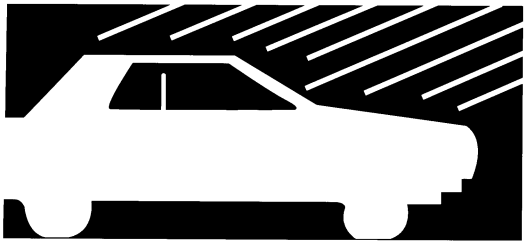
VEHICLE WASHING

Preventing Water Pollution



WATER POLLUTION PREVENTION TIPS FOR VEHICLE WASHING OPERATIONS

Prepared by Oregon Department of Environmental Quality,

Oregon Association of Clean Water Agencies

and your local sewerage agency

What's the Problem?

In the 50s and 60s, we used to think of pollution prevention as keeping polluting substances out of the air and water. We built sewage treatment plants and put scrubbers on smokestacks.

Today, pollution prevention means much more. It means looking at every action to determine:

- how we can use fewer and less harmful substances;
- how we can create fewer waste products;
- how we can reuse or recycle subtances; and
- what disposal alternatives are available to keep these substances out of the sewer sytems, landfills and the air.

Many business activities have the potential to pollute air, water or soil. This booklet focuses on ways to prevent water pollution by conscious reduction, reuse or recycling of chemicals and hazardous substances. Information about other types of pollution prevention is available from the Department of Environmental Quality, your local recycler or your garbage hauler. Many industry groups also offer pollution prevention tips.

Why Is Water Pollution Prevention Important?

It's in everyone's best interest to reduce the amount of chemicals and hazardous substances that flow into the sewer system. It's good for the earth, it's good for our pocketbooks and it's good for our communities.

Sanitary Sewers. The fundamental reason we have to be careful about what goes into sanitary sewers is that *even the best sewage treatment facility has limitations.* Oregon's sewage treatment systems are designed primarily to handle sanitary sewage. Bacteria provide "treatment" by breaking down organic matter in the water. We need to remember that:

- Treatment facilities can't treat many chemicals, so the substances may pass untouched into the environment, This threatens fish, wildlife and vegetation, as well as people using polluted water sources for drinking or recreation.
- Some chemicals can destroy the bacteria in the treatment process — leaving the facility useless. This not only endangers the environment — it means a tremendous expense to community ratepayers.

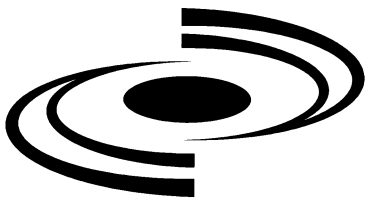
- If the facility receives too much of one type of waste at a time, it will not be able to process the organic matter. Again, this creates environmental hazards, and the community may need to invest in greater treatment capacity.
- Chemicals in the sewage treatment system put system employees at risk. Exposure to chemicals can cause health problems, and some substances may cause explosions and fires.

Storm Sewers. In most Oregon communities, storm drains flow directly into rivers and streams, without passing through a treatment plant. Anything in the storm drain — from leaves to motor oil — can contribute to water pollution. In a few Oregon cities, storm drains feed into the sewage treatment plant. In these cases, pollutants in the storm water can threaten the plant's ability to effectively treat wastewater.

How Can Pollution Prevention Help Businesses' Bottom LIne?

Many businesses find that taking steps to prevent pollution actually saves money.

- Cutting back on chemical use can reduce material costs as well as waste disposal fees.
- Reducing water use means less water down the drain — and lower sewer and water fees.
- Reducing chemical use can create a safer workplace, with fewer accidents and lower insurance costs.
- Ultimately, we will all pay if we need to build more treatment system capacity. We all save by keeping materials out of the sewer system.



Good Housekeeping

✔ ***Be conscious of chemical use.***
Even the least toxic chemicals can be harmful if used incorrectly. Chemicals can be dangerous to employees and customers, as well as to the environment. Don't be careless about any aspect of chemicals – from initial use to disposal.

✔ ***Reduce chemical use whenever possible.***
Many businesses have found that they have saved money by adopting new procedures that require less chemical use.

Whenever possible – substitute. Many manufacturers are creating new products with less environmental impact. Avoid taking free product samples unless you are certain what's in them.

✔ ***Use good housekeeping practices.***

- Sweep, vacuum and mop floors rather than hosing them down, and don't leave sweepings outside where rain can wash them into storm drains. Do not send wash water down storm drains.
- Clean up spills immediately.
- Sweep parking lots in the fall, before the rains come. Rubber from tires and other products from automobiles contribute to water pollution.

✔ ***Store chemicals and liquids sensibly.***

- Store chemicals so they can be found and identified easily.
- Follow manufacturers' directions for all product storage.
- Consider requirements for temperature, air circulation, length of time and other storage factors.
- Make sure products are sealed properly and stored safely.
- Buy smaller quantities, more frequently. Avoid purchasing products that won't be used.
- Provide secondary containment for all liquids. Place original containers inside a pan, jar or bottle capable of capturing all the contents in case of a leak. Place large containers on spill control pallets or totes.

✔ ***Spill prevention and control.***

- Use chemicals only in designated areas where spills can be contained.
- Avoid moving chemicals long distances from storage to use.
- When cleaning up spills, remove liquids with rags and sweep the floor with a dry absorbent; pour mop water into an oil/water sepa rator before sending it down the drain. Keep absorbent materials on hand to handle different types of substances.

✔ ***Train employees.***
All employees – whether or not they work with chemicals – should receive training about the products in use, storage requirements, spill procedures and potential hazards.

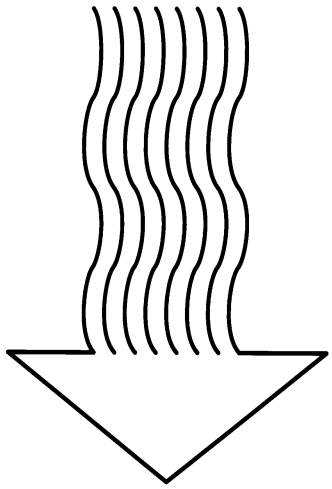
Why Worry About Washing?

Vehicle washing operations — large and small — can have a significant impact on water quality. Even the smallest changes in procedure can make a big difference in the amount of impact on the local sewer system — and consequently on the water quality of nearby rivers and streams. Auto dealerships, fleet operations and portable vehicle washing services can help the environment by being cautious about wastewater disposal.

Businesses that wash vehicles frequently add large quantities of water to the sewer systems. The wastewater often contains dirt, oil, detergent and solvents rinsed from cars and trucks or added during the washing process. Many of these substances will be discharged, untreated, into local bodies of water, or will add to capacity problems at sewage treatment facilities. Leaves, grass and other materials caught in wash water as it passes over paved surfaces can also add to pollution problems.

Reducing water use by recycling helps keep hazardous substances out of rivers and streams, preserves water supplies, and may lower a business' water and sewer fees. Other pollution prevention steps can save a company money by reducing the amount of chemicals purchased. Some steps may require a small or large investment at the beginning but ultimately will create long-term cost-savings.

The following pages illustrate ways vehicle washing operations can reduce the amount of water and pollutants flowing down the drain — and reduce operating costs.



Steps to Pollution Prevention

1. Know where your waste water goes — does the drain lead to a sanitary sewer and a treatment facility, or does the water flow directly to a nearby creek or river? In either case, you will want to reduce pollutants, but if you are sending wastewater directly to a river, stream or lake, you will want to take extra precautions.

   Check with your local waste water treatment operator to determine any restrictions or permit requirements for wastewater discharge. Some districts prohibit certain types of wastewater from being discharged to the sanitary sewer system. If your waste water flows directly into a river or stream, you may be required to obtain a permit from the Department of Environmental Quality.

2. Plan carefully the area in which vehicles are washed. Any impervious surface like concrete or asphalt used for washing cars should be wide enough to avoid accidental spraying of other equipment. Drainage surfaces should be graded in a way to direct wash water appropriately. Keep water away from shop repair areas or chemical storage.

   Whenever possible, wash vehicles on a grassy area that absorbs and naturally filters wastewater. Businesses that wash only a small number of vehicles might design a swale – a grass-lined ditch – to catch and filter wastewater.

3. Keep cleaning solutions to a minimum. The smaller the amount of detergents, brighteners and other materials used, the less impact on water quality and the greater the cost savings. Look for the least hazardous products and use biodegradable substances whenever possible.

4. Before discharging any wash water to a sanitary sewer, remove as many pollutants as possible.
   - Use a grit trap or a detention tank to catch solids.
   - A coalescing-type oil/water separator or similar unit will catch oil.

5. Keep wash water that contains soaps, detergents, hot water, steam or other chemicals out of the storm drains. There are several ways to do this:
   - Wash vehicles on a grass-covered surface when possible.
   - Install a sump or a grit trap to collect and filter the wastewater.
   - Collect wash water with a portable vacuum recovery unit.
   - If the water drains to a catch basin, make sure that the outlet to the storm drain is closed during washing.

Steps to Pollution Prevention

6. Install catch basins with sediment traps and create an inverted elbow outlet to trap floating oils. Clean catch basins when they are 30 percent full with solids — at least once a year. Make sure oil and solids are disposed of properly.

7. Reduce the amount of paint chips and heavy metals removed from vehicles during the washing process. This might require changing the cleaning agent or reducing water pressure. Paint and metals should be kept out of sewers.

8. If your washing takes place on painted or metal surfaces, don't use abrasive detergents. These washing agents will draw pollutants from the surfaces into the wash water.

9. Use detergents and soaps that are phosphate-free and break down easily in water.

10. Cleaning operations that use metal brighteners, caustics, acids, halogenated hydrocarbons or solvents should apply various methods to trap and hold water before it reaches the sewers. These include:

- A grit trap to remove suspended solids;
- An oil/water separator to remove floating oil;
- A pH adjustment unit to neutralize acids or caustics;
- An air stripper to remove volatile organics;
- A dissolved air flotation unit to remove fine solids;
- A polymer chemical mixing and flocculation unit;
- A sand filtration unit to remove dissolved solids and metals;
- An ultrafiltration unit to remove solids;
- A carbon column to remove organics and metals; and
- A reverse osmosis unit to remove metals.

11. If your business discharges wastewater to a sanitary sewer district, be sure to contact your local sewer authority. Each local sewage treatment provider sets standards for pre-treatment. Your local agency can advise you on ways to save money and reduce water pollution.

12. The best way to prevent pollution and save money on water use and sewer fees is to recycle wash water. Such systems require up-front investment but should result in cost-savings over time from lowered water and sewer bills.

For More Information...

A great deal of detailed information exists on ways vehicle washing businesses can reduce their contribution to water pollution. Some sources are:

- "Evaluation of Wastewater Discharges and Best Management Practices for Washing Activities" (Century West Engineering, 6/94) Available from DEQ–Water Quality Division
- Oregon DEQ, 503/229-5630, Available toll-free in Oregon at1-800-452-4011

ROUTING LIST Employee's Initials	Date

For more information, contact your local sewerage agency at...