

Vegetated Filter Strips



Description: Vegetated filter strips, also known as filter strips, grass buffer strips and grass filters, are uniformly graded vegetated surfaces (i.e., grass or close-growing native vegetation) that receive runoff from adjacent impervious areas. Vegetated filter strips typically treat sheet flow or small concentrated flows that can be distributed along the width of the strip using a level spreader. Vegetated filter strips are designed to slow runoff velocities, trap sediment, and promote infiltration, thereby reducing runoff volumes.

Ability to meet specific standards

Standard	Description
2 - Peak Flow	Provides some peak flow attenuation but usually not enough to achieve compliance with Standard 2
3 - Recharge	No recharge credit
4 - TSS Removal	If greater than or equal to 25' and less than 50' wide, 10% TSS removal. If greater than or equal to 50' wide, 45% TSS removal.
5 - Higher Pollutant Loading	May be used as part of a pretreatment train if lined
6 - Discharges near or to Critical Areas	May be used as part of a pretreatment train if lined. May be used near cold-water fisheries.
7 - Redevelopment	Suitable for pretreatment or as a stand-alone practice if sufficient land is available.

Advantages/Benefits:

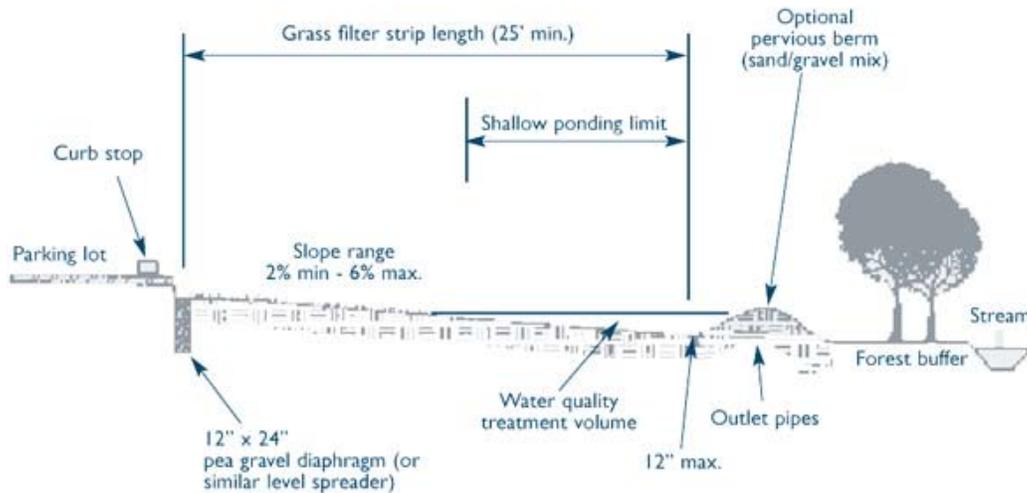
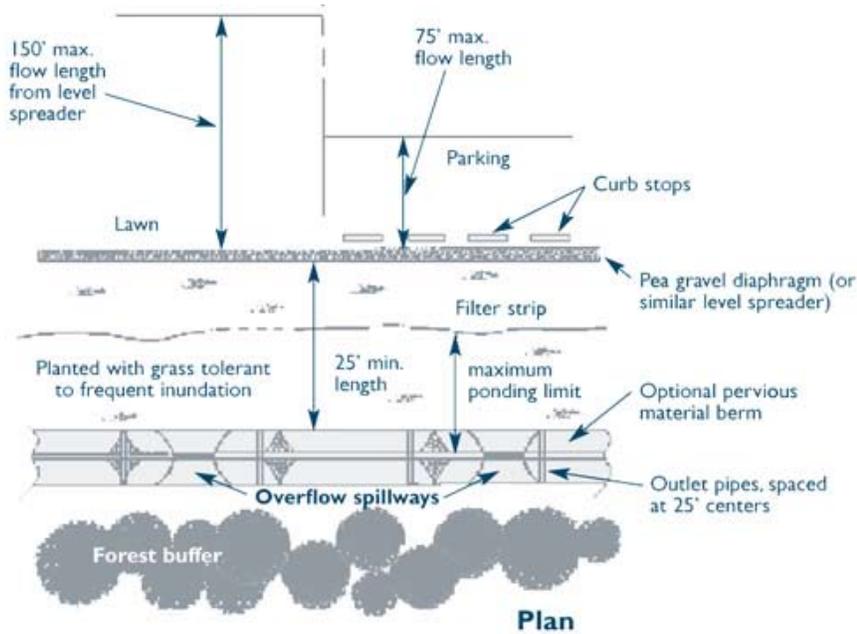
- Reduces runoff volumes and peak flows.
- Slows runoff velocities and removes sediment.
- Low maintenance requirements.
- Serves as an effective pretreatment for bioretention cells
- Can mimic natural hydrology
- Small filter strips may be used in certain urban settings.
- Ideal for residential settings and to treat runoff from small parking lots and roads.
- Can be used as part of runoff conveyance system in combination with other BMPs
- Little or no entrapment hazard for amphibians or other small creatures

Disadvantages/Limitations:

- Variability in removal efficiencies, depending on design
- Little or no treatment is provided if the filter strip is short-circuited by concentrated flows.
- Often a poor retrofit option due to large land requirements.
- Effective only on drainage areas with gentle slopes (less than 6 percent).
- Improper grading can greatly diminish pollutant removal.

Pollutant Removal Efficiencies

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|---|--------------------------|
| • TSS (if filter strip is 25 feet wide) | 10% assumed (Regulatory) |
| • TSS (if filter strip is 50 feet wide) | 45% assumed (Regulatory) |
| • Nutrients (Nitrogen, phosphorus) | Insufficient data |
| • Metals (copper, lead, zinc, cadmium) | Insufficient data |
| • Pathogens (coliform, e coli) | Insufficient data |



adapted from the "Design of Stormwater Systems" 1996

Maintenance

Activity	Frequency
Inspect the level spreader for sediment buildup and the vegetation for signs of erosion, bare spots, and overall health.	Every six months during the first year. Annually thereafter.
Regularly mow the grass.	As needed
Remove sediment from the toe of slope or level spreader and reseed bare spots.	As needed

Special Features

Include an impermeable liner and underdrain for discharges from Land Use with Higher Potential Pollutant Loads and for discharges within Zone IIs and Interim Wellhead Protection Areas; for discharges near or to other critical areas or in soils with rapid infiltration rates greater than 2.4 inches per hour.