



## APPENDIX B

# TIPS FOR IMPLEMENTING & MAINTAINING STORMWATER BMPs

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**BMPs, Best Management Practices**, are measures employed to control stormwater runoff. BMPs include structural and non-structural practices that prevent adverse impacts to creeks and rivers and protect our watersheds from the damaging affects of uncontrolled stormwater runoff.

*Owners and operators of shopping centers, office parks, gasoline stations, auto repair shops, and other commercial properties should be aware of the maintenance requirements of stormwater management structures located on their site. In urban settings and developed areas, these stormwater facilities often store stormwater under parking lots in large corrugated PVC pipes or concrete vaults. In suburban and less developed areas where more land is available, properties more typically have surface stormwater management structures (wet ponds, dry ponds, basins and trenches). Some stormwater management structures, such as sand filters, biofiltration swales, and sediment forebays, were designed to treat stormwater runoff to filter and remove runoff pollutants before discharging it. Other stormwater management structures were designed to infiltrate stormwater permitting it to percolate through soils and into the ground to recharge groundwater and stabilize flow in nearby streams. All of these structures, especially maintenance-intensive oil/grit separators, require regular inspections and maintenance to ensure they function as originally designed.*

### **Out of Sight – Out of Mind?**

Stormwater management facilities and structures are not always visible; some are underground, others' are tucked in the back corner of your lot. Wherever stormwater is managed on your site -- even when *out of site* -- it still should be on your mind.

- Underground storage structures, are facilities designed to prevent post-storm rushes of water from eroding streams and provide removal of contaminants.
- Pretreatment structures, such as sediment forebays, biofiltration swales, sand filters, filter common pollutants from stormwater before discharging it into another stormwater structure or to the environment. Oil/grit separators (sometimes called water quality inlets) and stormceptors® (a

### **Reduce Costs & Liability:**

#### **Check Dumpster & Property Daily for Litter**

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#### **Evaluate Outside Practices that Involve Use of Chemicals**

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#### **Cover and Elevate Outside Storage of Wastes & Chemicals**

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#### **Make Employees Aware of on- site Stormwater Management Structures & their Functions**

treatment structure now in use in Chester County) also filter and remove common pollutants from stormwater runoff. These pretreatment structures are designed to remove pollutants such as oil, grease, sediment, dirt and other pollutants and, have important maintenance requirements. They can be used independently or along with other stormwater structures.

- Infiltration structures, such as infiltration basins and trenches, infiltrator berms, and porous pavement, promote infiltration of stormwater into the ground to recharge ground water aquifers and stabilize base flow in streams.

For these stormwater structures to properly function they must be inspected regularly and maintained. Stormwater structures should be cleaned out regularly to ensure accumulated litter and debris, sediment, and oil/grease does not get re-released into the environment and end up in stream water. Inspection and maintenance of these structures should occur at least annually and after storm events. (Check with your design engineers and manufacturers for maintenance requirements.) (Specialized OSHA training and a confined space permit may be required before anyone can safely and legally enter stormwater structures.)

### **Don't Be a Litter Bug**

Sometimes customers and the public will throw trash away on or near your site. Unfortunately, if that trash is picked up by stormwater, it will flow into storm drains, stormwater conveyances and structures and can plug inlets, block outlets, and cause structures to malfunction. Keeping litter contained in clearly labeled containers, covering dumpsters and trashcans with secure lids and keeping wastes off the ground will help prevent litter from impeding the function of your stormwater management structures. Grates and racks on stormwater inlets help keep trash out, but these too require daily inspection to ensure they don't get clogged and divert stormwater away to erosion prone areas.

### **Toxics In – Toxics Out**

Keep pollutants, especially toxic chemicals, like solvents, petroleum-based chemicals, and pesticides, from entering stormwater structures. Most toxic chemicals are not removed by typical stormwater structures; therefore, prevent their contact with stormwater runoff. Some structures promote direct infiltration of stormwater into the ground; if toxic chemicals are present in stormwater runoff seeping into the ground, they can very quickly pollute ground water aquifers and water supplies.

### **For the Record**

Keep paperwork, including instructions, procedures, and inspection logs, to help ensure institutional knowledge about long-term care and maintenance of stormwater facilities remains on site. These structures are an investment, protect and manage them to preserve your investment and water quality.

### **Simple Things to Consider to Protect Water Resources**

- Promote infiltration of stormwater into the ground where possible.
- Minimize the distance stormwater runoff travels on paved surfaces across your property to decrease evaporative loss.
- Re-route roof runoff onto planted areas where the earth is stabilized with grass, vegetation, stone or mulch (consider the slope and lighting conditions, consult with engineers, landscape architects or local nurseries).
- Direct stormwater runoff over a vegetated land (i.e. field, strip of land at site perimeter or landscaped area) rather than over pavement. Use parking bumpers that permit stormwater runoff to flow under and around instead of solid curbing helps direct the flow of stormwater onto lawns, fields, landscaping or into stormwater structures. (Consider slope and ground conditions; stone can

help stabilize earth at edges of pavement where it transitions to lawns.)

- Create small infiltration areas where water can safely collect in a stone or sand bed and seep into the ground (soil conditions must be sufficiently permeable to permit infiltration and vegetation must tolerate wet conditions).
- Use porous paving materials for parking lots and other paved surfaces to promote stormwater infiltration (i.e., porous pavement).
- Minimize disruption to natural drainage patterns when engaged in site renovations, expansion and construction.
- During land grading activities and landscaping projects protect stormwater inlets and stormwater structures from inundation by dirt and disturbed earth.
- Prevent compaction of soils that are relied upon to infiltrate stormwater (i.e., infiltration berms/basins/trenches)
- Limit mowing in stormwater structures that use vegetation for pollutant removal and energy dissipation.
- Don't apply fertilizer or pesticides to vegetation in stormwater structures; chemicals can readily migrate into groundwater supplies and pollute water.
- When landscaping, select plants that promote percolation into the ground, including native plants (i.e. native grasses instead of turf grasses).

#### ***Learn More ...***

*Take the Chester County  
Self-Guided Stormwater BMP Tour  
Call the Chester County Conservation District,  
610-436-9182 or 610-696-5126,  
for more information and for a copy of the  
Stormwater BMP Tour Guide*

*Check local laws and regulations  
in your municipality for  
stormwater management requirements*