

GRASS SWALES

DESCRIPTION

Grass swales are shallow sloped, densely vegetated channels designed to treat stormwater runoff. As water flows through the channel, vegetation slows the water and allows for sedimentation and filtering of pollutants through the subsoil. Grass swales can be utilized in conjunction with other stormwater BMPs including rock check dams, compost socks, or compost berms. Grass swales are well suited for treating runoff from linear features such as highways, roads, or parking lots and can be used in lieu of curb and gutter. Grass swales provide an opportunity to minimize directly connected impervious surfaces.

DESIGN AND INSTALLATION

- Soils, drainage area, amount of rainfall, slopes, and percentage of impervious surface in the contributing watershed determine size and specifications.
- Swales should be used on low to moderate slopes that are less than 4%; underdrain recommended on slopes under 2%.
- Cross section of the swale should be trapezoidal, parabolic, or triangular with side slopes not exceeding 4:1.
- Construct swales (grading, adding soil amendments, planting) after site has been stabilized.
- Swales should be designed to provide safe access for mowing equipment.
- Swales should be planted with native, drought tolerant grass such as buffalo grass.

MAINTENANCE

- Routinely remove sediment buildup, litter, and debris from inflow points, swale bottom, and side slopes.
- Revegetate bare areas that show signs of erosion.
- Mow grass at a height of 3-4 inches.
- Remove invasive species or noxious weeds by hand, or other mechanical methods, before they flower.
- Water in times of drought.

For More Information
 SEMSWA www.semswa.org

Benefits:

Removes pollutants from runoff
 Decreases stormwater runoff volume, flow rate, and temperature
 Reduces directly connected impervious areas

Target Pollutants:

Total Suspended Solids
 Nitrogen
 Phosphorus
 Heavy Metals

Uses:

Well suited for linear projects
 Can replace traditional curb and gutter

Limitations:

May not be well suited for highly urban areas.
 Require relatively flat slopes
 Cannot treat a large drainage area
 Provide little pollutant removal if poorly designed

Resources:

Urban Drainage and Flood Control District; Vol 3, Grass Swales
 EPA NPDES Post-Construction Menu of Stormwater BMPs; Grassed Swales

