

Vegetated Swales

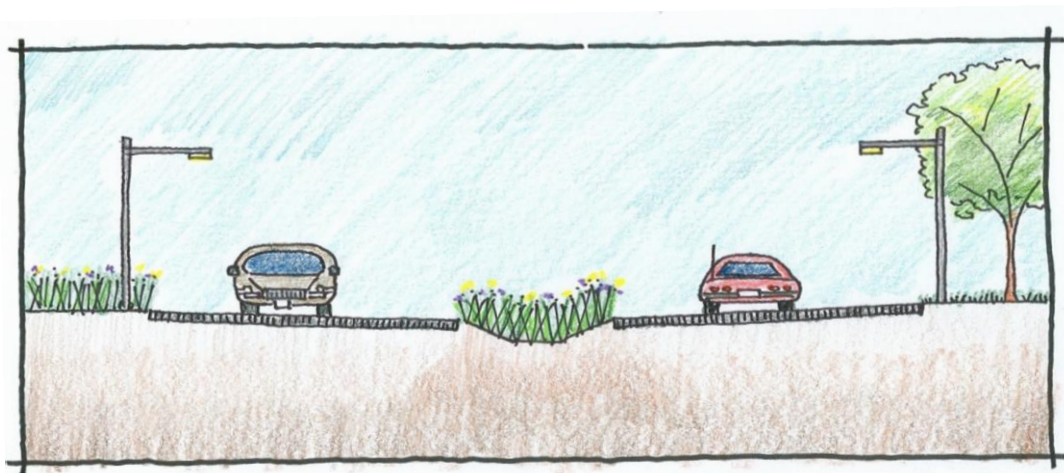
How do Vegetated Swales help manage stormwater?

The vegetated swale is a common stormwater treatment system. Vegetated swales are vegetated areas used to convey and treat stormwater runoff by acting as a buffer between impervious areas such as roads, parking lots, and driveways and storm sewer systems or streams. While a roadside ditch is technically a vegetated swale, these are typically referred to as “grassed swales”. The term vegetated swale most typically refers to swales that are densely vegetated. Vegetated swales function best when constructed on gentle slopes in order to keep the runoff speed low and maximize opportunities for the absorption of runoff and the filtering of pollutants.

Vegetated swales will improve the water quality of stormwater by slowing runoff speed, trapping sediment and other pollutants, and providing some absorption. The swales

will also reduce both the rate and volume of stormwater. Choosing to plant swales with native vegetation is more effective in managing runoff than if it was planted with short turf grass.

Vegetated swales remove suspended solids through settling and filtration. Dissolved pollutants such as nutrients and metals are removed and/or transformed as runoff infiltrates into the soil. Utilizing the Illinois Environmental Protection Agency’s Estimating Pollutant Load Reductions for Nonpoint Source Pollution Control Best Management Practices (BMPs) worksheets, the vegetated swale will remove approximately 20% of the total phosphorous, 65% of total suspended solids, and 50-71% of metals.



Where and how can Bioswales be located?

Scale Watershed/County Town/Village Neighborhood Lot

Applications

<input checked="" type="checkbox"/> Retrofit	<input checked="" type="checkbox"/> New	<input type="checkbox"/> Ongoing/Maintenance
<input checked="" type="checkbox"/> Preventative	<input checked="" type="checkbox"/> Remedial	<input checked="" type="checkbox"/> Driveways
<input checked="" type="checkbox"/> Parking lots	<input checked="" type="checkbox"/> Streets	<input type="checkbox"/> Sensitive Areas
<input checked="" type="checkbox"/> Roofs	<input checked="" type="checkbox"/> Lawns	

Effectiveness

<input checked="" type="checkbox"/> Runoff Rate Control	<input checked="" type="checkbox"/> Runoff Volume Control	<input type="checkbox"/> Habitat Preservation/Restoration
<input checked="" type="checkbox"/> Sediment Control	<input checked="" type="checkbox"/> Nutrient Control	<input checked="" type="checkbox"/> BOD/COD Control
<input checked="" type="checkbox"/> Other Pollutant Control		

Design Considerations

- ❖ Vegetated swales must be sized to convey design runoff rate.
- ❖ Filtration benefits can be improved by planting native-deep rooted vegetation.
- ❖ Topsoil should be amended with compost and/or sand as a means of improving organic content for filtering and to achieve adequate infiltration.

Additional Benefits of Vegetated Swales

Vegetated Swales provide more than just stormwater management. They also:

- ❖ Enhance the aesthetics of the local landscape
- ❖ Provide habitat for wildlife
- ❖ Can be used for snow storage during winter months

Maintenance

The maintenance requirements for vegetated swales are minimal. The swales just need to be inspected periodically to remove litter and blockages. Sparse areas should also be reseeded as necessary.



This Fact Sheet was prepared by the Winnebago County Highway Department using funding provided in part through the USEPA Section 319 of the Clean Water Act and administrated through Illinois Environmental Protection Agency.