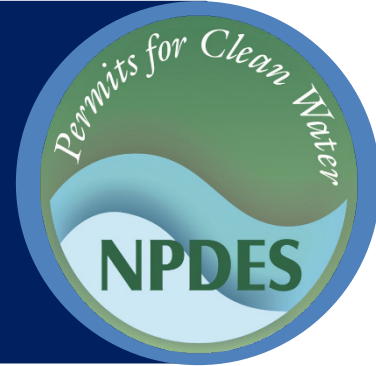




Stormwater Best Management Practice

Brush Barrier



Minimum Measure: Construction Site Stormwater Runoff Control
Subcategory: Sediment Control

Description

Brush barriers are coarse sediment and flow velocity control structures constructed of material such as small tree branches, root mats, stone or other debris left over from site clearing and grubbing. A filter cloth cover on a brush barrier can stabilize the structure and improve its efficiency.

Applicability

Brush barriers filter sediment in small drainage areas with a primary flow regime that is sheet flow. They also provide temporary on-site storage for sites that have large amounts of vegetation from clearing and grubbing activities.

Siting and Design Considerations

The drainage area for brush barriers should be no greater than one-quarter acre per 100 feet of barrier length (DOWL, 2015). In addition, the drainage slope leading down to a brush barrier should be no greater than 2:1. The barrier mound should be at least 2 feet high and 2 feet wide at its base and only installed parallel to slope contours. The material used to create the barrier may consist of site vegetation, composted mulch or wood-based mulch with a diameter smaller than 6 inches (WDE, 2014). Construction staff should not use material larger than 6 inches, as it may be too bulky and create voids where sediment and stormwater could flow through the barrier. They should bury the edge of the filter fabric that covers the barrier in a trench 4 inches deep and 4 inches wide on the uphill side of the barrier. This secures the fabric and blocks sediment while allowing stormwater to pass through the permeable filter fabric. Construction staff should extend the filter fabric just over the peak of the brush mound and fasten it on the downslope edge of the fabric using stakes, sandbags or another equally effective method (WDE, 2014).



A brush barrier at the perimeter of a construction site.
Credit: Hamilton County Soil & Water Conservation District

Limitations

Brush barriers are not appropriate for high-velocity areas, concentrated-flow areas or areas with significant slopes (WDE, 2014). Additionally, brush barriers have limited durability because their constituent materials decompose. A useful brush barrier involves a large amount of material; therefore, alternative sediment controls may be more appropriate for sites with little material available from clearing. Brush barriers provide temporary storage for large amounts of material cleared from a site, but construction staff should remove this material from the site after construction activities have ceased and the area is stable.

Maintenance Considerations

Construction staff should inspect brush barriers after each significant rainfall event to ensure their continued effectiveness. If channels form through voids or around the barrier, construction staff should rebuild the barrier to eliminate the channels. They should also remove accumulated sediment from the uphill side of the barrier when sediment height reaches between one-third and one-half the height of the barrier.

Effectiveness

Brush barriers effectively reduce off-site sediment transport, and the use of a fabric cover greatly increases their effectiveness. Construction staff should cover brush barriers with a filter fabric to hold the material in place and increase efficiency.

Cost Considerations

The cost of creating brush barriers can vary greatly depending on the equipment used, vegetation type (heavy or light), personnel, amount of filter fabric needed (if used) and number of hours needed to construct the barrier. If the right site conditions exist, they can be a low-cost erosion and sediment control practice.

Additional Information

Additional information on related practices and the Phase II MS4 program can be found at EPA's National Menu of Best Management Practices (BMPs) for Stormwater website

References

DOWL. (2015). *Erosion and sediment control best management practices manual*. Montana Department of Transportation.

Washington State Department of Ecology (WDE). (2014). *2012 stormwater management manual for western Washington as amended in December 2014* (Vol. II) (Publication Number 14-10-055).

Disclaimer

This fact sheet is intended to be used for informational purposes only. These examples and references are not intended to be comprehensive and do not preclude the use of other technically sound practices. State or local requirements may apply.