

# **BEST MANAGEMENT PRACTICES**

**GUIDEBOOK for**

# **VEHICLE MAINTENANCE FACILITIES**



An instructional how-to guide on safe, environmental practices and procedures relating to the vehicle industry. Your cooperation is vital in implementing these procedures. Keep this guide near your work area for quick reference.

*“ A Best Management Practice is defined as any program, technology, process, siting criteria, operating method, measure or device which controls, prevents, removes, or reduces pollution. ”*

— California Storm Water Best Management Practices Handbooks  
American Public Works Association, March 1993

*“ BMP’s include a schedule of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution runoff from your site. ”*

— Developing Pollution Prevention Plans and Best Management Practices  
U.S Environmental Protection Agency, October 1992

**R**ecent studies indicate that stormwater runoff from urban sectors such as residential, commercial and light industrial areas is a major source of pollution of our bays and surrounding waters. Stormwater, or urban runoff, is carried and eventually discharged into our surface waters by storm drains. These storm drains are intended to prevent flooding of the streets during a storm event by conveying the stormwater directly into the ocean. Therefore, unlike wastewater carried by sanitary sewers, stormwater runoff does not receive any chemical or physical treatment to remove pollutants before reaching the ocean.

These Best Management Practices will explain how you can operate your shop or facility, while reducing the amount of antifreeze, heavy metals, oil, and other wastes that may run off from your facility and be discharged into the storm drain system. Understanding and using this information will help you keep your shops clean, with the added benefits of protecting the ocean and complying with local and federal stormwater pollution requirements.

## Service-Related Activities

### Changing Oil and Other Fluids

- \_\_\_ Whenever possible, change vehicle fluids indoors and only on floors constructed of non-porous materials. Avoid working over asphalt and dirt floors - surfaces that absorb vehicle fluids.
- \_\_\_ If vehicle fluids must be removed outdoors, always use a drip pan. Prevent spills from reaching the street or storm drain by working over an absorbent mat and covering nearby storm drains, or working in a bermed area. If necessary, use absorbent socks to create a bermed area.
- \_\_\_ When draining fluids into a drain pan, place a larger drip pan (e.g. 3' x 4') under the primary drain pan to catch any spilled fluids.
- \_\_\_ Transfer fluids drained from vehicles to a designated waste storage area as soon as possible. Drain pans and other open containers of fluids should not be left unattended unless they are covered and within secondary containment.

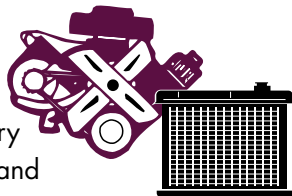


## Changing Oil and Other Fluids (cont.)

- ❑ \_\_\_ Store waste containers of antifreeze and oil within secondary containment. Antifreeze and waste oil should be stored separately and recycled, or disposed of as hazardous waste.
- ❑ \_\_\_ Never pour vehicle fluids or other hazardous wastes into sinks, toilets, floor drains, outside storm drains, or in the garbage. These substances should be kept in designated storage areas until recycled or safe disposal.
- ❑ \_\_\_ Drain fluids from leaking or wrecked vehicles as soon as possible, to avoid leaks and spills.
- ❑ \_\_\_ Consider using a quarter barrel, vacuum pump, or drain pan with built-in pump to transfer fluids.

## Service-Related Activities

### Cleaning Engines and Parts, and Flushing Radiators



- \_\_\_ Eliminate discharges from these operations to the sanitary sewer and storm drains. Use a licensed service to haul and recycle or dispose of wastes.
- \_\_\_ Designate specific areas or service bays for engine, parts, or radiator cleaning. Do not wash or rinse parts outdoors.
- \_\_\_ Use self-contained sinks and tanks when working with solvents. Keep sinks and tanks covered when not in use.
- \_\_\_ Inspect degreasing solvent sinks regularly for leaks, and make necessary repairs immediately.
- \_\_\_ Avoid soldering over drip tanks. Sweep up drippings and recycle or dispose as hazardous waste.
- \_\_\_ Rinse and drain parts over the solvent sink or tank so that solvents will not drip or spill onto the floor. Use drip boards or pans to catch excess solutions and divert them back to a sink or tank.

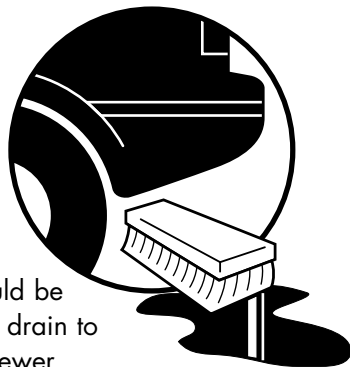
## **Cleaning Engines and Parts, and Flushing Radiators (cont.)**

- \_\_\_ Allow parts to dry over the hot tank. If rinsing is required, rinse over the tank as well.
- \_\_\_ Collect and reuse parts cleaning solvents and water used in flushing and testing radiators. When reuse is no longer possible, these solutions may be hazardous wastes and must be disposed of properly.
- \_\_\_ Never discharge cleaning solutions used for engines or parts into the sewer system without adequate treatment. Most facilities have these solutions hauled off-site as hazardous waste because of the permits necessary for on-site treatment.
- \_\_\_ Rinse water may only be discharged to the sanitary sewer with adequate treatment and approval of the sewage treatment plant.
- \_\_\_ Never discharge wastewater from steam cleaning, or engine/parts cleaning to a street, gutter or storm drain.
- \_\_\_ Sweep or use a vacuum to clean up dust or debris from scraping or bead blasting radiators.
- \_\_\_ Use static tanks for rinsing to reduce the volume of discharged rinse water.
- \_\_\_ Use counter-current rinsing to reduce water usage and rinse water discharges.

## **Washing Cars and Other Vehicles**

### **Regular Activity**

- ❑ \_\_\_ If car washing is a central business activity, the most desirable option is to treat and recycle the wash water.
- ❑ \_\_\_ Designate a vehicle washing area and wash cars and trucks only in that area. This “wash pad” should be bermed or protected from storm drains and should drain to an oil/water separator before discharging to the sewer.
- ❑ \_\_\_ Cover an outside wash pad or minimize the area of an uncovered pad to reduce the amount of rainwater reaching the sewer. Consult the local sewage treatment plant for guidance.
- ❑ \_\_\_ Minimize the use of acid-based wheel cleaners. These products may require additional treatment (beyond oil/water separation) before discharge to the sewer.



## **Washing Cars and Other Vehicles (cont.)**

### **Occasional Activity**

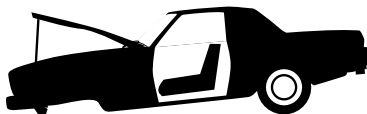
- \_\_\_ Even biodegradable soap is toxic to fish and wildlife. Whenever possible, take vehicles to a commercial car wash.
- \_\_\_ If soap is used in washing, the wash water must be collected and discharged, preferably with treatment, to the sanitary sewer. This water cannot be discharged to a storm drain.
- \_\_\_ Never rinse off spray-on acid-based wheel cleaners where rinse water may flow to a street, gutter, or storm drain.

### **New Vehicles**

- \_\_\_ If cleaning the exterior of new vehicles with only water, the discharged water may go directly to the storm drain.
- \_\_\_ Always protect the storm drains from solvents used to remove protective coatings from new cars. Discharges of these solvents to the sanitary sewer must receive adequate treatment and approval of the sewage treatment plant.

## Body Repair and Painting

- \_\_\_ Whenever possible, conduct all body repair and painting work indoors or under cover.
- \_\_\_ When receiving damaged vehicles, inspect for leaks. Use drip pans if necessary.
- \_\_\_ When cleaning auto body parts before painting, minimize use of hose-off degreasers. Brush off loose debris and use rags to wipe down parts.
- \_\_\_ Use dry cleanup methods such as vacuuming or sweeping to clean up dust from sanding metal or body filler. Debris from wet sanding can be allowed to dry overnight on the shop floor, then swept and vacuumed. Liquid from wet sanding should not be discharged to the storm drain.
- \_\_\_ Minimize waste paint and thinner by carefully calculating paint needs based on surface area and using the proper sprayer cup size.



## **Body Repair and Painting (cont.)**

- ❑ \_\_\_ Do not use water to control overspray or dust in the paint booth unless this wastewater is collected. This water should be treated before discharge into the sewer system.
- ❑ \_\_\_ Clean spray guns in a self-contained cleaner.  
Recycle the cleaning solution when it becomes too dirty to use.  
Never discharge cleaning waste to the sewer or storm drain.
- ❑ \_\_\_ Use sanding tools equipped with vacuum capability to pick up debris and dust.
- ❑ \_\_\_ Reduce waste by using low-volume paint mixing equipment and high-efficiency painting tools.



## **Facility Maintenance and Management**

### **Keeping a Clean Shop**

- \_\_\_ Use drip pans under leaking vehicles to capture fluids.
- \_\_\_ Sweep or vacuum the shop floor frequently. Use mopping as an alternative to hosing down work areas.
- \_\_\_ If mopping is used to clean shop floors:
  - Spot clean any spilled oil or fluids using absorbents or rags.
  - Use dry cleanup methods: Sweep the floor using absorbents.
  - After steps 1 and 2 above (if mopping is still needed), mop and discharge mop water to the sanitary sewer.
- \_\_\_ Do not pour mop water into the parking lot, street, gutter or storm drains.
- \_\_\_ Remove unnecessary hoses to discourage washing down floors and outside paved areas.

## Keeping a Clean Shop (cont.)

- ❑ \_\_\_ Regularly sweep parking lots and areas around facility instead of washing them down with water.
- ❑ \_\_\_ Clean fuel dispensing areas with absorbent instead of water.
- ❑ \_\_\_ Collect all metal filings, dust, and paint chips from grinding, shaving, and sanding, and dispose of the waste properly. Never discharge these wastes to the storm drain or sanitary sewer.
- ❑ \_\_\_ Collect all dust from brake pads separately and dispose of the waste properly. Never discharge these wastes to the storm drain or sanitary sewer.
- ❑ \_\_\_ Send rags to an industrial laundry.
- ❑ \_\_\_ Consider using an oleophilic mop (picks up oil and not water) to reduce the volume of waste liquids collected and to reduce disposal cost.



## Storage

- \_\_\_ Store hazardous materials and wastes where they are protected from rain and in a way that prevents spills from reaching the sanitary sewer or storm drain.
- \_\_\_ Keep lids on waste barrels and containers, and store them indoors or under cover to reduce exposure to rain.
- \_\_\_ All hazardous wastes must be labeled according to hazardous waste regulations. Consult the Fire Department or a local hazardous waste agency for details.
- \_\_\_ Keep wastes separated to increase waste recycling/disposal options and to reduce costs.
- \_\_\_ Never mix waste oil with fuel, antifreeze, or chlorinated solvents. Consult a hazardous waste hauler for details.
- \_\_\_ Double-contain all bulk fluids to prevent accidental discharges to the sewer and storm drains. Consult the Fire Department for details.



## **Storage (cont.)**

- ❑ \_\_\_ Keep storage areas clean and dry. Conduct regular inspections so that leaks and spills are detected as soon as possible.
- ❑ \_\_\_ Carefully transfer fluids from drip pans or collection devices to designated waste storage areas, as soon as possible.
- ❑ \_\_\_ When receiving vehicles to be parted or scavenged, park them on a paved surface and immediately drain and collect gasoline and other fluids properly.
- ❑ \_\_\_ Drain all fluids from components, such as engine blocks, that may be stored for reuse or reclamation. Keep these components under cover and on a drip pan or sealed floor.
- ❑ \_\_\_ Store new batteries securely to avoid breakage and acid spills during earthquakes. Shelving should be secured to the wall. Store used batteries indoors and in plastic trays to contain potential leaks. Recycle old batteries.

## Spill Control

The best spill control is prevention.

- \_\_\_ Maintain and keep current, as required by other regulations, a spill response plan and ensure that employees are trained on the elements of the plan.
- \_\_\_ Minimize the distance between waste collection points and storage areas.
- \_\_\_ Contain and cover all solid and liquid wastes— especially during transfer.
- \_\_\_ Purchase and maintain the proper absorbent materials for containment and cleanup of different spills; make sure they are easily accessible anywhere in the shop. Saturated absorbents generally must be disposed of as hazardous waste.
- \_\_\_ Clean up spills immediately and completely. Spills are not considered cleaned up until the absorbent is picked up also.
- \_\_\_ Cover nearby downstream storm drains when transferring fuel from tank truck to fuel tank.
- \_\_\_ Seal or remove floor drains to prevent accidental discharge to the sewer system.



## Recycling/Treatment

- \_\_\_ Recycle solvents, paints, oil filters, antifreeze, motor oil, batteries, and lubricants.
- \_\_\_ Set up a system (separate, well-labeled containers in a convenient location) to make it easy for employees to separate wastes and to recycle.
- \_\_\_ Choose treatment systems that are easy to maintain and repair.
- \_\_\_ Properly maintain and service all pretreatment equipment, including sumps, separators, and grease traps to ensure proper functioning. Follow manufacturer's maintenance instructions and consider using a licensed service to conduct maintenance on a regular basis.
- \_\_\_ Frequently inspect equipment for malfunctioning parts, leaks, and the accumulation of pollutants such as oil and grease. Since pretreatment equipment is supposed to remove pollutants, a lack of accumulation may be a sign of a malfunction.
- \_\_\_ Retain only a licensed service to haul away and dispose of wastes.
- \_\_\_ Install self-contained, zero-discharging treatment systems that recycle wastewater.

## **Purchasing**

- \_\_\_ Ask a local supplier for information on less toxic chemical cleaners and other products. There are alternatives to chlorinated solvents; chlorofluorocarbons; and 1.1.1 trichloroethane (TCA).
- \_\_\_ Ask a local supplier for information on the composition of brake pads. Recent studies have shown that brake dust washed off streets by rain may be the single biggest contributor of copper, a major pollutant, to waterways. Awareness and understanding of this problem and the available alternatives will help create future solutions.
- \_\_\_ Minimize inventory by purchasing only as much product as needed in the foreseeable future. This will reduce storage space needs, inventory tracking costs, and liability for storing hazardous materials and waste.

## **Education and Training**

- \_\_\_ Train all employees upon hiring— and annually thereafter— on personal safety, chemical management, and proper methods for handling and disposing of waste. Make sure that all employees understand stormwater discharge prohibitions, wastewater discharge requirements, and these best management practices. Use a training log or similar method to document training.

## Education and Training (cont.)

- ❑ \_\_\_ Post instructional/informational signs around the shop for customers and employees. Put signs above all sinks prohibiting discharges of vehicle fluids and wastes. Put signs on faucets (hose bibs) reminding employees and customers to conserve water and not to use water to clean up spills.
- ❑ \_\_\_ Label drains within the facility boundary, by paint/stencil (or equivalent) to indicate whether they flow to an oil/water separator, directly to the sewer, or to a storm drain. Labels are not necessary for plumbing fixtures directly connected to the sanitary sewer.





Bureau of Sanitation Department of Public Works

(800) 974-9794

**[www.LAstormwater.org](http://www.LAstormwater.org)**

