

BEST MANAGEMENT PRACTICES (BMPs)...

What are They?

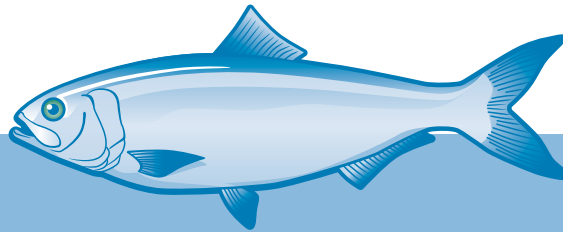
CLEAN STREETS MEAN CLEAN STREAMS

Inexpensive to implement
and easy to use,
BMPs help you to do
your share to protect
the environment.



The term Best Management Practice (BMP) refers to practices or measures used to control water pollution that keep our rivers and streams as clean as possible. BMPs can be employed at commercial, residential and industrial sites to help control and prevent stormwater runoff pollution. While many simple BMPs are inexpensive to implement, other BMPs are more costly. The Clean Water Partners program promotes using simple and less costly **Good Housekeeping BMPs** to prevent stormwater from picking up debris, wastes and chemical pollutants. Good Housekeeping BMPs are common sense measures that help businesses manage site activities and operations to control pollution. When employed, these BMPs prevent materials and wastes from being exposed to stormwater, thereby preventing stormwater runoff pollution.

“Treatment” BMPs include structures and devices specifically designed to remove pollutants in stormwater runoff. Treatment BMPs generally are more costly and involve methods of mechanically trapping or chemically altering pollutants in stormwater runoff, prior to stormwater being discharged off site.



10 GOOD HOUSEKEEPING PRACTICES Your Business Should Employ

I. Sweep Regularly and Employ Dry Methods for Cleaning

- Routinely sweep paved areas to remove and pick up silt, sand, dirt, debris, and litter for proper disposal as solid waste into a dumpster or trash receptacle.
- Avoid using water to hose down dirty sidewalks, bays, and other paved areas to prevent washing debris, silt, grease, and detergents into storm drains and streams.
- Use dry methods (such as granular or fabric absorbent products) to clean up spilled or leaked oil, grease or chemicals. Absorbents should be selected based on the type of chemical that was spilled. Spent absorbents must be picked up after use and properly disposed.
- Spot clean stains where necessary to remove oil, grease or chemical residues. Take steps to limit water usage when spot cleaning to reduce the production of wastewater. If wastewater is generated, collect and properly dispose of the liquid into a drain connected to a wastewater treatment system or sanitary sewer, according to local code.
- When sweeping alone is insufficient or your area is too large, use a cleaning machine. Cleaning machines can be leased as needed or a cleaning contractor can be hired. Wastewater from these activities must be disposed at approved locations.



Sediment and debris in the water make it difficult for fish to breath, just like smoke in the air makes it difficult for humans to breath.

2. Cover, Contain, & Elevate Materials

- Cover outdoor storage containers with leak proof lids that fit securely to contain contents and materials.
- Ensure storage containers, particularly waste storage containers, are leak proof.
- Materials and wastes stored outdoors should remain contained and covered when not in use.
- Elevate materials stored outside using platforms or wood pallets to prevent direct contact with runoff.
- Locate certain activities under a cover or roof, such as an overhanging awning, a lean-to structure, or a stand-alone canopy. These activities include fueling and maintenance of vehicles; battery, hazardous material, and salvage storage.
- Use stormwater diversion methods like barriers, berms, and curbing or constructed devices, to redirect stormwater runoff away from stored materials and stockpiles.
- Use temporary covers, such as tarps, for materials that do not have permanent coverage or containment. Plastic tarps must impermeable and well anchored to prevent them from blowing away. (Check guidelines in your municipality.)
- Control easily dissolved and eroded materials, such as earth or soil, using temporary seeding or other stabilization methods.
- Use secondary containment, including drip pans/trays, catch basins, curbing, or containers, to collect and contain materials in the event a primary storage container (i.e., fuel tank, holding tank) is breached, overflows or leaks. (Know local requirements for hazardous materials stored on site.)



- Capture pollutants before runoff enters storm drains or streams. Employ temporary or permanent treatment practices, as necessary, to filter and treat any polluted runoff that cannot be captured. (Check guidelines in your municipality.)





“Pesticides” include a large group of chemical products, designed to control or kill “pests” including mold, mildew, bacteria, plants, weeds, insects, and rodents.

3. Relocate Activities Away from Surface Drainage Paths

- Locate outdoor activities likely to pollute stormwater runoff (i.e., waste storage, material/product storage, processing and cleaning activities) as far away as possible from stormwater flow paths, including downspouts, gutters, ditches, depressions, and channels where stormwater collects, flows and drains.
- Locate outdoor activities on higher elevations to provide employees more time to recognize and clean up spilled materials before they reach stormdrains or streams.
- Locate fueling activities on an impervious surface (i.e., concrete pad) to prevent any spilled fuel from soaking into the ground.

4. Reduce or Avoid Certain Activities

- Reschedule activities (i.e., painting, mixing chemicals or fertilizing) when rain or snow are likely to occur. If an activity cannot be rescheduled, take extra precautions to prevent stormwater runoff pollution.
- Discontinue activities on sites where good housekeeping practices are not feasible or effective. For example, in lieu of washing vehicles on site, take vehicles to a commercial car wash that collects and treats wastewater. Lease enclosed storage space for supplies, overstock and salvage, when on-site space is limited or inadequate.

5. Limit Use of Toxic Products and Materials

- Seek non-toxic or alternative products and practices for cleaning, pest control, and degreasing. For example, steam cleaning systems that use water, mild detergents, and mechanical action, rather than solvents, may be an alternative to some cleaning and degreasing activities.
- Keep inventory to a minimum by purchasing only amounts needed for the foreseeable future.
- Consider possible cost savings associated with non-toxic product use compared to both the purchase and disposal costs of products containing toxic chemicals.



CAUTION



RADIOACTIVE



POISON



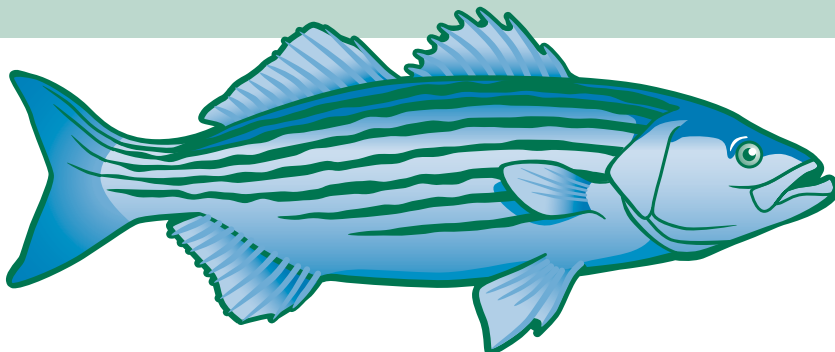
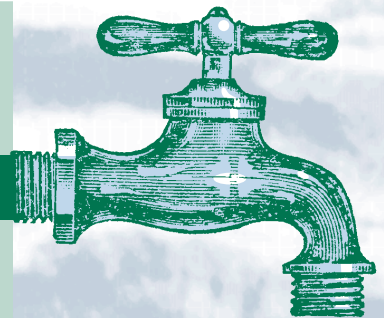
6. Inspect Outdoor Areas Regularly to Identify Maintenance Needs

- Visually inspect all outdoor areas (parking lots, loading bays, walkways, waste storage) to check for residues, stains or traces of pollutants on paved surfaces, around stormwater conveyances and structures, and ports and valves.
- Replace leaking, corroded, or otherwise deteriorating outdoor storage containers, facilities, or structures to prevent release or discharge of materials and wastes that can pollute stormwater runoff.
- Conduct periodic visual inspections to remove blockages in stormwater conveyances and structures (storm drains, gutters, grates, catch basins, basins, and ponds) to ensure their proper function. Inspections should always be conducted following storm events.
- Clean stormwater conveyances and structures on a regular basis to prevent the transport of accumulated sediment and debris from entering receiving waters.
- Routine maintenance and cleaning of stormwater facilities should always include removing pollutants, not flushing them into storm drains and receiving waters. (Check telephone directory to identify contractors providing pollutant removal services.)



7. Eliminate Illicit Connections to Storm Drainage System

- If unsure about where a drain or wastewater discharges, have a licensed plumber verify that indoor drains properly discharge to a sanitary treatment system or other approved system where wastewater is treated to remove dirt and contaminants. “Illicit connections,” as they are often called, improperly connect indoor plumbing to storm drainage systems and streams. Illicit connections to storm drainage systems are often from floor drains, slop sinks, and boilers, facility heating and cooling systems, and production processes. These occurrences are common in older buildings and can easily persist unnoticed for years.
- Wastewater containing chemicals, residues, pesticides, oil, and grease should be disposed or discharged into an approved treatment system.



The Federal Clean Water Act prohibits illicit discharges into stormwater drainage systems.

8. Stock Spill Control and Cleanup Supplies

- Stock and maintain adequate supplies of spill cleanup materials (including absorbent granules, fabrics and pads; containers/bags; brooms and dustpans; and vacuum equipment) in locations accessible to where spills and leaks are likely to occur.
- Familiarize all employees, subcontractors, and delivery personnel with spill control and clean up procedures for materials handled on site, including the proper disposal of spent clean up materials.
- Display clean up procedures as a reminder, especially for infrequent activities (i.e., periodic refueling and restocking).
- Know special handling, clean up and disposal procedures for hazardous materials/wastes used on site. Check with manufacturers, product labels, and product Material Safety Data Sheets (MSDS).

9. Educate Employees, Contractors, & Customers

- Educate your employees, suppliers, subcontractors, and customers about stormwater pollution control and associated responsibilities.
- Label stormwater inlets (i.e., storm drains) as a reminder that pollutants entering a storm drainage system discharge to nearby waterways.
- Inform employees at staff meetings or training sessions about good housekeeping practices and procedures to control stormwater runoff pollution.
- Consider offering incentives that encourage adherence to good housekeeping practices.

10. Use Plantings to Help Control Stormwater Runoff Pollution

- Maintain vegetation and landscaping in sloped areas and around the site since plants (native grasses, wildflowers, shrubs, and trees), as well as the soil they grow in, have the capacity to filter pollutants in stormwater runoff.
- Seek opportunities for stormwater to soak into the ground and be absorbed by soil and plants by directing rainwater, gutters and downspouts into stabilized and planted areas. Ensure areas where stormwater is being directed are well situated away from building foundations. Areas suitable for passive stormwater infiltration include those with little or no pedestrian and vehicular traffic, and areas that are level and well stabilized with vegetation or rock.



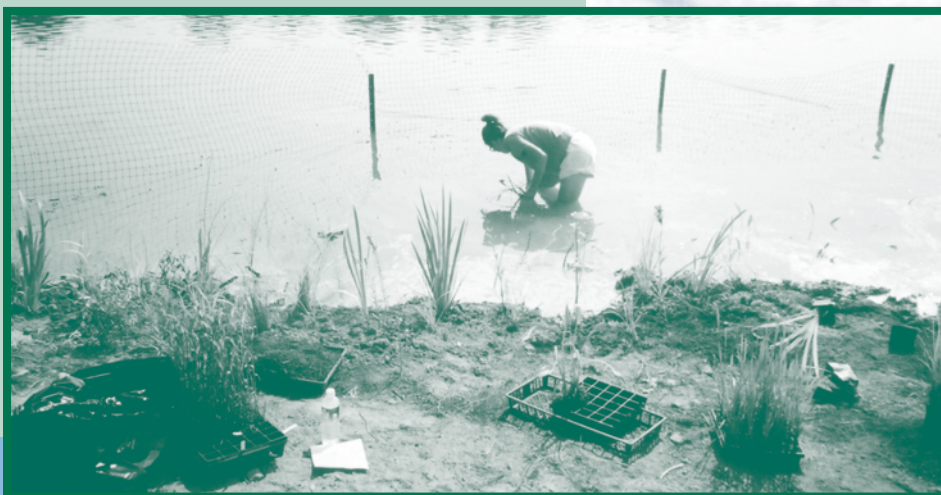
- Control dirt and disturbed earth to prevent soil erosion, which clogs stormwater grates, drains and conveyances and causes sediment pollution in waterways by employing the following erosion control measures:

Temporary Erosion Control Measures: These measures may include placing straw mulch, organic mulches, erosion control fabrics, or rock on areas during grading, construction, landscaping, and earth moving activities.

Permanent Erosion Control Measures:

- (1) Regrade to reduce the slope of the ground and to slow speed of flowing water;
- (2) Plant well-adapted grasses, ground covers, and plants with good root systems to hold soil in place and improve stormwater percolation into the ground; and
- (3) Place stone or rock on disturbed areas to prevent soil from washing away. Mulch can help control erosion depending upon slope and force of runoff.

(Obtain information from local conservation district or municipality for acceptable erosion control practices.)



TREATMENT BEST MANAGEMENT PRACTICES

When are They Needed?

Treatment BMPs, also called structural BMPs, refer to structural methods and devices designed to remove or treat pollutants that have been picked up by stormwater runoff flowing across a site. Treatment BMPs should be considered and implemented when good housekeeping practices alone are not sufficient in preventing stormwater runoff pollution. Treatment BMPs are designed by an engineer and can be installed or constructed on site to address site-specific conditions and activities. Treatment structures designed to filter oil and grease from parking lot runoff include oil-water separators, sand filters, and stormceptors. Treatment BMPs can also include biological treatment methods such as wetponds, biofiltration swales, and constructed wetlands that use selected plants and vegetation to absorb and trap certain pollutants. All treatment BMPs require ongoing inspection and maintenance to ensure proper functioning and, generally, are more expensive to implement and maintain than Good Housekeeping BMPs.

More information about treatment BMPs, including design and inspection guidelines, can be obtained from your county or local conservation district office, state environmental protection agency, or your municipality.

