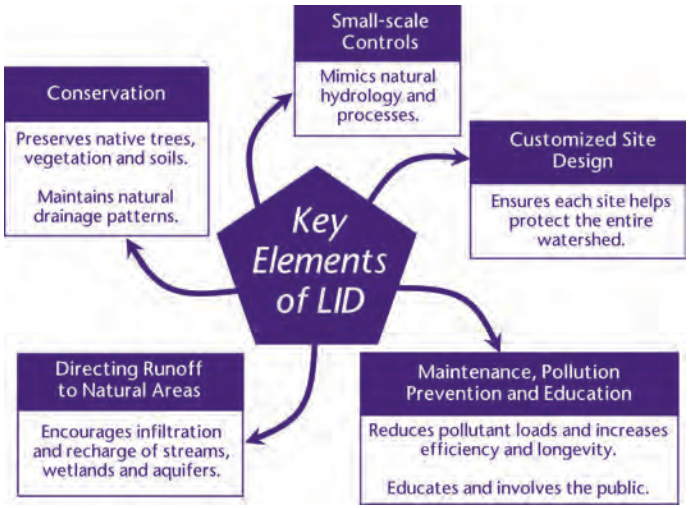
Low Impact Development practices for managing stormwater



Cisterns and Rain Barrels
Tanks and containers that store rainwater for landscaping.

Bioretention Areas
Vegetated areas that collect, treat, and infiltrate rainwater.

Vegetated Swales
Shallow drainage channels that slow runoff and filter it.

Green Roofs
Vegetated roof systems that capture rainfall and return it to the atmosphere.

Permeable Paving
Paving surfaces that allow rainwater to percolate into the ground.

Rain Gardens
A natural or dug shallow depression planted with suitable trees, shrubs, flowers, and other plants allowing runoff to soak into the ground and protect water quality.

Where to find more information

- **Ontario Ministry of the Environment**
  www.ene.gov.on.ca
- **Riversides - Homeowners' Guide to Rainfall**
  www.riversides.org
- **Stormwater Manager's Resource Center**
  www.stormwatercenter.net
- **Minnesota Urban Small Sites BMP Manual**
  www.metrocouncil.org/environment/Watershed/BMP/manual
- **Catching the Rain: A Great Lakes Resource Guide for Natural Stormwater Management**
  www.fxbrowne.com/html/StormwaterGuideBook.pdf
- **Reducing Runoff - University of Conneticut**
  nemo.uconn.edu/tools/reducing_runoff/runoff
- **Canadian Morgage and Housing Corporation**
  www.cmhc-schl.gc.ca
- **Low Impact Development Center**
  http://lowimpactdevelopment.org
- ***On the Living Edge:*** *Your Handbook for Waterfront Living* published by the Living ByWater Project. Available from the Muskoka Heritage Foundation at (705) 645-7393.

Muskoka Watershed Council
9 Taylor Road, Box 482
Bracebridge, ON P1L 1T8
Phone: (705) 645-7393
Fax: (705) 645-7888
Email: watershed@muskokaheritage.org
Website: www.muskokaheritage.org/watershed

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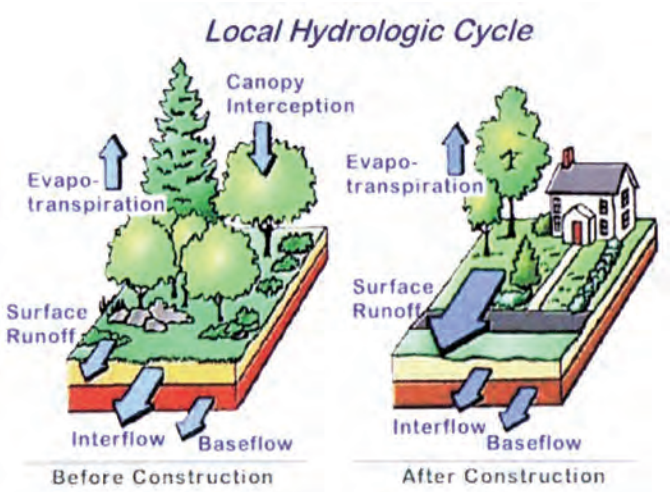
BEST PRACTICES SERIES

What is stormwater?

Stormwater is water from rain or melting snow that does not soak into the ground. As the water flows over lawns and hard surfaces, such as roads, driveways and rooftops, it picks up pesticides, road salts, heavy metals, oil, bacteria, nutrients and other harmful pollutants and transports them directly into rivers and lakes.

The sheer force and volume of polluted runoff can cause increased flooding risks and erosion that degrades aquatic habitat and limits recreational uses of water bodies. Even relatively little hardened surface cover in a watershed can impact water quality, with stream degradation occurring when only 10 to 20% has been hardened.

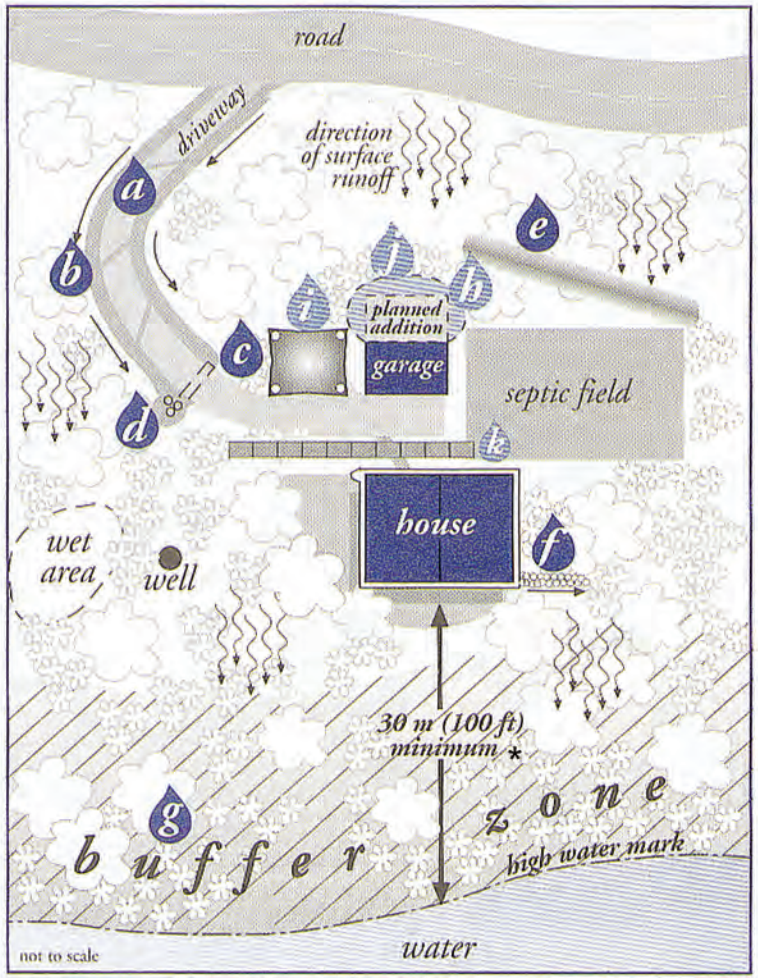


The objective of on-site stormwater management is to slow down and purify runoff before it reaches the waterbody. Dealing with stormwater at the source before it becomes a problem is the most effective and least costly solution.

A stormwater management plan for your property should be designed to protect sensitive ecological areas, minimize land disturbances, and retain natural drainage and vegetation.

The ABCs of stormwater management

- Decrease the amount of runoff you cause.
- Intercept rainfall before it comes into contact with a hardened surface.
- Divert your stormwater to vegetated or gravelled areas that are less likely to erode.
- Detain stormwater to slow it down and allow it to soak into the ground.
- Reduce paved surfaces to promote infiltration into the ground and reduce surface runoff.



Deal with stormwater on your property

- **a** driveway water bars and curves prevent water from heading directly to the lake or storm sewer
- **b** runoff ditches to direct flow into settling pools
- **c** culverts, permeable pavements and gravel allow precipitation to filter into the ground
- **d** settling pool for driveway runoff
- **e** depression (swale) or ridge (berm) redirects surface runoff and prevents it from entering the lake or storm sewer
- **f** roof runoff directed into gravel-filled trench, rainbarrel or splash pad to protect against erosion
- **g** buffer zones, wetlands and areas of native vegetation reduce runoff and remove sediment

construction tips

- **b** clear minimum area for project and conduct in phases to reduce erosion
- **i** cover excavated soil with tarp
- **j** replant cleared area promptly and cover with straw or mulch to prevent erosion of bare soil
- **k** filter runoff with silt fencing or straw bales to slow runoff and trap sediment on-site; install trenched sediment fencing prior to clearing and excavating large areas for cottage, garage or septic field

* increase building setbacks to allow more area for runoff from the building to infiltrate the ground

Adapted from On the Living Edge