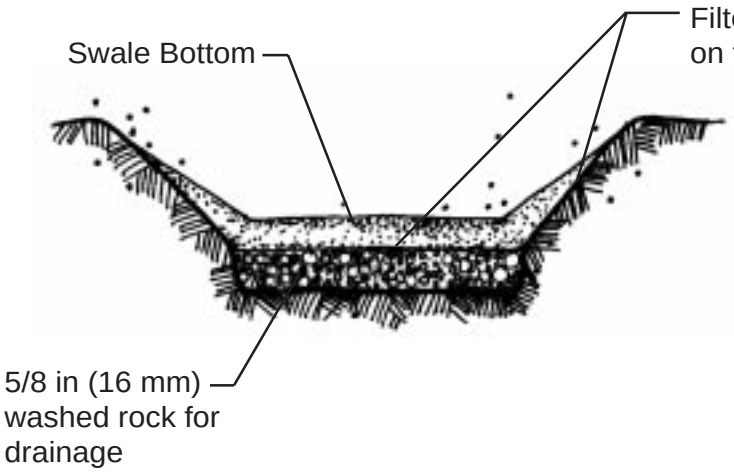
PRIMARY USE: For simple treatment of stormwater runoff from small sites where slopes are slight, water tables are high, and soil conditions result in saturation.
ADDITIONAL USES:

WET BIOFILTRATION SWALE

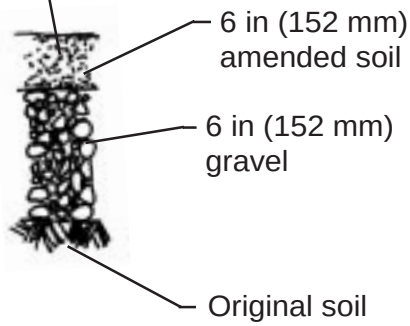
What is it? The wet biofiltration swale is a variation of the basic biofiltration swale and is designed for wet conditions.

Purpose

The wet biofiltration swale is used for sites less than five acres (two hectares) where longitudinal slope is minimal, high water tables occur, and ongoing low base flow results in saturated soil conditions. These swales are also recommended where detention ponds occur upstream.



Wet Bioswale Section View



Wet Bioswale Section View (Enlargement)

Limitations

Vegetation adapted to saturated conditions is required.

Materials

Vegetation as noted above. Masonry, logs, or rip rap as noted below.

Installation

Same as basic biofiltration swale but with the following differences. Bottom width may be increased to 25 feet (7.5 m), however a length-to-width ratio of 5:1 must be provided; no longitudinal dividing berm is required (minimum swale length is still 100 ft; 30 m). Where a longitudinal slope is greater than 2%, the biofilter must be stepped so slopes within the section average 2%; steps may be made of log check dams, short rip rap sections, or retaining walls; no low-flow or underdrain is required. A high-flow bypass is necessary where flows greater than the water design flow occur to protect vegetation from damage; the bypass may be an open channel parallel to the swale.

Source: Surface Water Design Manual, King County, Washington.

WET BIOFILTRATION SWALE

Additional Considerations:

RECOMMENDED PLANTS FOR WET BIOFILTRATION SWALES
(for King County, Washington Area)

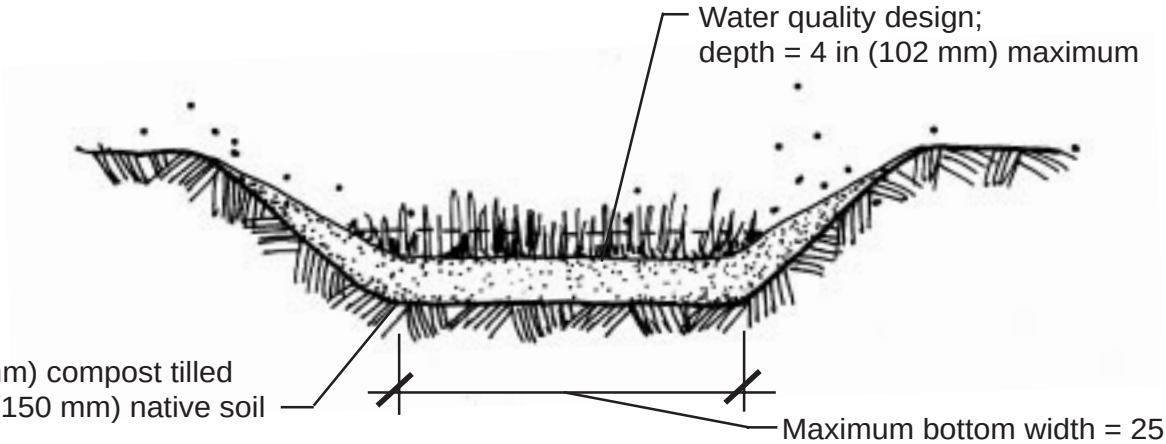
Common Name	Scientific Name	Spacing (on center)
Short awn Foxtail	*Alopecurus aequalis*	Seed
Water Foxtail	*Alopecurus geniculatus*	Seed
Spike Rush	*Eleocharis spp.*	4 in (102 mm)
Slough Sedge*	*Carex obnupta*	6 in (152 mm) or seed
Sawbreak Sedge	*Carex stipata*	6 in (152 mm)
Sedge	*Carex spp.*	6 in (152 mm)
Western Mannagrass	*Glyceria occidentalis*	Seed
Velvetgrass	*Holcus mollis*	Seed
Slender Rush	*Juncus tenuis*	6 in (152 mm)
Water Parsley*	*Oenanthe sarmentosa*	6 in (152 mm)
Harstem Bulrush	*Scirpus acutus*	6 in (152 mm)
Small-fruited Bulrush	*Scirpus microcarpus*	12 in (305 mm)

* Good choice for swales with significant periods of flow, such as those downstream of a Level 2 or 3 detention facility.

Note: Cattail (*Typha latifolia*) is not appropriate for most wet swales because of its very dense and clumping growth habit which prevents water from filtering through the clump.

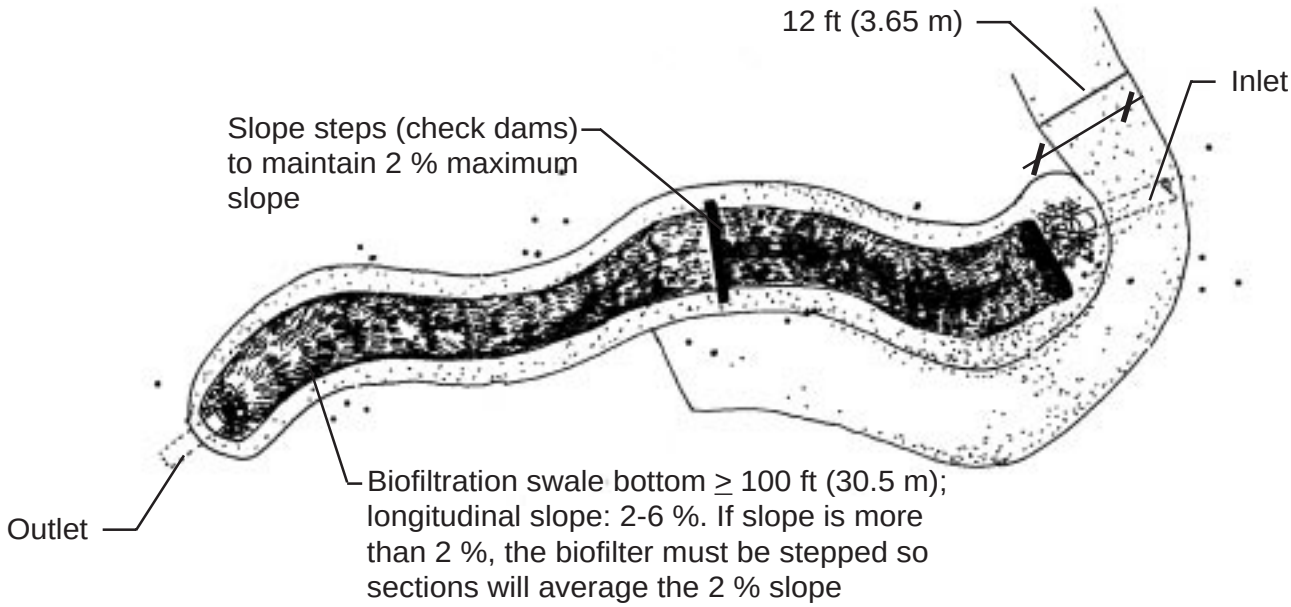
WET BIOFILTRATION SWALE

Additional Drawings:



Note: Wet biofiltration swale will work with and without gravel beneath surface; the gravel will allow more microbes to colonize and remove matter from the water.

Wet Bioswale
Section View



Wet Bioswale
Plan View

Source: Surface Water Design Manual, King County, Washington.