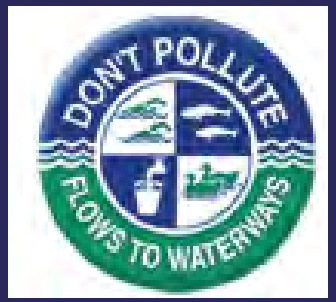
- Determine proper snow dumping locations
  - Away from sensitive ecological areas
  - Away from bodies of water (streams, ponds, catch basins)
  - Sufficient space for estimated snowfall
- Adjust salt (or alternative) rates
  - Take road specifications into account
  - Avoid over-salting

Street Sweeping

- Sweeping schedule:
  - Target industrial areas and major roads
  - Monitor weather activity
    - Sweep prior to rainfall
    - Humid/damp weather prevents excess dust
- Slow broom speed on roads near streams
- Properly dispose of collected sweepings
  - Must be handled like solid waste

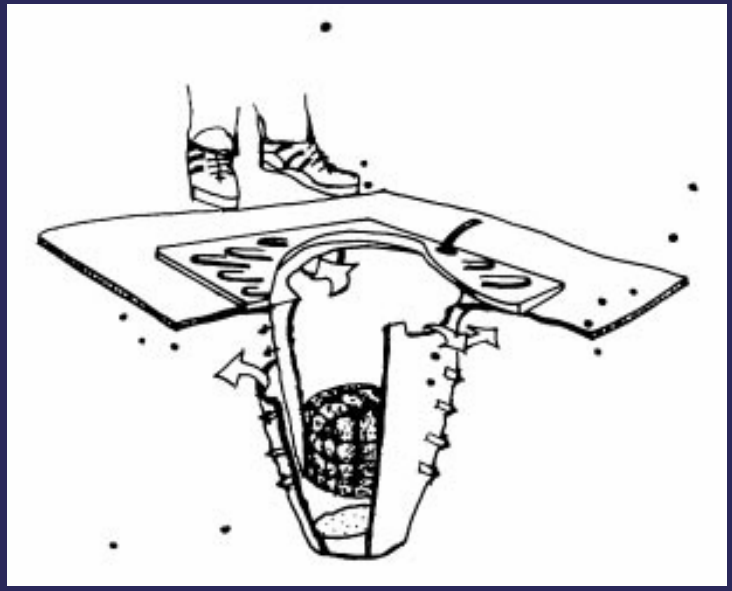
Storm System Maintenance: Storm Drains

- Create a cleaning schedule
  - Monthly clean-outs are ideal, but not always practical
  - Minimum of once or twice a year
  - Target industrial or high-risk areas first
- Look for illicit discharges or debris
- Apply new storm drain stickers/stencils when needed



Storm System Maintenance: Storm Drains (Continued)

- Consider catch basin inserts
  - Pros:
    - catch more materials
    - easy to install into existing drains
  - Cons:
    - require more frequent clean-outs
    - Typically handles flow rates of less than 10 gpm



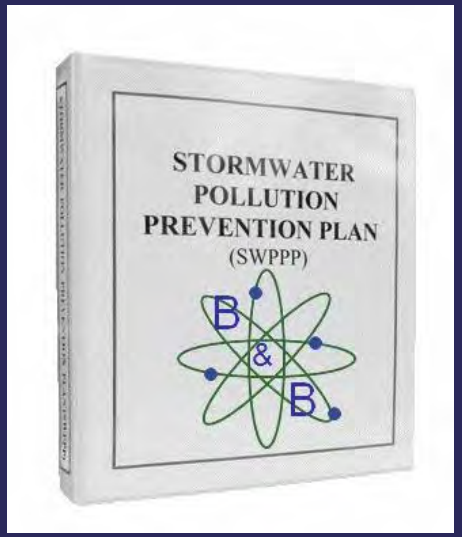
Road Repair and Maintenance

- Cover stockpiles of materials and store away from storm drains
- Don’t apply paint when rainy or windy

- Properly handle and dispose of slurry/cuttings
- Do not wash excess concrete into storm drain

Stormwater Pollution Prevention Plan (SWP3)

- Purpose:
  - Describes the GHPs for the facility
  - Incorporates self-monitoring/auditing
  - Identifies possible pollution sources
- Should:
  - Be kept on site
  - Contain storm drain locations
  - Be up-to-date
  - Identify point-person



SWP3: Site Maps

- Location of drains
  - Indoor and outdoor
  - Where they connect (storm sewer, sanitary sewer, or septic system)
- Location of streams, ponds, or other sensitive environmental areas
- Outdoor storage of materials
- Stormwater management practices located on facility grounds

Other Issues EPA Looks for:

- 2 options for used oil
  - Burn on-site
  - Have it hauled away by EPA licensed hauler
- Do not mix used oil with anything else
- Using broken asphalt as rip-rap in outfalls
- Documenting training and site inspections
  - Who, what, when

Pollution Prevention/Good Housekeeping Quiz:
Examples of Correct Practices

What are the GHPs in this photo?

Covered outdoor storage

What are the GHPs in this photo?

What are the GHPs in this photo?

What are the GHPs in this photo?

Pouring using a funnel

Proper warning sign to show contents are hazardous material

Secondary containment

Pollution Prevention/Good Housekeeping Quiz:
Examples of Incorrect Practices

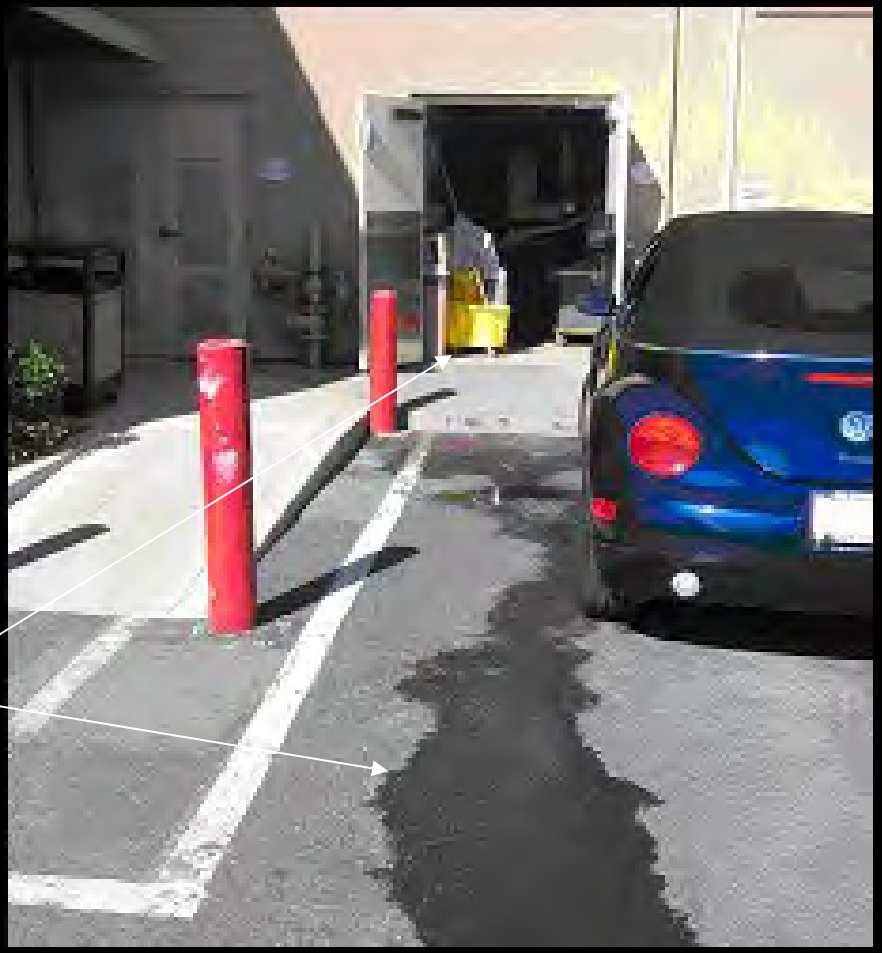
What's wrong with this picture?

What's wrong with this picture?

What's wrong with this picture?

Washing outdoors on impervious pavement

What’s wrong with this picture?



Mop bucket water dumped outside

What’s wrong with this picture?

What's wrong with this picture?

What's wrong with these pictures?

Garbage debris dumped in storm drain

Paint spill into storm drain

What's wrong with this picture?

What's wrong with this picture?

No storm drain sticker or stencil

Questions?