

# **STORMWATER BMPs: MUNICIPAL PARKING LOT MAINTENANCE**

## **AFFECTED FACILITIES**

These BMPs apply at all municipal parking lots, parking garages or elevated parking structures.

## **BACKGROUND**

Municipal parking lots and parking garages can contribute trash, suspended solids, hydrocarbons, oil, grease, and heavy metals to receiving waters via stormwater runoff or discharges. Anything entering a storm sewer system flows untreated into the water bodies that we use for swimming, fishing, and drinking water.

## **BEST MANAGEMENT PRACTICES**

### **General Maintenance & Sweeping**

- Designate personnel to conduct regular inspections of parking facilities and stormwater conveyance systems on a regular basis. Recommend cleaning if necessary.
- Clean leaves, trash, sand, and other debris regularly to prevent debris from reaching any storm drain inlet or storm detention area (preferably by dry sweeping).
- Establish frequency of parking lot sweeping based on usage and observations of waste accumulation. Sweep after special events or fairs.
- Contact your municipal public works department or private street sweepers to sweep parking lot(s) after winter storms and during leaf season in the fall.
- Maintain a map of the property identifying directions of stormwater flow and the location(s) of any storm drains on site.
- Stencil or mark any storm drain inlets in or near the parking lot with the message "Do not to dispose of any materials or wastes here; drains to creek".

### **Contracts & Leases**

- All contracts with service providers and property leases should stipulate that contractors and lessees comply with applicable storm water BMPs in the conduct of their services or occupancy.
- Contracts should stipulate that all contracted employees have been trained in proper stormwater management BMPs.

### **Concrete and Construction Work**

- Do not allow slurry from saw-cutting to enter storm drains.
- Install storm drain protection devices (hay bales, "pigs", socks or drain covers) around or over storm drain inlets when doing any construction or maintenance work within 25 feet of the inlet(s).
- Designate a "Wash Out Area" on the job site in a grassy or graveled area where pooled water can soak into the ground. Never wash out on a street or paved area or near a storm drain.
- If no "Wash Out Area" is available, wash out into a container (5-gallon bucket or wheelbarrow) and dispose of material properly.

### **Materials Storage, Loading and Unloading**

- Do not store any potentially hazardous liquid or solid materials (paints, pesticides, fertilizer or salt/sand) outside unless adequate secondary containment and cover are provided or the container is specifically designed for outdoor storage.
- Do not load or unload materials near a storm drain inlet, pipe, culvert, or drainage ditch unless drains are blocked.

### **Mowing**

- Sweep pavement or sidewalks where grass clippings, granular fertilizer or other dry chemicals have fallen. Sweep back onto grassy areas.

### **New Construction and Design**

- Incorporate Low Impact Development (LID) and/or infiltration techniques into new construction or re-construction of existing, impervious areas such as:
  - Rain gardens
  - Constructed wetlands
  - Infiltration swales or basins
  - Grass (or vegetated) filter strips or swales
  - Tree islands or planters
  - Permeable pavement
  - Surface sand filters

### **Paving/Re-surfacing**

- Re-seal or pave only on dry days when no rain is expected.
- Stop paving activities during or immediately before rainfall.
- Pre-heat, transfer or load hot, bituminous material (asphalt) far away from storm drain inlets.
- Only use asphalt-based or petroleum-based sealants. (Do not use coal tar sealants.)
- Protect or block nearby storm drain inlets from debris created during maintenance work (preparing or grinding the surface for an asphalt cap, chip sealing, concrete breaking and removal, and saw cutting).
- Cover and seal all storm drains before applying seal coat or slurry seal. Leave covers in place until the job is complete and until all water from emulsified oil sealants has drained or evaporated. Clean up debris from inlets and dispose of properly.

### **Surface Cleaning Sidewalks & Parked Areas**

- Do not hose down any sidewalks or parking areas except where wash water will only enter the sanitary sewer (if approved) or vegetated areas.
- If you do NOT use any chemicals or detergents AND are only cleaning surfaces of ambient dust, THEN you may direct the wash water to nearby landscaping OR contain it on site and allow it to evaporate. When discharging to landscaping, make sure water is being absorbed into the ground and not running off into a storm drain or paved area.
- Dry clean up methods should be used prior to any pressure washing. These include using absorbents (kitty litter, rags, sand, etc) to clean up spills, sweeping, vacuuming, and scrapping off dried debris. Use absorbents on oily spots prior to sweeping or washing. The waste material should be disposed of properly.

- If you must pressure wash, identify where all storm drains are located before starting. Wash water should not be allowed to flow down gutters or enter storm drains. All wash water must be captured for proper disposal.
  - Determine where water will pool for collection.
  - Use the following types of equipment to protect storm drains and to contain and collect wash water: vacuum pumps, booms / berms, portable containment areas, weighted storm drain covers, inflatable plumber's plugs, oil/water separators, holding tanks, portable sump pumps, hoses, absorbents.
  - Once wash water is collected, dispose of it properly. Collected wash water may be disposed of into a sanitary sewer drain at the job site or at the contractor's place of business. (FIRST, ask for permission from property owner and the local wastewater treatment plant. DO NOT dispose wastewater to a septic system.)

### **Storm Drains, Structural BMPs and Detention Areas**

- Inspect storm drain structures, detentions areas or structural BMPs frequently for debris accumulation and clean as needed.
- Contact your municipal Public Works Department to clean out any storm drain structures or detention/infiltration areas yearly, if possible.

### **Salt or Deicer Application**

- Hand-apply deicer or sidewalk salt. Use sparingly.
- If truck-applying, use the lowest application rate that will be effective. Ensure that the equipment is calibrated to optimum levels according to manufacturer's instructions.
- Avoid applying liquid or solid salt products directly on bridges, near creeks or other water bodies.
- Use the most environmentally friendly de-icing products available (Calcium Chloride, Calcium Magnesium Acetate, Urea, Potassium Acetate, or other low-salt products).

### **Snow Plowing and Snow Storage**

- Never plow, push, or blow snow, snow mixed with deicer, or other debris directly into creeks, rivers, ponds, or other watercourses.  
Snow disposal areas should be located at least 500\* feet from any drainage ditches, ponds, creeks or wetlands. (*\*500 feet is the recommended distance.*)
- If possible, store excess snow in a pervious area where melt water can infiltrate into the ground and not run into the storm drain system.
- Reduce plowing speed in sensitive areas (near creeks, wetlands or other water courses) to prevent snow and deicing materials from entering waterways.

### **Parking Garages and Elevated Structures**

- Inspect and clean parking garages or structures routinely.
- Drains located within parking structures should discharge to the sanitary sewer.
- Any debris around the storm drain or sump pump should be removed and disposed of properly.
- Any automotive spills and/or drips should be cleaned up with dry clean-up methods (absorbents).
- Ensure that elevator sump pumps, interior floor drains, and parking garage floor drains are plumbed to the sanitary sewer (not to storm drains). *Note: A State of*

*Colorado Wastewater Discharge Permit may be required if these drains do NOT go to the sanitary sewer.*

### **Painting and Striping**

- Schedule painting, marking, and striping projects during dry weather only. Cease all activities when rain snow threatens.
- Use thermoplastic markings in place of paint whenever feasible.
- Promptly clean up any spills of paints, cleaners or other chemicals.
- Block nearby storm drain inlets when painting or striping roads and parking lots.

### **REQUIRED EMPLOYEE AND CONTRACTOR TRAINING**

- Train all current employees and contractors who perform building maintenance of this BMP.
- Train all new hires and job transferees who will conduct building or facilities maintenance.
- Conduct refresher training for all employees who conduct building or facilities maintenance as needed.
- Train all employees who might be required to clean up a spill or leak on proper spill clean-up procedures. See "*BMP: Spill Clean-Up.*"
- Contracts should stipulate that all contracted employees have been trained in proper stormwater management BMPs.

### **REQUIRED STRUCTURES AND EQUIPMENT**

- None

### **INSTALLATIONS REQUIRED FOR NEW CONSTRUCTION OR RENOVATIONS**

- See *BMP: New Construction.*

### **REFERENCES**

1. Colorado's Phase II Municipal Guidance, October 2001
2. *California Stormwater BMP Handbook*, January 2003
3. *Knoxville (TN) BMP Manual, Activities & Methods*, January 2001
4. *City of Tacoma: Surface Water Management Manual (Vol. IV Source Control BMPs)*, January 2003
5. *Municipal Facility Runoff Control Plan* (City of Lakewood, CO)
6. *Best Management Practices for Industrial Storm Water Pollution Control* (Santa Clara Valley, CA)
7. Best Management Practices for Pressure Washers, Sacramento, CA  
<http://stoppp.tripod.com/downloads/pressurewashbmps.doc>