

Worksheet #14 – Water Runoff Management

Use this worksheet to assess how well your property minimizes the potential for water runoff and property damage..

Why should you be concerned?

- Rural runoff, also referred to as stormwater, is managed by natural topography including slope, elevation, and land cover. All stormwater eventually ends up in nearby waterbodies.
- Surfaces such as roofs, paved areas, bare soil, and sloped lawns all contribute to the volume of surface water runoff because they impede water infiltration into the ground.
- Runoff carries soil, pet feces, salt, pesticides, fertilizers, oil and grease, fuels, leaves, litter, and other possible pollutants into streams, ponds, wetlands, lakes, and oceans.
- Water that flows into storm drains or ditches is directly discharged into streams and rivers and eventually in the Great Lake. Runoff is not cleaned by treatment facilities.
- Without adequate riparian vegetation buffers along-side waterbodies, contaminants flow directly into lakes, rivers, and streams.
- Polluted water runoff degrades the lakes, rivers, and wetlands. Soil makes the water murky and damages fish habitat. Nutrients such as phosphorus encourage algae that can crowd out other aquatic life and change the chemistry of the water.
- Water runoff is not only a problem for water quality. It can also flow into basements, cause extensive property damage - including erosion, slope instability and flooding, decrease property value, and disrupt recreation.

What can you do?

1. Minimize the amount of water runoff from your property.
2. Minimize the area of your property that is used as a path or driving surface and use water - permeable materials for driveways and pathways.
3. Do not locate any impermeable surface near waterbodies or adjacent to any water course.
4. Make sure that foundation tiles and municipal drain outlets are not located in erosion-prone areas.
5. Reduce the amount of potential pollutants on your property that can be carried by water runoff.
6. Encourage the use, filtration, and infiltration of stormwater within your property boundaries.

Water Runoff: How do you rate?

Topic	Best 4	Good 3	Fair 2	Poor 1	Your Rating
SURFACES					
1 Surface Permeability	<p>All driving, parking, walking, and patio surfaces are constructed of a porous material (i.e. wood deck, interlocking bricks, stepping stones),</p> <p>AND/OR gravel and woodchips are used to surface walkways with minimal compaction.</p>	<p>50% of driving, parking, walking, and patio surfaces are constructed of porous material,</p> <p>AND additional parking spaces are not paved.</p>	<p>Paved surfaces drain to an area that promotes infiltration and filtration,,</p> <p>AND</p> <p>Impermeable and porous material is light in colour.</p>	<p>All paths, parking, driveways, and outdoor patios are paved, regardless of nearness to watercourse,</p> <p>AND walking surfaces are not restricted to paths with foot-traffic compaction throughout.</p>	<input type="checkbox"/>
2 Extent of Impervious Surfaces and Slope	<p>Driveway is minimal and follows natural contours,</p> <p>AND there are no other impervious/compacted areas.</p>	<p>Driveway is minimal but does not follow natural contours.</p>	<p>Driveway is extensive but follows natural contours.</p>	<p>Extensive driveway and surfaced areas that do not follow natural contours,</p> <p>OR compacted and/or paved surfaces run straight down slope.</p>	<input type="checkbox"/>

Topic	Best 4	Good 3	Fair 2	Poor 1	Your Rating
SURFACES					
3 Areas of Bare Soil	No areas of bare soil.	Grass or non-invasive groundcover planted immediately to prevent erosion.	Non-invasive groundcover planted immediately to prevent erosion.	Bare soil left uncovered and unplanted.	<input type="checkbox"/>
	Temporary bare areas are mulched, AND straw bales, diversion ditches, and silt fences used to trap sediment.		Some areas are mulched to prevent erosion.	No regard given to sediment loss through runoff.	<input type="checkbox"/>
	All plant beds have minimum 8 cm (3 in) depth of mulch.	Plant beds have 2.5 - 5.0 cm (1-2 in) depth of mulch.	Most plant beds are mulched to a depth of 2.5 cm (1 inch).	No plant beds are mulched.	<input type="checkbox"/>

tip

Organic material, such as leaves, swept or blown into street sewers possibly provide a breeding spot for mosquitoes over winter.

tip

Cover newly-seeded lawns lightly with straw mulch to 50% coverage to prevent erosion.

Topic	Best 4	Good 3	Fair 2	Poor 1	Your Rating
POTENTIAL POLLUTANTS					
4 Car Washing	Cars and trucks are occasionally washed at commercial car wash.	Cars and trucks taken to commercial carwash or spray booth.	Cars, trucks, or other items are washed on a lawn or gravel driveway using biodegradable, phosphate-free, water-based soaps.	Cars, trucks, or other items are washed on a driveway, street, or other paved area.	<input type="checkbox"/>
5 Application and Use of Pesticides, Fertilizers, De-icers and Salts, Pool and Other Outdoor Chemicals	Spills are cleaned up immediately, AND applications are delayed until after rain.	Spills are cleaned up immediately on paved surfaces. Pool is discharged into the sanitary system or slowly onto your lawn.	Proper use of pesticides, fertilizers, de-icers, and other outdoor chemicals.	Spills are not cleaned up, OR applications are not delayed to avoid rain.	<input type="checkbox"/>
6 Grass Clippings, Leaves, and Other Yard Wastes	Grass clippings, leaves, and other yard wastes are swept off paved surfaces and away from water flow routes, AND plant material is not placed on bluff slopes or over the top of banks where it can kill slope vegetation and cause slope instability, OR leaves and other yard wastes are composted.	Leaves and other yard wastes are left to compost on site.	Leaves and other yard wastes are collected in appropriate containers and left for municipal collection.	Grass clippings, leaves and other yard wastes are left on driveways, streets, and other paved areas to be carried off by stormwater, OR yard waste is burned on-site.	<input type="checkbox"/>

tip

Ensure that your winter snow pile is not close to any shoreline or water course. Melt water may cause erosion and contamination.

tip

To avoid sending dirty, soapy water into a water course or lake, wash your car on the lawn, or better yet, take it to a commercial car wash or spray booth where the wash water is recycled, treated, or conveyed to the sanitary sewer system.

Topic	Best 4	Good 3	Fair 2	Poor 1	Your Rating
DRAINAGE					
7 Downspouts, Gutters and Drains	<p>Roof gutters, downspouts, and basement drains installed and cleaned regularly,</p> <p>AND downspouts discharge to an area that promotes infiltration and filtration while obeying municipal bylaws and protecting your foundation.</p>	<p>Downspouts are not directed at or into nearby gullies.</p> <p>tip Use rain barrels to catch rainwater that can later be used to water gardens during low rain periods. Cover the rain barrel with a screen to prevent mosquito breeding.</p>	<p>Downspouts direct drainage onto impervious surfaces,</p> <p>OR downspouts are not directed at or into nearby gullies.</p> <p>tip Clogged gutters on a single house can produce over one million mosquitoes a season.</p>	<p>Roof gutters, downspouts, and/or basement drains are not checked/cleaned regularly,</p> <p>OR downspouts and roof gutters are aimed at adjacent properties without an intercepting swale or ditch, onto septic tile beds or into nearby gullies.*</p>	<input type="checkbox"/>
8 Surface Water Drainage	<p>All surfaces are sloped away from the house at a minimum of 2% to prevent water damage.</p>	<p>Any paved surface is sloped away from the house at a minimum of 2%.</p>		<p>Paved or compacted surfaces do not slope away from the house by a minimum of 2%.</p>	<input type="checkbox"/>
			<p>tip If you have more than five cows, horses, sheep, or other livestock on your property you might need to develop a Nutrient Management Plan.</p>		

* These conditions may violate provincial legislation or municipal by-laws.

Resources List

Water Runoff Management

For more information...

Centre for Sustainable Watersheds

Handbook:

On the Living Edge: Your Handbook for Shoreline Living
(Ontario Edition)

livingbywater.ca/prodservices.html#on

Conservation Authorities

Contact your local Conservation Authority for information on water runoff management matters in your area. CA listings are available at conservation-ontario.on.ca

Runoff and Erosion Protection & Additional Best Management Practices
conservationontario.ca/source_protection/files/ODWSP%202009%20Finals/ODWSP_FAQS_runoff_EN_2009_02_27_WEB.pdf

Credit Valley Conservation - Flood and Flood Proofing Resources
creditvalleyca.ca/watershed-science/flood-warning-and-forecasting/flood-and-floodproofing-resources

Credit Valley Conservation - Low Impact Development (FAQ)
creditvalleyca.ca/low-impact-development/low-impact-development-support/lid-faqs-and-resources/#lidcost

Minnesota Shoreland Management Resource Guide

shorelandmanagement.org

Ontario Ministry of Agriculture Food and Rural Affairs

Nutrient Management Plans

omafra.gov.on.ca/english/environment/bmp/

Ontario Streams

Ontario's Stream Rehabilitation Manual

ontariostreams.on.ca/rehabilitation%20_manual.html

RAIN Program, Green Communities Canada

slowrain.ca

Sustainable Neighbourhood Retrofit Action Plan

sustainableneighbourhoods.ca/

Tip of the Mitt Watershed Council – Northern Michigan Book:

Understanding, Living with, and Controlling Shoreline Erosion:
A Guidebook for Shoreline Property Owners

watershedcouncil.org