

Storm drains suck up money

You've probably had flyers in your mailbox about it, but like most people you ignored them. But every time your family can't swim at the beach on a summer day, you are reminded. Or if your drinking water has a funny smell or is cloudy after a big storm, you pay attention.

And, if you've ever had to boil your tap water, or have had a sewer back up into your home, you'll never forget.

Stormwater is rainfall and melted snow that comes off roofs and driveways and roads and needs to go somewhere. It should seep back into the ground on lawns, gardens and green spaces. Ideally, we want surface water and stormwater to seep down in place to the aquifer or to recharge ground water.

The problem is that, as we continue to develop areas for us to live, we are covering the earth — that great big sponge — with houses, pavement, sidewalks, parking lots and shopping malls. A huge percentage of the ground in developed areas is nonpermeable. This means rainwater can't seep down.

All the millions of litres of water that fall to Earth has to go somewhere, and like good urban planners, we divert it. We create culverts and drains and sewers that lead to treatment plants or to our lakes, streams and oceans.

But, this water can amount to a lot of excess water pressure on the municipal sewage system. In an intense thunderstorm, or period of extended heavy rainfall, a lot of damage can result — flooding and sewage backups.

Waste water we send down the drain is treated before it enters lakes or streams. Most stormwater runoff is not filtered or treated at all. Because we've got to get rid of it quickly, it is rushed into our waterways and lakes. On the way it picks up all kinds of pollutants — animal waste, automobile oil and grease, exhaust particles, pesticides and herbicides — and that has a direct effect on local water quality. Don't forget — that's where we get our drinking water.

So what can individuals do to help take the pressure off municipal storm sewers?



The first thing is to make sure your downspouts aren't connected to the municipal sewage system.

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Paving over a community leads to polluted water

It used to be standard to do that, and in fact that "excess" storm water helped move the sewer system and keep it functioning. But disconnecting is becoming necessary. Even if it isn't mandatory yet, you should do it. It's better to take the strain off the municipal storm drains.

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A stormwater sewer in a European city involves huge tunnels eight metres below the surface. There are greener ways to manage rainwater.

Your downspouts should empty onto your own property, and as far away from your house's foundation as possible.

Collect water in rain barrels or cisterns to use later for irrigation. Also, storing water slows down the runoff into lakes and streams, which decreases the risk of flood damage.

Having a dry well or soakaway pit is a good idea, too. This is a buried drum, filled with stones, that rainwater can be fed into and slowly drain from.

Ideally you want to let the water percolate in place, being filtered naturally by plants and soil as it makes its way down to the aquifer.

Design your landscape to have grassy swales to slow down and filter the runoff, or have a soakway to absorb the water.

Remember ditches? Once every suburban driveway had a ditch and a culvert that slowed rainwater runoff.

That was the norm — now it's all sidewalks, curbs and gutters.

The first inch of rain that falls carries the largest percentage of pollutants in stormwater runoff. So, anything we can do to slow down that rush of water is good.

In the Lower Ninth Ward in New Orleans, we used rain boxes or mini rain gardens at intervals along the sidewalk, next to the storm drains. These were planted with native grasses to slow down and filter runoff. Consider planting a rain garden that will temporarily hold that first inch of rainfall and filter out pollutants like pet waste, cigarette butts, and car oil.

This isn't just an individual effort — it's one communities should make with all new developments.

Wind Walk — the first Holmes Community— is now being planned in Alberta. One of the most important elements in the development plan is stormwater management, along with on-site sewage treatment.

Wind Walk follows natural drainage patterns and allows ground water to be re-charged rather than levelling the ground and creating a blank slate, like many new developments do.

The goal of Wind Walk is to maintain the amount of water in the community at pre-development levels.

Wind Walk will incorporate large areas of natural landscape, swales, stormwater retention ponds — all of them are doing their part to manage and improve water quality.

And at the back of every individual lot is a stormwater conveyance path — a naturally planted swale — that provides habitat and manages water onsite.

I think this is a great model for every new community.