

Introduction

This fact sheet is intended to guide designers of **industrial land developments** in the identification and implementation of effective and economical low impact development (LID) and pollutant source control practices. These “design stage” considerations, when combined with thoughtful management of the industry once in operation, can be effective in *preventing* stormwater pollution from the industry by reducing potential pollutants *at the source*.

Low Impact Development Practices

Industrial developments can be designed to prevent stormwater pollution when careful efforts are made by the site designer to conserve natural areas, reduce impervious surfaces (e.g., rooftops and pavement), and better integrate land development and stormwater management techniques. Use of a combination of these practices, collectively known as LID practices, makes it possible to reduce the amount of stormwater, and therefore pollutants, that are generated from an industrial site. This reduction in stormwater can yield multiple benefits for the site owner, including lower costs for stormwater infrastructure construction and maintenance, improved site aesthetics, and in some cases, enhanced site amenities, natural walking trails and lunchtime picnic areas. Topeka Municipal Code Chapter 13.35 encourages the use of stormwater LID practices and additional guidance is provided in the *City of Topeka Stormwater BMP Design Handbook*.

Pollutant Source Control Design Considerations

DUMPSTERS

- ✓ Location
 - ▶ Away from storm drainage inlets and channels
 - ▶ In a shaded or covered area, if possible
 - ▶ Easily accessible by employees & waste trucks
- ✓ Drainage (dumpster pads)
 - ▶ Direct to the sanitary sewer (NOT the storm drainage system) or a gently sloped grass area
 - ▶ Direct away from storm drainage inlets and channels, using curbs, dikes, or berms

AIR CONDITIONER & REFRIGERATION

- ✓ Provide an accessible sanitary sewer drain for cleaning and wash-water drainage
- ✓ Provide a condensate reuse system or a drain to an open vegetated area or sanitary sewer

CONCRETE TRUCK WASHOUT FACILITIES

- ✓ Location:
 - ▶ Accessible to concrete trucks
 - ▶ At least 50 feet away from any storms drains, channels, swales, ditches, and waterbodies

CEMENT FACTORIES

- ✓ Cover or contain materials and material delivery areas as much as possible
- ✓ All drains must discharge to the sanitary sewer system

SANITARY SEWER LINES & SEPTIC LATERALS

- ✓ Locate away from roads and driveways, trees, and temporary construction areas
- ✓ Connect to the sanitary sewer system
- ✓ Connection to the storm drainage system is prohibited!



SLOPE & STREAMBANK STABILIZATION

- ✓ Slopes
 - ▶ Assess slope stability prior to design. To improve stability:
 - Regrade to reduce the slope
 - Use hardy, durable, preferably native plants
 - Use a retaining/crib wall or other structure
 - Use slope drains or divert surface water away
- ✓ Streambanks
 - ▶ Do not alter streams without KDHE permits
 - ▶ Retain and/or enhance with hardy, durable, preferably native plants
 - ▶ Use retaining walls, rock walls, or gabions where necessary
 - ▶ Removal of vegetation in buffers is prohibited (TMC Ch 17.10)

TRUCKING & SHIPPING/RECEIVING AREAS

- ✓ Use indoor loading bays or covered outdoor loading bays
 - ▶ If outdoor, the roof must overhang, or the door skirt must fit snugly to both the building and truck doors
- ✓ Loading dock grade must be sloped/recessed to direct flow to an inlet with a shutoff valve (connected to the sanitary sewer) or dead-end sump (with enough capacity to hold a spill while the valve is closed)
- ✓ Install berms around the loading area
- ✓ Install a sanitary sewer inlet in the area for cleaning and wash-water drainage

FLEET MAINTENANCE & FUELING AREAS

- ✓ Maintenance area must be indoors or covered with a paved or concrete pad
- ✓ Install curbs or berms high enough to redirect water from storms away from area
- ✓ Grade entire fueling area to be mounded or elevated, and to drain to a single inlet that has a shutoff valve with a sump, allowing collection of accumulated liquids

WASTE/HAZARDOUS WASTE STORAGE

- ✓ Provide a covered, impervious waste storage area
 - ▶ Must have berms, curbs, or dikes to prevent stormwater exposure
 - ▶ Secondary containment must be sloped to drain into a dead-end sump
 - ▶ Connection to the storm drainage system is prohibited!

**EQUIPMENT & MATERIALS YARDS**

- ✓ Provide roof cover for ALL equipment and materials
- ✓ Use concrete for paved areas instead of asphalt
- ✓ Grade yard areas higher than the parking lot (or construct a berm) so it drains only to sanitary sewer inlets within the yard
- ✓ Slope parking lots away from yard or install curbs to direct lot stormwater to a storm drain
- ✓ Construct a special, covered area for the "dirtiest" equipment and for maintenance areas to allow better management of their higher potential for discharges, leaks, and spills
- ✓ Install oil/water separators where yard area exposure to stormwater cannot be eliminated

OUTDOOR LIQUID STORAGE TANKS

- ✓ Provide indoor areas or small, covered storage buildings
- ✓ Outdoor areas must be enclosed with a berm or ditch, with all dumpsters covered
- ✓ Provide overflow protection and guard posts/bollards around tanks and piping
- ✓ Secondary containment structures must:
 - ▶ Be lined or made of materials that will not react or degrade with liquids in storage
 - ▶ Provide at least 10% of the volume of all the containers or 110% of the volume of the largest container, whichever is greater
 - ▶ Provide additional allowance for rainfall (10-year, 24-hour storm), if open
 - ▶ Consider hydrostatic pressure
- ✓ Spill ponds are prohibited

COMPOSTING OPERATIONS

- ✓ Provide a large area that separates stormwater from compost leachate