

IC19. VEHICLE AND EQUIPMENT MAINTENANCE AND REPAIR

Best Management Practices (BMPs)

A BMP is a technique, measure or structural control that is used for a given set of conditions to improve the quality of the stormwater runoff in a cost effective manner¹. The minimum required BMPs for this activity are outlined in the box to the right. Implementation of pollution prevention/good housekeeping measures may reduce or eliminate the need to implement other more costly or complicated procedures. Proper employee training is key to the success of BMP implementation.

The BMPs outlined in this fact sheet target the following pollutants:

Targeted Constituents	
Sediment	
Nutrients	
Floatable Materials	
Metals	x
Bacteria	
Oil & Grease	x
Organics & Toxicants	x
Pesticides	
Oxygen Demanding	

Provided below are specific procedures associated with each of the minimum BMPs along with procedures for additional BMPs that should be considered if this activity takes place at a facility located near a sensitive waterbody. In order to meet the requirements for medium and high priority facilities, the owners/operators must select, install and maintain appropriate BMPs on site. Since the selection of the appropriate BMPs is a site-specific process, the types and numbers of additional BMPs will vary for each facility.

1. **Only conduct maintenance or repair work in designated areas.**
 - Conduct maintenance and repair work in a designated area with spill containment.
 - Construct a berm or intercept trench at doorways to prevent the runoff of uncontaminated stormwater from adjacent areas as well as stormwater runoff.
2. **Utilize dry cleanup methods such as sweeping, try to avoid washing down work areas.**
 - If work areas are washed and if discharge to the sanitary sewer is allowed, treat water with an appropriate treatment device (e.g. clarifier) before discharging. **DO NOT** discharge wash water to sanitary sewer until contacting the local sewer authority to find out if pretreatment is required.
 - If discharge to the sanitary sewer is not permitted, pump water to a tank and dispose of properly.
3. **Use drip pans and/or containers where needed.** Keep a drip pan or container under equipment or vehicles when unclipping hoses, unscrewing filters, or conducting other maintenance and repair work that may result in fluids dripping or splattering onto the shop floor or ground.
4. **Inspect vehicles and equipment for leaks.**
 - Inspect incoming vehicles and equipment for leaks.
 - Inspect vehicles and equipment during regular maintenance; keep records.

MINIMUM BEST MANAGEMENT PRACTICES

Pollution Prevention/Good Housekeeping

- Utilize dry cleanup methods such as sweeping try to avoid washing down work areas.
- Use drip pans and/or containers where needed.
- Inspect vehicles and equipment for leaks.
- Dispose of all waste products properly and recycle whenever possible.
- Clean storm drain inlet(s) on a regular schedule and after large storms.
- Store idle equipment under cover.
- Keep equipment clean and free of excess oil and grease.
- Remove all fluids from retired, wrecked, or salvaged vehicles.
- Dispose of solvents per instructions on the container.

Stencil storm drains

Training

- Train employees on these BMPs, storm water discharge prohibitions, and wastewater discharge requirements.
- Provide on-going employee training in pollution prevention.

¹ EPA " Preliminary Data Summary of Urban Stormwater Best Management Practices"

5. **Dispose of all waste products properly and recycle whenever possible.**
 - Promptly transfer waste materials to the proper waste or recycling drums.
 - Store waste and/or recycling drums in designated areas with spill containment.
 - Separate hazardous and non-hazardous wastes, do not mix used oil and solvents and keep chlorinated solvents separate from non-chlorinated solvents.
 - Store cracked batteries in a non-leaking secondary container and dispose of properly at recycling or household hazardous waste facilities.
 - Recycle greases, used oils, oil filters, antifreeze, cleaning solutions, batteries, and hydraulic and transmission fluids whenever possible.
 - Label and track the recycling of waste material (e.g. used oil, spent solvents, batteries). Purchase recycled products to support the market for recycled materials.
 - Separate wastes for easier recycling. Keep hazardous and non-hazardous wastes separate, do not mix used oil and solvents, and keep chlorinated solvents separate from non-chlorinated solvents.
6. **Paint signs near outdoor drains and post signs at sinks to remind employees and others not to pour wastes down drains.**
7. **Clean storm drain inlet(s) on a regular schedule and after large storms.**
8. **Store idle equipment under cover.**
9. **Keep equipment clean and free of excess oil and grease.**
10. **Completely drain oil filters before recycling/disposal.**
11. **Remove all fluids from retired, wrecked, or salvaged vehicles.**
12. **Dispose of solvents per instructions on the container.**
13. **Use non-toxic chemicals for maintenance when possible.**
 - Use non-caustic detergents instead of caustic cleaning for parts cleaning.
 - Use a water-based cleaning service and have tank cleaned. Use detergent-based or water-based cleaning systems in place of organic solvent degreasers.
 - Replace chlorinated organic solvents with non-chlorinated solvents. Non-chlorinated solvents like kerosene or mineral spirits are less toxic and less expensive to dispose of properly. Check list of active ingredients to see whether it contains chlorinated solvents.
 - Choose cleaning agents that can be recycled.
14. **Reduce or eliminate use of solvents when feasible**

Training

1. **Train employees on these BMPs, storm water discharge prohibitions, and wastewater discharge requirements.**
2. **Train employees on proper spill containment and cleanup.**
 - Establish training that provides employees with the proper tools and knowledge to immediately begin cleaning up a spill.
 - Ensure that employees are familiar with the site's spill control plan and/or proper spill cleanup procedures.
 - BMP IC17 discusses Spill Prevention and Control in detail.
3. **Establish a regular training schedule, train all new employees, and conduct annual refresher training.**
4. **Use a training log or similar method to document training.**

Stencil storm drains

Storm drain system signs act as highly visible source controls that are typically stenciled directly adjacent to storm drain inlets. Stencils should read "No Dumping Drains to Ocean".

References

California Storm Water Best Management Practice Handbook. Industrial and Commercial. 2003.
www.cabmphandbooks.com

California Storm Water Best Management Practice Handbooks. Industrial/Commercial Best Management Practice Handbook. Prepared by Camp Dresser & McKee, Larry Walker Associates, Uribe and Associates, Resources Planning Associates for Stormwater Quality Task Force. March 1993.

King County Stormwater Pollution Control Manual. Best Management Practices for Businesses. King County Surface Water Management. July 1995. On-line: <http://dnr.metrokc.gov/wlr/dss/spcm.htm>

Model Urban Runoff Program: A How-To Guide for Developing Urban Runoff Programs for Small Municipalities. Prepared by City of Monterey, City of Santa Cruz, California Coastal Commission, Monterey Bay National Marine Sanctuary, Association of Monterey Bay Area Governments, Woodward-Clyde, Central Coast Regional Water Quality Control Board. July 1998 (Revised February 2002 by the California Coastal Commission).

Stormwater Management Manual for Western Washington. Volume IV Source Control BMPs. Prepared by Washington State Department of Ecology Water Quality Program. Publication No. 99-14. August 2001.

For additional information contact:

City of Lake Forest
Public Works Department
25550 Commercentre Drive, Suite 100
Lake Forest, CA 92630
(949) 461-3480

<http://www.lakeforestca.gov>