



U.S. ENVIRONMENTAL PROTECTION AGENCY

National Pollutant Discharge Elimination System (NPDES)

[Recent Additions](#) | [Contact Us](#) | [Print Version](#) Search NPDES:

GO

[EPA Home](#) > [OW Home](#) > [OWM Home](#) > [NPDES Home](#) > [Stormwater](#) > Menu of BMPs

Menu of BMPs Home

BMP Background

Public Education & Outreach on Stormwater Impacts

Public Involvement/ Participation

Illicit Discharge Detection & Elimination

Construction Site Stormwater Runoff Control

Post-Construction Stormwater Management in New Development & Redevelopment

Pollution Prevention/Good Housekeeping for Municipal Operations

Measurable Goals

Stormwater Home

Search BMPs

 All of the words

Filter by Minimum Measure

 All

GO

Browse Fact Sheets

Search Help

Municipal Vehicle and Equipment Washing

[Click here to comment on this fact sheet](#)

Minimum Measure: Pollution Prevention/Good Housekeeping for Municipal Operations

Subcategory: Municipal Activities

Description

Municipal vehicle washing can generate dry weather runoff contaminated with detergents, oils, grease, and heavy metals. Vehicle washing BMPs can eliminate contaminated wash water discharges to the sanitary sewer system. Such BMPs include installing wash racks that discharge wash water to the sanitary sewer, and contracting the services of commercial car washes, which are permitted to discharge wash water to the sanitary sewer system. Finally, employees and subcontractors should be trained in the municipality's vehicle washing procedures to avoid illicit discharges.

Applicability

Municipalities typically operate a fleet of vehicles, including public works trucks, fire trucks, ambulances, police cars, school buses, and other types of vehicles. Municipalities with a large fleet of vehicles might consider building municipal-operated vehicle washing facilities. Municipalities with small fleets might consider contracting with a commercial car wash. Municipalities that own and operate concrete trucks should look at the [Concrete Washout](#) fact sheet for proper washing procedures. For information on how to educate the public about reducing pollution while washing personal vehicles, see the [Residential Car Washing](#) and [Stormwater Outreach for Commercial Businesses](#) fact sheets.

Siting & Design Considerations

Wash Racks

When installing a wash rack at a municipal facility, several design features should be considered. A designated wash area should be paved and bermed or sloped to contain and direct wash water to a sump connected to the sanitary sewer or to a holding tank, process treatment system, or enclosed recycling system. Note that you must seek the permission of the sewer authority before discharging wastewater to the sanitary sewer, and that special treatment requirements may be placed on such discharges. Alternately, the wash rack could be designed to recycle wash water, thereby eliminating the pretreatment costs of discharging to the sanitary sewer.

The following good housekeeping practices can minimize the risk of contamination from vehicle wash water discharges at municipal facilities (adapted from CASQA, 2003):

- Wash all vehicles in areas designed to collect and hold wash water before its

discharge to the sanitary sewer system. Normally, wastewater treatment regulations require wash water to be pretreated prior to its discharge to the treatment plant. Contact your sewer authority to ensure that all requirements are met before designing, building, and operating the wash rack.

- Avoid detergents whenever possible. If detergents are necessary, a phosphate-free, non-toxic, biodegradable soap is recommended. Detergents should be avoided if an oil/water separator is used for pretreatment prior to discharge to the sanitary sewer.
- Municipal facilities that store vehicles should stencil their storm drains to remind employees to wash vehicles within the designated wash area. Signage can also be posted with this message.
- Mount spill kits with absorbent containment materials and instructions near wash racks. Immediately contain and treat all spills.

Commercial Car Washes

Municipalities can negotiate with commercial car washes and steam cleaning businesses to handle their fleet vehicle washing. This option eliminates the cost of building and the liability of operating a wash facility. This option may be limited to smaller sized vehicles, however, since many car washes do not have bays large enough to handle buses, fire trucks, ambulances, and other large vehicles.

Other BMPs

If a vehicle must be washed outside of a facility plumbed to the sanitary sewer, take precautions to avoid wash water discharges to the storm drain system. For small jobs, berm the area surrounding the vehicle and use a wet/dry vacuum to capture the wash water for discharge to the sanitary sewer. For larger jobs, use a combination of berms and a vacuum truck, such as those used to clean storm and sanitary sewer systems, to capture and safely dispose of wash water. If detergents are used, clean the pavement to prevent this material from being carried to the storm drain during the next rainstorm.

Maintenance Considerations

A wash rack's paved surfaces and sump should be inspected and cleaned periodically to remove buildups of particulate matter or other pollutants. Plumbing, recycling, and pretreatment systems also require periodic inspection and maintenance. The area surrounding the wash rack should be visually inspected for leaks, overspray, or other signs of ineffective containment due to faulty design or physical damage to berms. Any defects should be corrected.

Limitations

Building a new wash rack can be expensive. Also, for facilities that cannot recycle their wash water, the cost of pretreating wash water prior to discharge to the sanitary sewer can represent a cost limitation. If the appropriate facilities are available, vehicle washing BMPs are relatively inexpensive housekeeping measures.

Effectiveness

Studies have yet to demonstrate the effectiveness of car washing management practices at reducing stormwater pollutant loads.

Cost Considerations

Municipal wash racks plumbed to the sanitary sewer can be expensive to build. They need to be pursued as a capital improvement project or through other measures based on your local policies for such projects. Costs for contracting with commercial car washes can vary depending on the size of the fleet. Rates are subject to negotiation, but they would constitute an annual operating cost that could be included as part of the municipal budget. Other measures to control discharge of incidental washing to the storm drain system (berms, wet/dry vacuums, etc.) are relatively inexpensive.

References

California Stormwater Quality Association (CASQA). 2004. California Stormwater Industrial/Commercial Best Management Practice Handbook. Stormwater Quality Task Force, Sacramento, CA.

Center for Watershed Protection. 1999. On Watershed Behavior. Watershed Protection Techniques 3(3): 671-679.

[Click here to comment on this fact sheet](#)

[Office of Water](#) | [Office of Wastewater Management](#) | [Disclaimer](#) | [Search EPA](#)

[EPA Home](#) | [Privacy and Security Notice](#) | [Contact Us](#)

Last updated on June 01, 2006

URL: <http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm>