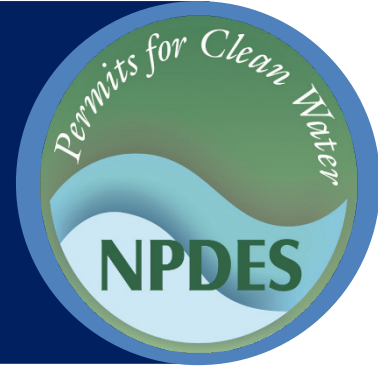




# Stormwater Best Management Practice

## Vehicle Maintenance and Washing



**Minimum Measure:** Public Education and Outreach on Stormwater Impacts  
**Subcategory:** Education for Residents

### Description

Done improperly, vehicle maintenance and washing can release pollutants like hydrocarbons and heavy metals to local waterways. Residents wash and maintain vehicles, and so do businesses (at sites including service stations, fleet maintenance facilities, auto dealerships and car washes). This fact sheet offers municipalities information and tips on how to educate both businesses and residents on best practices for that work.

### Vehicle Maintenance

Vehicle maintenance can take place in automotive repair facilities or residential areas. Maintenance activities such as cleaning auto parts, changing vehicle fluids, and repairing and replacing equipment generate waste and can be hazardous. Maintenance materials that may spill, leak or become waste during the maintenance process include:

- Solvents (e.g., degreasers, paint thinners)
- Antifreeze
- Brake fluid and brake pad dust
- Battery acid
- Motor oils
- Fuels (e.g., gasoline, diesel, kerosene)
- Lubricating grease

Spills and improper disposal of these materials can cause oil and grease, heavy metals, hydrocarbons, and other toxic compounds to enter ground and surface water supplies. This creates public health and environmental risks. Proper use, spill cleanup, storage and disposal of vehicle fluids can help reduce the potential for vehicle maintenance practices to pollute stormwater discharge and local water bodies. It is important to encourage awareness of storm drain inlets near maintenance yards and teach residents and business owners and their staff that storm drains lead directly to local waterways, not to treatment facilities.

Notably, vehicle maintenance facilities are stormwater hot spots—that is, they can produce pollutants and present a higher potential risk for spills, leaks or illicit discharges (MDE, 2013). These facilities regularly



Vehicle maintenance facilities are stormwater hot spots: they often use chemicals, such as oil, solvents and gasoline, that can contaminate stormwater if spilled or leaked.

handle toxic chemicals and generate hazardous waste; they may store wrecked and leaking vehicles. For this reason, they can benefit from targeted public education messaging as well as information related to regulation of their stormwater and wastewater discharges.

### Vehicle Washing

Outdoor car washing can cause detergent-rich water to flow into storm drains. This water may contain high amounts of nutrients, metals and hydrocarbons, either washed off vehicles or part of the detergent itself. Most stormwater impacts from car washing are from residents, fleet management activities and charity car wash fundraisers that discharge polluted wash water into the storm drain system.

Commercial car wash facilities minimize stormwater impacts and are safer than residential washing, as they often recycle their water or must treat their wash water before release into the sanitary sewer system. Residents who want to wash their own vehicles may not understand that nearby storm drains lead to local waterbodies, and that their washing activities are potentially harmful. Municipalities can suggest the following strategies to residents to help protect local waters:

- Use biodegradable, phosphate-free, water-based detergents.
- Limit the amount of detergent used.
- Wash cars in a driveway or yard, not in the street.
- Direct wash water to pervious areas, like grass or gravel.
- Use car wash kits to protect nearby storm drains from wash water.

## Understand Community Knowledge Gaps and Current Practices

To launch an effective vehicle maintenance and washing education program, a municipality can first determine the community's baseline of knowledge on the topic. For example, residents who do their own vehicle maintenance may not understand the impacts of their individual activities, whereas vehicle maintenance facilities may be more aware of stormwater regulations and why they exist. Municipalities can assess knowledge gaps through community surveys, focus groups, or analyses of illicit discharge reports relating to vehicle maintenance and washing. The [Soliciting Public Opinion](#) fact sheet provides more information on these strategies.

Municipalities can also gather information about the most common local methods of vehicle washing and waste management. For example, are charity car washes a prevalent community fundraising tool? Are commercial car wash facilities uncommon or expensive? Are there accessible municipal programs for [used oil recycling](#) or local waste and solvent recycling vendors? Are facilities facing constraints that prevent them from using best practices, like limited space for indoor maintenance work? Review the [Developing Outreach Strategies for Residents and Businesses](#) fact sheet to learn how to reach those key partners in the community.

## Determine a Program Approach

After researching knowledge gaps and current practices, a municipality can begin to identify which program approaches make sense for its community. Vehicle maintenance and washing programs can instruct the public on how to conduct these activities safely in both commercial and residential settings. Municipalities can communicate best practices and waste disposal requirements through official channels like local laws and ordinances or share them on websites, social media or other distributed materials. Municipalities may also offer programs to encourage best practices, like offering car wash kits for community fundraising events,

complete with the safe detergents and tools to redirect water away from storm drains.

## Implement Laws and Ordinances

Local laws and ordinances that place certain restrictions on vehicle washing and maintenance may give residents and businesses a strong incentive to adopt stormwater-friendly practices. For example, Fairfax County, Virginia, has a [Stormwater Management Ordinance](#) that prohibits unpermitted commercial car wash water from entering the storm drain system or streams.

## Offer Online Resources

Municipalities can post information on their websites to help educate residents and businesses about proper vehicle maintenance and washing practices. For example, the City of Arlington, Texas, maintains a stormwater management education website, with a page dedicated to [motorized vehicle washing](#). The Town of Plainville, Massachusetts' [public education and outreach website](#) specifies best management practices for various facility areas, including chemical waste and storage, body repair and painting, and vehicle washing.

In addition to general information and tips, municipalities can include links to outreach products, educational materials, local ordinances, social media accounts and any other outreach strategies they may have implemented. The [Flows to Bay](#) program in San Mateo County, California, shares pollution prevention tips for at-home automotive care, as well as links to related waste management programs, citations for studies on pollution prevention, and a quiz to test the reader's comprehension.

## Post and Distribute Educational Materials

Municipalities can distribute educational materials, like pamphlets, fact sheets, bill inserts and flyers, to increase awareness and share best management practices. In addition to hard-copy handouts, municipalities can post materials on their websites to increase their reach.

The City of Sacramento created a pamphlet titled [Stormwater Compliance for Auto Repair and Maintenance](#). The pamphlet contains information that a vehicle maintenance facility owner or manager would need, like municipality contact information and tips on preventing pollution while changing vehicle fluids, cleaning parts and keeping a clean shop.

The City of San Diego created a [Car and Boat Washing](#) fact sheet summarizing strategies to “control, contain, capture & dispose” of water used to wash those

vehicles. Because the municipality is near the ocean, the fact sheet connects washing activities with potential harm to the beaches, fish and wildlife that community members value.

### Use Social Media or Digital Content

Digital content posted to social media can distill important information and reach the public efficiently. The Clean Water Education Partnership in North Carolina generates graphics to share across social media, like this set of [vehicle maintenance graphics](#). Municipalities can share this type of content generated by similar nonprofits to educate their public if they have permissions and attribute the original sources.

The City of East Lansing, Michigan, created a video about [motor oil and water quality](#). In less than a minute, the video teaches the audience about the effects of motor oil on their watersheds and best practices to prevent pollution.

### Promote Pollution Prevention Practices for Local Car Wash Fundraisers

Neighborhood car washes are a popular fundraising activity. However, the wash water from these events can pollute local ecosystems if it reaches storm drains. Car wash kits can minimize pollution from car wash fundraisers by allowing residents to redirect wash water away from storm drains and encourage use of “friendly detergents.” These kits may include a pump, hose, storm drain blockers, booms, and a biodegradable, phosphate

free, water-based detergent. The City of Eugene, Oregon, allows car wash fundraisers to borrow a “fish-friendly” car wash kit. The city also shares a [video](#) about the kit and its benefits.

Alternatively, municipalities can promote use of commercial car wash facilities for fundraisers by advertising car wash ticket programs. For example, the City of Seattle, Washington, promotes the purchase of [charity car wash tickets](#) as a safer alternative to noncommercial car wash fundraisers. The city encourages organizations to contact a partner commercial car wash facility, where they can buy tickets at a discount and sell them at a profit for their fundraiser.

### Evaluate Program Effectiveness

To evaluate the effectiveness of its vehicle washing and maintenance public education campaign, a municipality can review performance metrics before and after the campaign. For example, it can compare rates of illicit discharge reports and site inspection findings relating to vehicle maintenance facilities to see if issues and discharges have decreased. Water quality monitoring data may reveal changes in concentrations of hydrocarbons and oil and grease. Other metrics of success include social media engagement (e.g., views, shares, comments) and monitoring use of advertised solutions such as used oil recycling programs or charity car wash partnerships. Once the municipality has evaluated the effectiveness of a campaign, it can adjust the public education approach based on these results.

#### Additional Information

Additional information on related practices and the Phase II MS4 program can be found at EPA's National Menu of Best Management Practices (BMPs) for Stormwater website

### References

Maryland Department of the Environment (MDE). (2013). *Stormwater pollution prevention guidance*.

#### Disclaimer

*This fact sheet is intended to be used for informational purposes only. These examples and references are not intended to be comprehensive and do not preclude the use of other technically sound practices. State or local requirements may apply.*