

# Lake Wise Info Sheet



## Shoreland Best Management Practices for Lake-friendly Living.

### Benefits

- Water Quality
- Prevents Erosion
- Slow, Spread, Sink Stormwater
- Low Cost
- Low Maintenance
- Wildlife Habitat
- Visual Appeal
- Protection & Resiliency

VT DEC suggested BMP for shorelands

### Related Info Sheets:

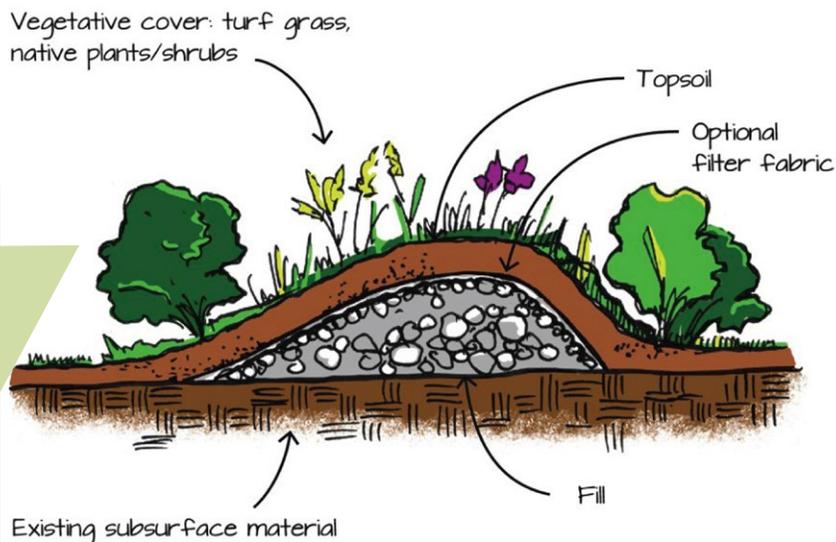
- Rain Gardens
- Downspout Disconnection & Rain Barrels
- Vegetated Swales

# FILTER BERMS

## Upland stormwater management

### Description.

Filter berms are vegetated mounds of earth with gradually sloping sides that slow and soak up stormwater runoff. The berm is filled with sand or stable, well-drained soil.



**Filter berm section diagram.**  
VT Guide to Stormwater Management.

### Applicability.

Stormwater from developed areas is directed through the filter berm(s), which filters and slows the runoff, encouraging infiltration. Native plants are planted in the berms to improve structural integrity and aesthetics. Soils should be well drained if infiltration is desired, but filter berms can also be used in poorly drained soils to slow and filter stormwater. Filter berms are good for areas with high groundwater tables where other infiltration practices are not recommended.

### How to.

1. Determine the area where the filter berm(s) will be installed. Do not install within 10 feet of structures or septic system. Mark the area with string or spray paint.
2. Clear the area of existing vegetation (other than turf grass) including the top root layer. Break up the soil and rough it up ensure it is not compacted.
3. Filter berms should be shaped with sandy, well-drained soils found on-site or nonorganic clean fill soil. You can design a more natural shape by creating a gradual peak on one side of the berm.
4. Berm height should be between six and 24 inches and will vary depending on the stormwater volume reaching the berm.

VERMONT

DEPARTMENT OF ENVIRONMENTAL CONSERVATION  
WATERSHED MANAGEMENT DIVISION





### Materials.

- ☀️ Spray paint or string to mark the area
- ☀️ Shovel
- ☀️ Rake
- ☀️ Sandy soil or nonorganic fill soil
- ☀️ Topsoil (weed-free)
- ☀️ Low-phosphorus compost
- ☀️ Native plants (grasses, shrubs, flowers)
- ☀️ Nonwoven geotextile fabric (optional)
- ☀️ Crushed washed stone (optional)



Wikimedia Commons

**A filter berm seeded with native wildflower meadow species.**

### How to.

5. Slope the sides of the berm so that they do not exceed a 4:1 ratio, meaning that for every vertical foot, there will be four horizontal feet. If side slopes are too steep, structural integrity could be compromised.
6. Optionally, a layer of nonwoven geotextile fabric can be added over the berm to improve stability.
7. Add six to 12 inches of clean (weed-free) topsoil on top of the berm and lightly tamp down the soil and smooth the sides of the berm, making sure not to compact the fill. A small amount of compost can be added when digging holes for plants to help boost growth in the first season.
8. Plant the berm with native plants, including grasses and shrubs, with the goal to cover the berm entirely with vegetation. Refer to the **Lake Wise Native Plant List** and **Restore Natural Plant Communities** for a list of recommended species. Plants can be seeded or transplanted from containers.
9. Mulch is not recommended because it can wash away but straw mulch can be applied to protect bare soil at planting. Optionally, washed crushed stone could be added along the base of the berm to prevent scour from stormwater flows.

### Maintenance.

Periodically remove accumulated debris and sediment that can cause clogging; put it in an area that will not wash into the lake. Inspect the berm after large rain events and in the spring. Remove weeds and invasive plants. Replace plants that die. Water plants during establishment in the first couple growing seasons. After that, plants may need to be watered in very dry periods.

### For more information...

- 💧 [The Vermont Guide to Stormwater Management for Homeowners and Small Businesses \(2018\)](#)
- 💧 [The Vermont Stormwater Management Manual Rule and Design Guidance \(Ch. 6.4.1, 2017\)](#)

