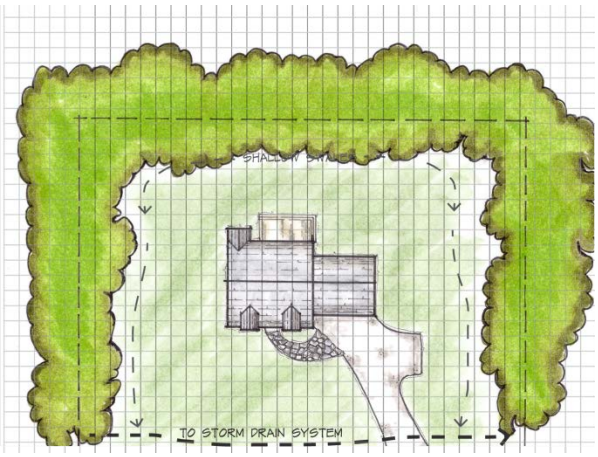
Stormwater—Do It Yourself Site Assessment

The best way to manage stormwater is to slow it down, spread it out and soak it in. There are actions that you can take on your property to do just that. You don't need to be an engineer to understand stormwater and to take steps to reduce flow. The main thing that you want to understand is where stormwater comes from on your property and where it flows. All you need to do that is some rain gear and your power of observation!

Take a walk around your property during a rain storm. Here are some of the things to take note of:

- If you have gutters and downspouts, where does the water discharge? Is it onto a vegetated area where it has the opportunity to spread out and soak in? Or is it directed onto a hard surface such as a sidewalk or driveway? If the water is directed onto lawn, will it be conducted downhill because of a steep slope?
- Where does the water from your roof fall if not collected and directed by gutters? Does the water soak in where it falls or does it runoff across a lawn or driveway? The roof valleys often shed large amounts of water.
- What about your driveway, sidewalks and paths? These features not only generate stormwater (even a dirt footpath, if hard packed, does not absorb water) but often concentrate water flows turning them into small rivers thereby in- creasing erosion and pollutants.
- Where does water enter your property? Is water coming onto your property from a road? From a neighbor's property? Is it a concentrated (identifiable channel) flow or does it sheet across a broader expanse, such as down a hill.
- Where does water leave your property? Do you have ditches or channels that conduct the water offsite? Does it run down your driveway? Where does it end up? Does it run onto a road or roadside ditch? Does it run onto a neighbor's property?
- If your property is along a stream or pond, how does water from your property reach that stream or pond?

You may find it useful to sketch a map of your property (house, yard, driveway etc) and note where water flows or accumulates. Grid paper can help you keep things to scale. Or you can go online, find an aerial photo of your property and make notations directly on that. Photographing of the flow and its evidence, such as channels, matted grass, or washed out gravel will help you recall locations once the storm is over.



Courtesty of NH Dept of Environmental Science

Courtesy of the Lancaster County Conservation District

After making these rain storm observations, you will have a good idea of where the water comes from and where it goes. What can you do? Here are some solutions as well as links to documents that provide more details.

One of the best things you can do is simply plant trees and shrubs on your property. Deep rooted, woody vegetation increase the amount of water that infiltrates into the ground. The water that soaks in is used by vegetation or becomes groundwater that will make its way slowly to the stream. This infiltration process helps maintain stream flow during periods of drought and filter out pollutants. Native trees and shrubs are particularly important as buffers along the edges of streams and ponds. In addition, the vegetation will also help reduce erosion, slow overland flow to the waterbody and filter out pollutants before the flow reaches the stream.

If you have gutters and downspouts that are discharging on to hard surfaces or running in a channel across your lawn, there are a number of simple solutions:

- Redirect the downspout onto an area where the water can spread out and soak in.
- Connect a rain barrel to the downspout and use it to water your trees, shrubs and flowers
- If you have large amounts of water and no suitable area for discharge, consider building a dry well (a stone filled pit) or rain garden (a slightly depressed vegetated area) at the end of the downspout.

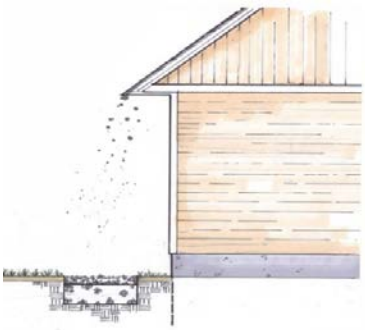


Illustration courtesy of NH Dept

If you don't have gutters and downspouts but have concentrated flows that don't soak in, there are several options.

Create a dripline infiltration trench, which is a shallow stone-lined trench that runs the length of the roof line. In poorly drained soils, a perforated PVC pipe may be needed to conduct the water away from the foundation.

You may consider installing gutter and downspouts at key spots and then use the solutions listed above.

There are a number of things you can do to reduce runoff from driveways, sidewalks and paths. Proper construction and maintenance will not only protect waterways but also save money in the long run.

- You can improve infiltration along the edge of your driveway, sidewalk or path by creating a vegetated swale, which is simply a shallow channel that slows water and directs it to a place where it can be absorbed.
- A driveway infiltration trench is similar to the dripline trench described earlier but is simply placed along the edge of a driveway or sidewalk.
- If you have steep paths which concentrate water flow, you could install infiltration steps to slow it down and let it soak in or create water bars to direct water off the path into a vegetated area.

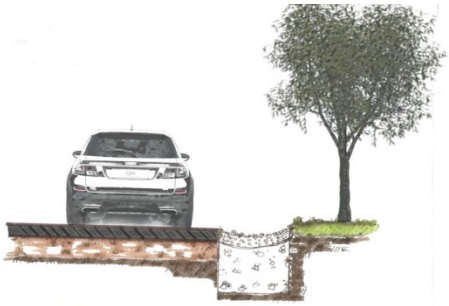


Illustration courtesy of NH Dept

- If you have paved or concrete surfaces, consider replacing them with a more permeable surface. Pervious pavers have a reservoir underneath them that collect and infiltrate water.

As mentioned earlier, you should take note of where stormwater enters and exits your property. If you have stormwater coming onto your property from public property such as a roadway or private property, work with your town or neighbors to con- sider the best options for managing it. Using what you have learned here, you may be able to help your town or neighbor reduce or eliminate the flow. Even though it is not 'your' stormwater, it may best be managed on your property by dispersing it into a vegetated area or into an infiltration practice such as a rain garden. At the same time, take responsi- bility for runoff that is generated by your property. Water doesn't obey property and a collaborative approach may be beneficial to you, your town and your neighbor.

Resource list

Friends of the Winooski River
www.winooskiriver.org/stormwater

Vermont Riparian Buffer Guide
www.vtwaterquality.org/stormwater/docs/sw_gi_1.5_protect_riparian_buffers.pdf

Vermont Lakewise Series
www.vtwaterquality.org/lakes/htm/lp_lakewise_standards_bmps.htm

Vermont Rain Garden Manual
www.winooskinrcd.org/wp-content/uploads/VTRainGardenManual.pdf

The Homeowner's Guide to Stormwater (Lancaster County PA)
www.lancasterwatersheds.org/documents/HomeownersGuideFINALweb_000.pdf

New Hampshire Homeowners Guide to Stormwater Management
www.des.nh.gov/organization/divisions/water/stormwater/stormwater-mgmt-homeowners