



Community Partners for Clean Streams



SERIES #3: Maintaining Equipment and Vehicles



COMMUNITY PARTNERS FOR CLEAN STREAMS

NOTE: This handbook is one in a series of handbooks that describe specific practices businesses can use to protect water quality. A complete list of all handbooks and fact sheets available through the Community Partners for Clean Streams program is provided on the inside of the back cover. To obtain other handbooks in this series contact the Program Manager at the address or phone number provided below.

Becoming a "Community Partner for Clean Streams"

We hope you'll join with the Washtenaw County Drain Commissioner's office and other area businesses and institutions by participating in the Community Partner for Clean Streams program. Through this program, businesses help protect the Huron River and local streams.

To participate in the program, fill out the checklist in the back of this handbook. Send it to the address below and our staff will work with you to become a Community Partner for Clean Streams. In return for your effort, we'll publicly acknowledge your business through newspaper articles, displays and speaking engagements. We'll also encourage consumers to look for the Community Partners logo at your business when they select services.

Washtenaw County Award for "Environmental Excellence"

By becoming a Community Partner, your business will have completed the water quality criteria for Washtenaw County's "Environmental Excellence" award. This annual award is presented to businesses in the County that proactively protect the environment. For more information about this award program, contact the Community Partners Program Manager:

**Community Partners for Clean Streams Program Manager
Washtenaw County Drain Commissioner's Office
110 N. Fourth Ave.
Ann Arbor, MI 48107-8645**

**Phone: (313)994-8344 or 994-2525
Fax: (313)994-2459**

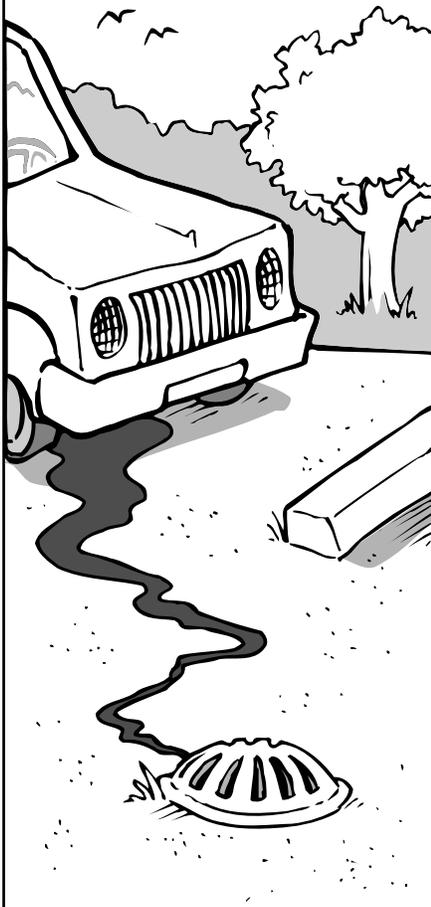
Handbook Design and Illustration by David Zinn

Storing and Maintaining Equipment and Vehicles

Why be concerned?

Dirty or leaking equipment and vehicles can deposit oil, grit, coolants, and other pollutants onto the ground. From there, these pollutants can filter through soils to the ground water table or be washed by stormwater into a lake, river or stream.

In addition, spills are common during fueling and other maintenance activities. Designing outdoor maintenance areas to completely contain leaks and spills is an important part of protecting water quality.



Eight Steps to Preventing Water Pollution

1 Regularly maintain equipment and vehicles

- Keep equipment and vehicles clean and regularly inspect them for leaks. Try to immediately repair and clean up any leaks that are found. Wash equipment and vehicles according to the recommendations in **Series #3, Fact Sheet 3.2**.
- Calibrate equipment frequently to ensure proper application patterns and rates.
- Drain all the fluids from equipment and vehicles kept in storage. Remove fluids only in paved areas that are designed to contain spills. Recycle or otherwise properly dispose of drained fluids.

- Pave the area with concrete to prevent pollutants from filtering into the ground. Avoid the use of asphalt, since fuel will cause it to deteriorate.

- If necessary, construct curbs or berms around the perimeter to contain spills and prevent stormwater from washing through the area.

- Connect drains to a dead-end holding area or the sanitary sewer. Don't allow storage, fueling or other maintenance areas to drain to any part of the stormwater management system. If you aren't sure where a drain leads, call the Drain Commissioner's office and request that it be dye-tested. Before allowing fluids to drain to the sanitary sewer, call your local wastewater treatment plant and make sure they can be accepted.

2 Perform maintenance activities only in designated areas

Maintain equipment and vehicles indoors, if possible. If maintenance activities must take place outdoors, make sure they're performed only in designated areas that are clearly marked and designed to prevent water pollution.

- Equip drains with shutoff valves in case of a spill and regularly inspect these valves to ensure they work. Alternatively, keep rubber mats or temporary plugs on hand to block drain inlets. If plugs are used, employees must be trained in advance on how to use them.

3 Properly design outdoor storage, fueling and other maintenance areas

- Don't locate outdoor storage or maintenance areas within a floodplain or within 100 feet of any part of the stormwater management system.

- Cover storage and maintenance areas to keep rainwater from entering and mixing with pollutants. If rainwater accumulates, it will need to be pumped out and disposed of properly. For more information about disposing of accumulated rainwater, see **Series #1, Fact Sheet 1.1**.

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4 Keep service areas clean and take steps to prevent spills

Keep drip pans and absorbent materials readily available, appropriate to the types and quantities of materials that could spill. If possible, buy absorbent materials that can be reused or recycled: avoid the use of cat litter, since it's relatively inabsorbent (which increases waste) and must be landfilled. For more information about preventing and cleaning up spills, see **Series #1, Fact Sheet 1.2**.

When cleaning floors, take steps to prevent pollutants from entering the storm sewer system. The following three-step process is recommended:

1. clean up spills with absorbent materials
2. sweep the floor
3. wet mop and recycle wash water or dispose of it via the sanitary sewer.

5 Prevent overfilling gas tanks

Gasoline and other fuels are extremely toxic and can be highly flammable. Unfortunately, spills are common during fueling activities.

- Make sure that dispensing hoses are equipped with automatic shutoff valves and that these valves work.
- Post signs instructing fuel pump operators not to overfill gas tanks or leave them unattended while fueling.
- Keep temporary fuel tanks in a bermed, paved area. Design the area to completely contain at least 110% of the tank's total volume.
- Protect the area surrounding the fill pipe for underground gas tanks to prevent any spills that occur from reaching the soil or groundwater (as required by state law).

6 Properly store, use and dispose of maintenance products

For information about storing maintenance products, see **Series #1, Fact Sheet 1.1**. For information about using and disposing of them, see **Series #7**.

7 Completely drain and recycle used oil filters

A used oil filter typically contains 1/3 of a quart of oil and sludge, as well as acid and heavy metals. If not properly drained, used filters can leak this contaminated oil into the environment.

Drain used oil filters for at least 24 hours and then recycle both the oil and filters. If you can't recycle them, filters can be put into the trash provided they're *not* terne-coated. (The EPA classifies oil and transmission filters as non-hazardous as long as they *aren't* terne-coated and they *are* completely drained.)

8 Discharge equipment condensate and "blowdown" to the sanitary sewer

Air compressors and other equipment sometimes produce small quantities of automatic blowdown water, which contains lubricating oil and other pollutants. Prevent blowdown water from soaking into the ground or running into the storm sewer system. Connect blowdown to the sanitary sewer or, if the compressor has a frequent small bleed, use a drip pan or catchment to collect the water. Oil separator systems are also available for blowdown water.

GETTING HELP

Michigan Department of
Environmental Quality (800) 662-9278

Washtenaw County DPW -
Pollution Prevention
Program (313) 971-4542

Community Partners for
Clean Streams (313) 994-8344

Washing Equipment and Vehicles

Why be concerned?

Washing equipment and vehicles can generate significant amounts of polluted runoff. In addition to detergent, oil, grease, heavy metals and other pollutants, wash water can contain grease cutters, acids and other toxic chemicals. Take steps to prevent untreated wash water from soaking into the ground or from entering the stormwater management system.



Minimizing Runoff

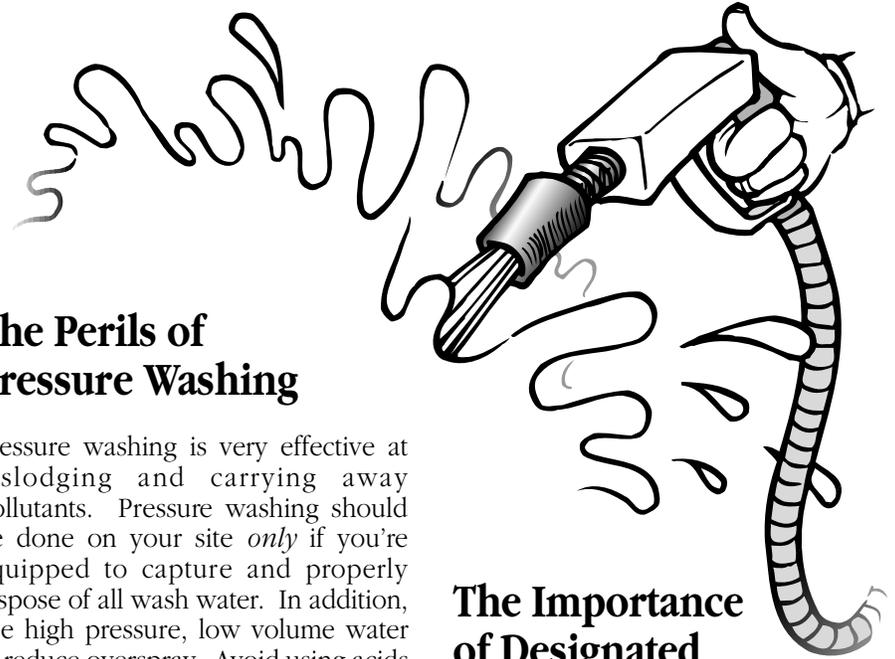
Clean field equipment and vehicles with as little water as possible. For example, remove dirt and grit using wire brushes or other dry methods before applying solvent or water. Be sure to collect the dislodged material and dispose of it properly. To determine proper disposal, call the facility where you expect the material to be taken.

The Perils of Pressure Washing

Pressure washing is very effective at dislodging and carrying away pollutants. Pressure washing should be done on your site *only* if you're equipped to capture and properly dispose of all wash water. In addition, use high pressure, low volume water to reduce overspray. Avoid using acids or other harsh cleaning products and detergents that contain phosphates.

Washing: It's An Inside Job

Businesses that generate wash water outdoors are subject to State of Michigan permit requirements. In view of state permit requirements and potential threats to the environment, if you can't wash equipment and vehicles indoors it's best to take them to a commercial washing facility.



The Importance of Designated Wash Areas

If you must wash equipment or vehicles on-site, wash them *only* in clearly marked, designated areas that are designed to properly manage waste water. Post signs that prohibit other maintenance activities and washing with solvents.

Never locate wash areas within a floodplain or within 100 feet of a drinking water well, wetland, lake, stream or any other part of the stormwater management system.

Managing Wash Water

Discharge wash water only to the sanitary sewer, an enclosed holding tank, or a grassy area where the water will be *contained*. Don't allow it to drain off-site via a roadside ditch, storm drain, stream, or any other part of the stormwater management system. (Discharging wash water off-site requires a permit from the Michigan Department of Environmental Quality.)

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- Before discharging wash water to the sanitary sewer, call your local wastewater treatment plant and make sure it can be accepted. Certain materials are prohibited due to health and safety risks. In addition, water used to wash muddy trucks or equipment can contain high volumes of sediment, which can clog sewer lines.

- When producing wash water that can't be discharged to the sanitary sewer, drain the area to an enclosed holding tank. The tank's contents will need to be removed periodically by a licensed waste hauler. While businesses that use a holding tank incur the cost of regular pumpouts, they avoid the risk of environmental clean-ups costing thousands of dollars.

- Install an oil/water separator to remove oil and grit from runoff before it's routed to a holding tank or the sanitary sewer. For more information about oil/water separators, see **Series #2, Fact Sheet 2.2**.

- If you're washing relatively clean vehicles *with water only*, wash water can be diverted to a large grassy area. This will allow it to filter into the ground. *Be aware, however, that with this method, any dislodged pollutants or cleaning products that are used can also filter through to drinking water supplies.*

Alternatives to Engine Cleaning

- Avoid cleaning engines for aesthetic purposes only.
- Instead of cleaning engines to locate oil leaks, try using rags and solvent to clean small portions of the engine.

GETTING HELP

Michigan Department of
Environmental Quality (800) 662-9278

Community Partners for
Clean Streams (313) 994-8344

Waste Water Treatment Plants:

City of Ann Arbor (313) 994-2840
City of Ypsilanti (313) 484-4600

Community Partners for Clean Streams WATER QUALITY ACTION PLAN

SERIES #3: MAINTAINING EQUIPMENT AND VEHICLES Fact Sheets 3.1 and 3.2

Completing Your Water Quality Assessment and Action Plan

To create your own "Water Quality Action Plan", please fill out the following checklist (instructions are included on the other side of this page). The "Actions" in this checklist directly correspond to recommendations made within this handbook. If you have any questions or would like help completing this form, please contact the Community Partners for Clean Streams Program Manager at (313)994-8344 or (313)994-2525. Send completed checklists to:

Community Partners for Clean Streams
Washtenaw County Drain Commissioner's Office
110 N. Fourth Ave.
Ann Arbor, MI. 48107-8645
Fax: (313)994-2459

NOTE: To become a "Community Partner for Clean Streams", all checklists that apply to your business must be filled out and returned. A complete listing of all program handbooks/checklists is provided on the inside of the back cover. To obtain copies, contact the Community Partners Program Manager.

Business Information

Business Name: _____

Type of Business: _____ No. of Employees: _____

Address: _____ Zip: _____

Contact Person: _____ Title: _____ Phone: _____

Water Quality Action Plan prepared by: _____ Date: _____

Business Activities That Can Affect Water Quality

Please check the activities that your business is responsible for:

- | | | |
|---|--|--|
| <input type="checkbox"/> Storing materials | <input type="checkbox"/> Maintaining buildings/pavement | <input type="checkbox"/> Maintaining landscapes |
| <input type="checkbox"/> Spill containment and response | <input type="checkbox"/> Maintaining constructed stormwater controls | <input type="checkbox"/> Site design and/or construction |
| <input type="checkbox"/> Managing wastes | <input type="checkbox"/> Managing employees | |



Directions for Completing this Checklist (see sample below):

1. For each action, check the appropriate box in the ASSESSMENT column (*Not Applicable, Always, or Needs Improvement*).
2. Next, check the corresponding box in the ACTION PLAN column (*Plan to Continue or Plan to Improve*).
3. For every current *and* proposed action, indicate who will do it and in when.
4. If possible, provide additional information (about both current *and* proposed activities) in the space preceded by the word "Action(s)". If insufficient space has been provided, please feel free to attach extra pages.
5. If the action requires ongoing employee training or commitment from management, check that box as a reminder to include it in your employee education activities.
6. Detach the checklist from this handbook and return it to Community Partners for Clean Streams!

EXAMPLE	ASSESSMENT	ACTION PLAN
<p>1. Steps are taken to minimize the amount of potentially polluting materials and wastes kept in storage.</p>	<p> <input type="checkbox"/> Not applicable <input type="checkbox"/> Always <input checked="" type="checkbox"/> Needs improvement </p>	<p> <input type="checkbox"/> Plan to continue <input checked="" type="checkbox"/> Plan to improve </p>
<p>Who: Purchasing Dept./Facilities Manager</p>		
<p>Schedule: As applicable</p>		
<p>Action(s): Deicing chemicals will be purchased in smaller quantities and stored in water-proof, leak-proof containers</p>		
<p><input type="checkbox"/> Requires ongoing education/commitment</p>		

SERIES #3: MAINTAINING EQUIPMENT AND VEHICLES
(Fact Sheets 3.1 and 3.2)

ASSESSMENT

ACTION PLAN

1. The least hazardous products and procedures are identified and used, whenever possible.

- | | |
|--|---|
| <input type="checkbox"/> Not applicable | |
| <input type="checkbox"/> Always | <input type="checkbox"/> Plan to continue |
| <input type="checkbox"/> Needs improvement | <input type="checkbox"/> Plan to improve |

Who: _____

Schedule: _____

Action(s): _____

Requires ongoing education/commitment

2. Vehicles and equipment are regularly inspected for leaks; any leaks that are found are repaired immediately.

- | | |
|--|---|
| <input type="checkbox"/> Not applicable | |
| <input type="checkbox"/> Always | <input type="checkbox"/> Plan to continue |
| <input type="checkbox"/> Needs improvement | <input type="checkbox"/> Plan to improve |

Who: _____

Schedule: _____

Action(s): _____

Requires ongoing education/commitment

3. Application equipment (e.g., salt, irrigation and fertilizer) is regularly calibrated to ensure proper coverage patterns and rates.

- | | |
|--|---|
| <input type="checkbox"/> Not applicable | |
| <input type="checkbox"/> Always | <input type="checkbox"/> Plan to continue |
| <input type="checkbox"/> Needs improvement | <input type="checkbox"/> Plan to improve |

Who: _____

Schedule: _____

Action(s): _____

Requires ongoing education/commitment

4. Washing and other maintenance activities are performed *only* in designated areas that drain to the sanitary sewer or an enclosed holding tank.

- | | |
|--|---|
| <input type="checkbox"/> Not applicable | |
| <input type="checkbox"/> Always | <input type="checkbox"/> Plan to continue |
| <input type="checkbox"/> Needs improvement | <input type="checkbox"/> Plan to improve |

Who: _____

Schedule: _____

Action(s): _____

Requires ongoing education/commitment



5. **Fueling, washing and other maintenance areas are covered, paved and designed to contain wash water and/or spills.**

- Not applicable
- Always Plan to continue
- Needs improvement Plan to improve

Who: _____

Schedule: _____

Action(s): _____

Requires ongoing education/commitment

6. **Fluids are completely drained from equipment and vehicles kept in long-term storage.**

- Not applicable
- Always Plan to continue
- Needs improvement Plan to improve

Who: _____

Schedule: _____

Action(s): _____

Requires ongoing education/commitment

7. **Vehicle/equipment storage areas are designed to contain leaks and spills. If storage areas aren't covered. Any rainwater that accumulates is disposed of properly.**

- Not applicable
- Always Plan to continue
- Needs improvement Plan to improve

Who: _____

Schedule: _____

Action(s): _____

Requires ongoing education/commitment

Additional Comments:

COMMUNITY PARTNERS FOR CLEAN STREAMS FACT SHEETS

FACT SHEET: STORMWATER RUNOFF AND WATER QUALITY

SERIES #1: HOUSEKEEPING PRACTICES

Fact Sheet 1.1: Storing Materials and Wastes
Fact Sheet 1.2: Preventing and Cleaning Up Spills

SERIES #2: MAINTAINING ENGINEERED STORMWATER CONTROLS

Fact Sheet 2.1: Catch Basin Care
Fact Sheet 2.2: Oil/Water Separators
Fact Sheet 2.3: Maintaining Stormwater Management Systems

SERIES #3: MAINTAINING EQUIPMENT AND VEHICLES

Fact Sheet 3.1: Storing and Maintaining Equipment and Vehicles
Fact Sheet 3.2: Washing Equipment and Vehicles

SERIES #4: MAINTAINING BUILDINGS AND PAVEMENT

Fact Sheet 4.1: Outdoor Pressure Washing
Fact Sheet 4.2: Maintaining Building Facades
Fact Sheet 4.3: Maintaining Paved Areas
Fact Sheet 4.4: Using and Storing Deicing Materials
Fact Sheet 4.5: Cooling Water Systems

SERIES #5: MAINTAINING LANDSCAPES

Fact Sheet 5.1: Maintaining Healthy Lawns, Shrubs and Trees
Fact Sheet 5.2: Using Fertilizer
Fact Sheet 5.3: Integrated Pest Management
Fact Sheet 5.4: Using Pesticides

SERIES #6: SITE DESIGN AND CONSTRUCTION

Fact Sheet 6.1: Designing Landscapes for Water Quality
Fact Sheet 6.2: Designing Stormwater Management Systems
Fact Sheet 6.3: Clearing and Grading Land

SERIES #7: MANAGING WASTES

Fact Sheet 7.1: Minimizing Waste
Fact Sheet 7.2: Recycling
Fact Sheet 7.3: Waste Disposal

SERIES #8: EDUCATION

Fact Sheet 8.1: Education and Community Leadership

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