

Florida Department of Environmental Protection

Recommended Best Management Practices for Mobile Vehicle and Equipment Washing

Background

Mobile vehicle and equipment washing involves washing at a location where vehicles are based (such as a trucking company, warehouse, bus station, vehicle dealership, fairgrounds, etc.) or at an intermediate location where the washing crew and vehicle owners meet solely for the purpose of washing vehicles (such as a business parking lot, gas station, etc.). In contrast, a stationary washing facility is a permanent fixed location where vehicles are driven for washing. Stationary facilities may include commercial car washes for passenger vehicles and commercial or industrial vehicle wash facilities for large trucks and heavy equipment.

Mobile vehicle washing may be performed by commercial washing contractors who temporarily set up washing equipment at the vehicle owner's facility, or by the owner's employees. This type of mobile washing frequently involves fleet vehicles and may include large trucks and heavy equipment. Mobile washing at an intermediate location frequently involves passenger vehicles and is often conducted as a charity or fund raising activity by schools, churches, and youth organizations. It may also be performed as a small-scale business.

Wastewater (including wash water) from any type of vehicle and equipment cleaning can contain significant amounts of substances such as oil and grease, petroleum products, suspended solids such as dirt and grit, heavy metals, detergents, and other pollutants. These contaminants may cause pollution of surface water or ground water and result in violations of water quality standards if the wastewater is not properly managed. Therefore, persons involved in washing operations and the owners of property where washing occurs should follow appropriate Best Management Practices (BMPs), such as those described in this document.

Best Management Practices (BMPs)

BMPs are actions designed to help reduce the amount of pollutants discharged to the environment by improving overall waste management practices and to comply with environmental regulations. The recommended BMPs in this guidance document may be used for any type of mobile washing activity. However, these BMPs are specifically intended to provide guidance for fleet vehicle and heavy equipment washing because those activities can potentially have greater environmental impacts than smaller-scale washing activities.

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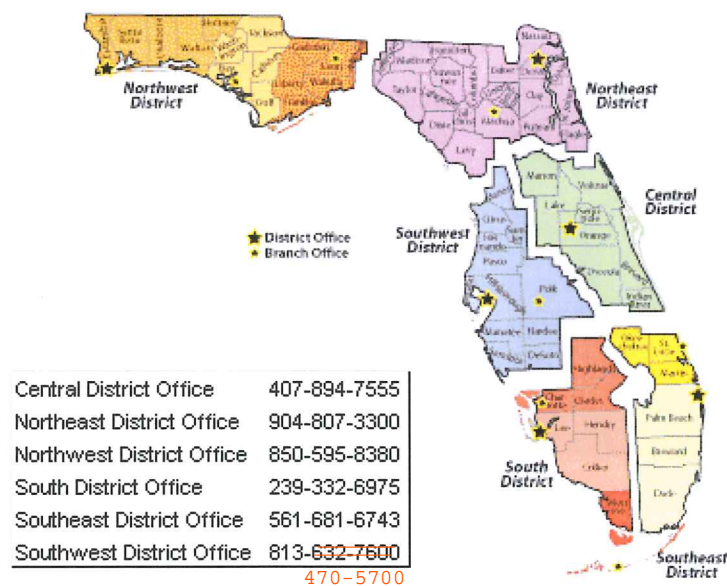
Specific BMPs for Mobile Washing

The following BMPs are recommended to help reduce the amount of pollutants discharged throughout mobile washing procedures and improve the efficiency of the process:

1. Before performing any washing activities
 - a. determine how wastewater will be collected and disposed, and
 - b. obtain all necessary permits and authorizations.
2. Identify the specific location where you will be disposing wastewater.
3. Identify all stormwater drains, grassy swales and ditches and locate sanitary sewer manholes at the proposed wash area.
4. Observe the slope of the ground at the proposed facility to determine the direction of runoff flow in order to identify an area where washwater can be contained for collection without the possibility of release of a pollutant into the waters of the state of Florida.
5. Only cosmetic washing should be performed, unless a mobile zero discharge closed-loop wash system with an enclosed wash facility is used. Cosmetic washing is defined as washing the exterior of a vehicle, tractor/trailer, or equipment with a biodegradable detergent only for the purpose of removing dirt. Cosmetic washing does not include interior washing, washing of the undercarriage of the vehicle or equipment, engine degreasing, or the use of strongly acidic or strongly alkaline cleaners. Chrome and aluminum brighteners can only be used if they are hand applied and removed by wiping, and are not part of the wash process.
6. Before using a wastewater recycling or pretreatment unit such as an oil/water separator, filtration system, etc., make sure you understand the waste streams that are generated. Identify proper disposal methods for these wastes, and consider disposal costs before starting a job. Some units, especially those that separate oil from water, may generate waste such as waste oil that require special storage and handling practices.
7. Consider contracting with a company that can provide appropriate treatment and disposal of your wastes. This may save you time and money associated with purchasing, permitting, and using your own wastewater treatment equipment. In some cases, you may be able to reduce the liability that comes with the generation and disposal of hazardous waste.
8. Minimize the amount of wastewater generated by using high pressure, low volume washing techniques and equipment.
9. Cosmetic vehicle or equipment washing should be performed on an impermeable surface (such as concrete, asphalt, plastic, etc.), where available. The impermeable area should be large enough to minimize runoff to grassy or bare soil areas.
10. Vehicles should not be washed near uncovered repair areas or chemical storage facilities such that chemicals can be transported in wash water runoff. All wash water runoff should be drained away from a shop repair area or chemical storage facility.
11. Washing and related cleaning activities should minimize flaking of paint chips, or any other potentially hazardous materials from vehicles and equipment. Actions that minimize flaking and chipping may include using lower water pressure and/or avoiding harsh chemicals or solvents.

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12. Solids and other debris should be collected and properly disposed to prevent storm water contamination.
13. Use only the minimum amount of detergents and cleaners that will get the job done. Use products that are labeled “phosphate free” and are rapidly biodegradable. Detergents and soaps used in washing activities should be approximately pH neutral. Avoid using cleaning products if the package label
 - a. has a warning that the product is strongly alkaline or strongly acidic, or
 - b. indicates the product contains petroleum products or distillates, or
 - c. contains chlorinated solvents.
14. Train personnel on chemical use, safety and waste disposal practices.
15. Records of the volume of wastewater generated and disposed should be kept for regulatory spot checks and to provide confirmation to facility owners and customers that wastewater is being properly handled.
16. If a spill of cleaning products occurs:
 - a. stop the source of the spill immediately;
 - b. contain the spill until cleanup is complete;
 - c. use containment booms if the spill may reach a storm drain;
 - d. cover a liquid spill with an absorbent material;
 - e. keep the area well ventilated;
 - f. dispose cleanup materials properly; and
 - g. do not use emulsifiers or dispersants.
17. Spills that cause offsite environmental impact or are of a significant volume should be reported to the local Florida Department of Environmental Protection (FDEP) District Office or the city/county environmental program as soon as possible.



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Wastewater Containment Methods

In many instances it is necessary to collect the wastewater prior to the disposal and/or treatment of the water. Below are a few suggested practices to collect or contain the wastewater created in the washing process:



1. **Containment Booms** – Protective barriers can be placed around a storm drain in order to prevent water from entering the drain. They are normally used in order to prevent wastewater from entering a stormwater drain and to pool the wastewater around drain for later collection. However, one potential problem with booms is that they can be ineffective or less effective when the storm drain is located at the bottom of a slope or if there is a large amount of wastewater generated.

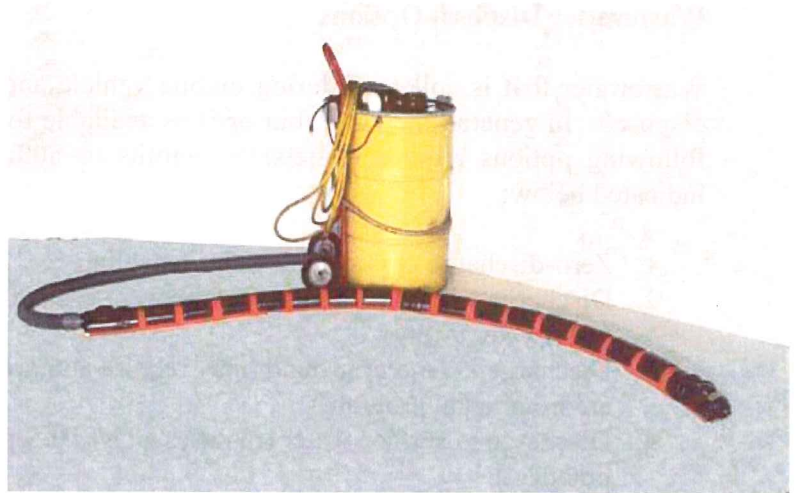
2. **Containment Pools** – A containment pool is a temporary structure built to provide an immediate work area for the washing operation. They allow the wastewater to be collected so that pollutants do not enter the storm system and can be built for a variety of sizes, as large as a truck and trailer.



3. **Storm Drain Covers and Mats** – Storm drain covers and mats are items that are placed on top of a storm drain grate in order to seal the drain off from the wastewater and allow the water to collect on top of the drain until it can be collected and properly disposed. They can consist of a variety of devices, including magnetic vinyl mats, PVC drain covers, polyurethane mats, and others. Many times, the covers and mats are used in conjunction with a vacuum pump for the most efficient collection and disposal of the water.

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4. **Vacuums and Pumps** – Devices such as wet/dry vacuums, sump pumps, and vacuum pumps can be used to collect wastewater created by a washing operation. Many vacuum devices include a vacuum boom, which is an attachment that rests flush on the ground and allows the wastewater to be collected through small holes located on the bottom of the boom. Also, for ease of use, many vacuum devices are designed with a second hose that can run from the pump to disposal area, such as a sanitary sewer or a holding tank.



5. **Inflatable Pipe Plug** – Inflatable pipe plugs are similar to the covers and mats listed above in that they prevent wastewater from entering the storm sewer system by blocking the entrance. However, unlike mats and covers, the inflatable plug is inserted into the storm drain pipe and uses the inlet structure below the grate to collect the wastewater. Once inserted, the plug is inflated so that it fits snugly in the pipe. At the end of the washing operation, the wastewater can then be collected using a pump device. Inflatable plugs should only be used on private property and should not be used in public storm drain inlets or pipes.

6. **Onsite Swales** – Shallow, grassy low areas designed to collect runoff and allow it to seep into the ground without discharging to a stormwater system or to otherwise leave the site. Such onsite swales may provide an additional wastewater collection or disposal option.



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Wastewater Disposal Options

Wastewater that is collected during mobile vehicle and equipment washing must be properly disposed. In general, there are four options available for the disposal of the water. Some of the following options require wastewater permits or authorization from a wastewater utility, as indicated below:

1. Zero-discharge closed-loop water recycling
2. Discharge to a municipal sanitary sewer system (requires authorization from the sanitary wastewater utility)
3. Discharge to land or ground (may require authorization from FDEP or the city/county environmental program)
4. Discharge to surface water (requires an NPDES permit from FDEP, and is typically not practical)

1. Zero-Discharge Closed-Loop Water Recycling Systems

A closed-loop system uses recycled water and has zero or negligible discharge. Stationary systems such as car washing facilities generally require a permit from FDEP. Mobile closed-loop water recycling systems can provide adequate wastewater collection and treatment without having to obtain a permit, provided that wastewater is properly disposed. However, one possible problem is that closed-loop water recycling systems may use chemicals to help remove solids from the waste. When systems use these chemicals, they commonly generate sludge which must be handled safely and disposed in a manner that will not cause pollution of the waters of the state. Another common issue is that the closed-loop recycling systems may have a reservoir to store the recycled water for reuse. It may be necessary to dispose of the reservoir water periodically as oil, grease, and other pollutants accumulate. The following steps should be followed for safe handling and disposal of the sludge and the contaminated reservoir water generated by these systems:

- a. Wastewater from a closed-loop system must be either discharged to a municipal sanitary wastewater system (with prior authorization) or disposed at a commercial industrial wastewater treatment facility.
- b. The sludge generated in these systems seldom is designated as a hazardous waste, and it can usually be disposed in a sanitary landfill. To be sure, check with the local FDEP District Office or the city/council environmental program and/or landfill operator.
- c. If the sludge is considered a hazardous waste, it must be disposed through a permitted treatment, storage, and disposal (TSD) facility.

2. Discharge to a Municipal Sanitary Sewer System

Discharges to a municipal sewerage system receive treatment by the municipal treatment facility before they are finally discharged to the environment (rivers, lakes, sea water, or the land). Wherever practicable, FDEP recommends that discharging wastewater from mobile washing to the sanitary sewer. For fleet washing activities, discharge to the sanitary sewer will be the most economical and best alternative. Discharges to a sanitary sewer must have prior approval from the wastewater utility, and may require some pretreatment. In addition, this disposal method must be approved by the property owner(s) prior to discharge.

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3. Discharge to Land or Ground

Discharges to the ground must be treated to prevent ground water pollution. A grassy ground surface can provide treatment for small (i.e. minimal ponding and no runoff) and infrequent discharges. Regardless of the number and type of vehicle washing activity, all discharges to ground water must comply with state ground water standards. In some areas of the state, such as those over sole source aquifers, discharge to ground may not be allowed or may require further controls. In those sensitive areas, closed-loop water recycling or other disposal options would be necessary. If the wastewater is to be diverted to landscaped areas, damage to plants and soil can be avoided by minimizing or eliminating the use of soaps, detergents, and chemicals. Any solids that would be visible on the ground after discharge must be filtered out of the waste stream. In addition, minimizing the use of water can prevent wastewater overflowing from these areas. Repeated discharges to landscaped areas may result in an accumulation of contaminants, thus damaging vegetation and increasing contaminant levels in the soil. **Note: If wastewater is repeatedly discharged to the same land area, FDEP may require the facility or the washing contractor to obtain a wastewater permit.** Contact the local FDEP District Office or the city/county environmental program prior to discharge for more information.

4. Discharge to Surface Water

Discharge of wastewater to stormwater systems (such as drains, ditches, retention areas) or to surface water (such as lakes, rivers, streams, canals, bays, or to the ocean) is prohibited without an NPDES wastewater permit. Therefore, this option is generally not feasible. NPDES wastewater permits typically require a high degree of treatment to meet water quality standards, along with extensive (and costly) monitoring. For more information concerning the permitting requirements involved in discharging to surface water, please contact the local FDEP office.

