



## Stormwater Best Management Practices for Municipal Parks and Golf Course Maintenance Operations

Federal regulations require stormwater protection practices to be in place in municipal operations and businesses that have the potential to pollute stormwater. Parks and golf course maintenance operations have the potential to pollute stormwater as it flows out of landscaped areas or maintenance facilities into storm drains. Anything entering a storm sewer system flows untreated into the water bodies we use for swimming, fishing, and drinking water.

Landscape management activities such as weed control, pesticide and fertilizer application, watering, and mowing may contribute pollutants to the storm drain system. To illustrate the potential impact that a golf course can have to stormwater: on average, 18-hole golf courses apply about 780 pounds of pesticides (active ingredients) to the course per year (GCSAA, 2000). In an average year, a Colorado golf course can use about 30 to 65 million gallons of water to maintain all turf (*Greening Your Golf Course, A Pollution Prevention Guide for Colorado Golf Courses, 2002*). Landscape chemicals and wastes can pollute storm water with sediments and toxins that can kill fish and wildlife and can harm humans. Fertilizers can contribute to algae blooms and deplete oxygen from receiving waters.

### Best Management Practices (BMPs)

The objective in stormwater protection is that **only rainwater and snow melt go down the storm drain**. Best Management Practices (BMPs) are specific steps to prevent stormwater pollution as a result of day-to-day activities at parks and golf course maintenance operations. The BMPs address not only direct flow of pollutants to storm drains, but also “threatened discharges” where there is a high probability for stormwater pollution (materials that are no longer contained in a pipe, tank, or other container such as a leaking waste oil drum without secondary containment or any spills or wastes that have been released and are not actively being cleaned up). All affected employees shall review this information sheet as a training tool, and make every effort to keep pollutants from going down the storm drain by putting the following BMPs into practice.

Activity	Best Management Practices
<b>General</b>	<ul style="list-style-type: none"> <li>Do not dump any liquids or other materials outside. Direct flow of pollutants as well as threatened discharges to storm drains, gutters, or waterways are illegal.</li> </ul>
<b>Concrete Pouring or Finishing</b> (Also applies to contractors)	<ul style="list-style-type: none"> <li>Designate a “Wash Out Area” on the job site in a grassy or graveled area where pooled water can soak into the ground. Use for washing out all equipment. Never wash out in street, creek, ditch or storm drain.</li> <li>If no “Wash Out Area” has been designated, wash out into a bucket or container, dispose in a designated Wash Out Area at another job site (with site owner permission) or return to the batch plant for disposal.</li> </ul>
<b>Fueling</b>	<ul style="list-style-type: none"> <li>Post signage prohibiting “topping off” and describing spill response procedures.</li> <li>Keep a spill response kit at or near each fueling area.</li> <li>Require that the person doing the fueling or liquid transfer remain present during entire fueling operation. (“Don’t walk away!”)</li> <li>When fueling in the field from small containers, use a funnel or containers with spouts to prevent spills.</li> <li>During bulk liquid (i.e. oil, gas or fertilizer) transfer, cover or berm around all down-gradient storm drain inlets within 25 feet.</li> <li>Keep all drain valves in liquid bulk containers and secondary containments locked in the closed position.</li> </ul>
<b>Landscaping, Lawn &amp; Vegetation Maintenance</b>	<ul style="list-style-type: none"> <li>Mulch-mow grass.</li> <li>Develop an Integrated Pest Management Plan.<sup>1</sup></li> <li>Avoid broadcast spraying of pesticides. Choose an appropriate method of application such that application does not exceed the problem area. (<i>Fertilizer may be broadcast sprayed.</i>)</li> <li>Avoid spraying pesticides or fertilizers within 50 feet of any surface water or storm drainage structure (unless stricter limits apply).</li> <li>Designate “no spray zones” and/or buffer areas around water features.</li> <li>Follow all manufacturers’ recommendations for mixing, applying, cleaning-up, storage and handling of pesticides and fertilizers.</li> <li>Apply wastewater from rinsing pesticide containers on target pests or use it to dilute the next batch.</li> </ul>

<b>Material Storage, Loading &amp; Unloading</b>	<ul style="list-style-type: none"> <li>Do not store any liquids or other materials that could impact surface water outside unless adequate secondary containment and cover are provided or the container is specifically designed for outdoor storage.</li> <li>Do not load or unload materials near a storm drain inlet or drainage ditch or over unpaved surfaces.</li> </ul>
<b>Pathway Construction</b>	<ul style="list-style-type: none"> <li>When constructing or repairing paved pathways, use inlet protection devices such as hay bales or covers to protect any storm drain inlets that are within 25 feet of the work area and are at the same or lower elevation than the work area.</li> </ul>
<b>Spill Response</b>	<ul style="list-style-type: none"> <li>Use spill prevention methods to ensure no hazardous materials reach the floor or ground.</li> <li>Keep spill cleanup equipment in or near all work areas and use only "dry" cleanup methods to manage spills.</li> <li>Develop a formal Spill Response Plan. Post the plan near spill cleanup materials.</li> </ul>
<b>Stormwater Runoff Prevention</b>	<ul style="list-style-type: none"> <li>Maintain a map of the property, identifying directions of stormwater flow and storm drains.</li> <li>Stencil (decal) storm drains on or near the facility.</li> </ul>
<b>Vehicle/Equipment Repair &amp; Storage</b>	<ul style="list-style-type: none"> <li>No maintenance or repair work is performed outside. (Only emergency repairs and maintenance activities that do not involve fluids may be performed outdoors.)</li> <li>Do not store leaking vehicles or equipment outdoors. Contain the leak, repair immediately, or move indoors and repair.</li> </ul>
<b>Vehicle &amp; Equipment Washing</b>	<ul style="list-style-type: none"> <li>Hose or brush off mowers (reels and decks) and tractors over a grassy area using no soap. Leave clippings on grassy areas or dispose of in trash or by composting.<sup>2</sup></li> <li>Other vehicles (ex. pick-up trucks or on-road vehicles) must be washed in a designated washing area that drains to the sanitary sewer or must be driven off-site to a commercial or other designated car washing facility.</li> <li>By December 31, 2006, wash all vehicles and equipment only in a designated washing area that drains to the sanitary sewer.</li> </ul>

<sup>1</sup> **Integrated Pest Management** is defined as: "the balanced use of cultural, biological, and chemical procedures that are environmentally compatible and economically feasible to control pests or noxious weeds." Biological and physical methods are preferred such as manual removal of weeds, the use of natural predators or parasites of a pest or the use of ladybugs to control aphids. Chemical control should be used as a last resort and then the least toxic product should be used.

<sup>2</sup> *For mowers, tractors and other non-road equipment until such time that a designated washing area can be constructed or by December 31, 2006.*

### Watershed Approach to Stream Health (WASH)

To cost-effectively meet stormwater regulations and the region's water quality needs, several municipal governments in the Boulder Creek and St. Vrain watersheds joined together as part of the Watershed Approach to Stream Health (WASH) Project. Participants include Boulder County; the cities of Boulder, Longmont and Louisville; and the towns of Superior and Erie. The primary goal of the WASH Project is to implement a regional stormwater management program and to address broader water quality and watershed issues common to the Boulder Creek and St. Vrain Creek drainage areas. WASH is partnering with the PACE Program to help municipal operations and businesses implement stormwater BMPs.



### WASH Project Stormwater Coordinators

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