



FACT SHEET 6.3

VEGETATED SWALES

A vegetated swale is an open, shallow, vegetated channel or ditch that collects and moves stormwater runoff, preferably to an area better suited for treatment and infiltration, like a rain garden or dry well. The swale itself can also slow down, filter and infiltrate stormwater.

DID YOU KNOW?

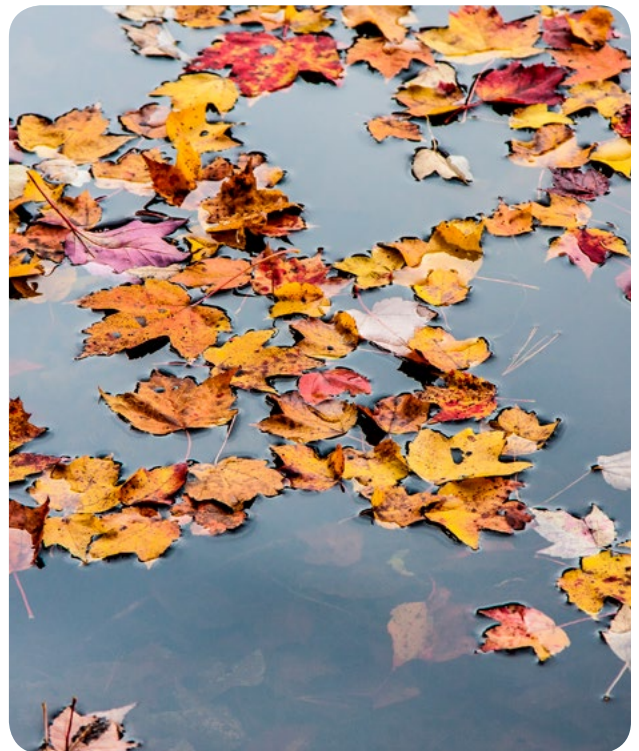
Volume vs. Velocity – Stormwater volume refers to the overall amount of water while stormwater velocity is the speed of the water as it moves or flows. Many stormwater Best Management Practices (BMPs) aim to reduce the overall amount of stormwater AND slow it down. Achieving both of these goals helps to control erosion, increase infiltration and reduce pollutants entering nearby surface water.

BENEFITS

- Directs runoff away from areas where pollutants may be more concentrated like animal yards
- Carries stormwater to an area where it can be better managed
- Traps and filters out sediment and attached pollutants
- Slows down stormwater runoff helping to control erosion
- Promotes infiltration of stormwater into the soil

Where can vegetated swales be used on Hobby Farms?

Vegetated swales can generally be used anywhere stormwater runoff collects including water from the roofs of houses, barns, and storage areas; covered compost areas; driveways and roadways; animal yards; the bottom of steep slopes; and near any other areas that generate stormwater runoff.



CAUTION!

Do not use vegetated swales to direct water off of your property, into the street or catch basin, or directly into surface water. Vegetated swales should be used to move stormwater to another, more suitable location on your property where it can further soak or infiltrate into the ground.

CAUTION!

Always call Dig Safe (811) before any type of digging or excavation to help ensure you do not come into contact with utilities, pipes or wires. This must be done at least 72-hours prior to the start of work. See www.digsafe.com for more information.



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DESIGN CONSIDERATIONS

Location

A vegetated swale should be located downhill from areas that produce stormwater runoff or at a location to intercept and redirect runoff away from higher pollutant areas. Remember to always check with your local Conservation Commission if you are working within 100' of a wetland or water resource area, or within 200' of a perennial stream.

Size

The length of your vegetated swale will be based on the distance between the source of your stormwater runoff (roof, driveway, roadway etc.) and the discharge location (raingarden, dry well, etc.). The width and depth of a vegetated swale can vary and is often determined by available space and the volume of water you are moving. A rule of thumb is to make the width of each of the sides of the swale three times the depth of the swale.

Slopes

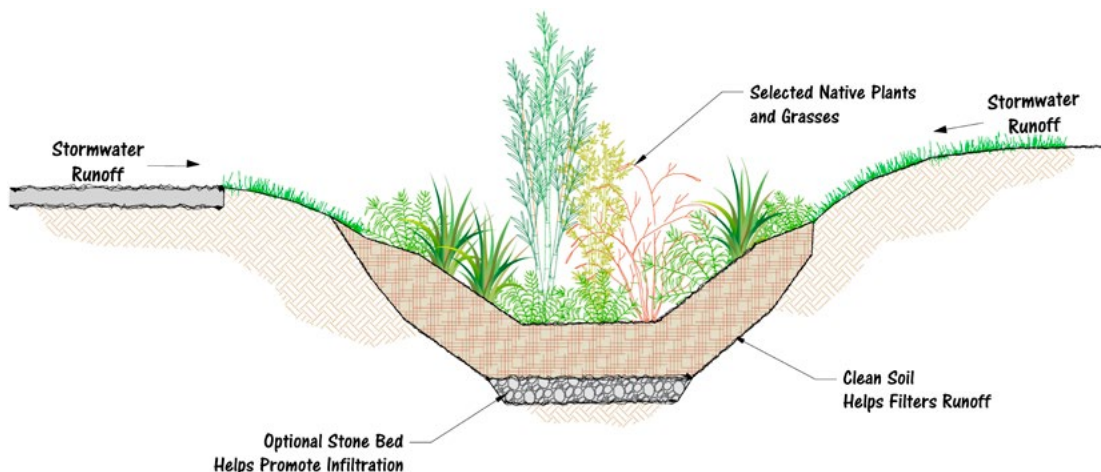
Swales are typically constructed in naturally sloping areas to move water from one location to another through gravity. Consider constructing periodic check dams or berms across the width of the swale. Check dams or berms can be easily constructed out of rocks, silt socks or even haybales and act as a speed bump to slow down stormwater. You can also slow flow by creating a meandering or winding swale (as opposed to straight) to create more time for sediment to settle out. Vegetated swales should not be constructed on steep slopes.

Discharge

Swales should preferably discharge to a vegetated area to allow the runoff to soak into the ground. If a vegetated area does not exist, consider constructing a dry well or raingarden for the swale to flow into.

Plants

Small shrubs and grasses that can tolerate both dry and wet conditions will do well in most swales. Stagger larger plants to either side of the deepest part of the swale, while grasses can be planted full width.



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Vegetated Swale



INSTALLATION

STEP 1

Mark your swale boundary with stakes, flags or paint and contact Dig Safe (811) at least 72-hours prior to digging. If Dig Safe identifies obstructions in or around your marked area you will need to relocate your swale.

STEP 2

Dig the swale, creating your channel and gently sloping sides along the entire length of the swale.

STEP 3

Install your check dams or berms along the bottom of the swale if needed.

STEP 4

The inlet to your swale where stormwater runoff enters may need to be stabilized with either plants or stone to help avoid erosion from incoming water.

STEP 5

Plant your selected vegetation and be sure to water during the early weeks.

MAINTENANCE AND MANAGEMENT

- ✓ Inspect seasonally and after heavy rains to remove sediment and debris
- ✓ Ensure new plantings are growing and existing plants are healthy
- ✓ Seed or plant any bare spots
- ✓ Remove invasive species
- ✓ Remove any hazard trees that pose a safety risk
- ✓ Do not use fertilizer or pesticides
- ✓ Keep farm animals out
- ✓ Keep heavy equipment out and avoid crossing or traveling through the swale to access your farming activities

HELPFUL LINKS

www.soaknh.org/wp-content/uploads/2016/06/Vegetated-Swale.pdf

http://www.maine.gov/dep/land/stormwater/stormwaterbmps/vol3/chapter8_1.pdf