

4.4 Grass Buffers, Swales, and Vegetative Filter Strips

Grass buffers and vegetative filter strips are common stormwater management measures that are typically composed of a strip of grass over a porous subsoil medium. They are often located next to roads or adjacent to waterways to prevent stormwater runoff from flowing directly into a water body. A swale is a long, vegetated depression often used to convey stormwater away from homes and critical infrastructure.

4.4.1 Functional Description

Grass buffers are typically grass over porous subsoil. They can be configured in different shapes and be used in different locations. Swales are similarly simple; however, they are often specifically shaped and graded to channel stormwater away from structures.

4.4.2 Inspection Requirements

Inspect vegetation twice annually. The standard procedure is to inspect at the beginning of the growing season (May) and then inspect again toward the end of the growing season (August/September). During these inspections, check for trash and sediment accumulation, observe the overall condition of vegetation, and monitor for the formation of any rills or gullies.

4.4.3 Maintenance

4.4.3.1 Routine Maintenance

Routine maintenance involves the removal of trash and debris and should be completed at least twice yearly.

While grasses are becoming established, mow only when required to deter weeds. After this initial period, mowing should be done as frequently as necessary to maintain healthy turf (refer to CSU Extension Recommendations for Mowing Manicured Turf).

Occasional aeration is required for buffers and swales with manicured grass. This allows the soil to be supplied with air and increases infiltration by allowing more water into the root zone. Aeration should not be done when the ground is frozen or when conditions are extremely hot and dry. Mark sprinkler heads and shallow utilities to prevent property damage.

Irrigation should be adjusted throughout the growing season, dependent on observed requirements of vegetation. Less irrigation is typically required in the early summer, with more needed in July, August, and September. If the facility in question is designed for native grasses and other drought tolerant species, it may not require irrigation after establishment. It is necessary to check for broken sprinkler heads and to drain any irrigation systems annually before winter.

Fertilizer use should be minimized to the extent possible; once vegetation is established, it may not be necessary.

Monitor for sediment build-up along swales and between buffers and the neighboring impervious areas. Remove sediment and replace vegetation as required. Monitor health of vegetation and reseed bare patches as needed. Waste sediment may be contaminated with various pollutants and must be disposed of properly.

4.4.3.2 Minor or Major Improvements

Revegetation may be required at the interface of the vegetation buffer and impervious area every 10 to 20 years. If erosion has damaged the grass buffer or swale, it should be regraded and revegetated. This can often be done simply with a shovel unless the damage is significant, which may require small heavy equipment.

Table 4-4. Grass Buffers, Swales, and Vegetative Strips: Common Indicators of Required Maintenance

Component	Hazard	Indicator	Solution
Grass and subsoil	Debris	Pile of trash mixed with sediment on top of the grass	Remove trash and sediment and dispose of properly.
	Undesired Vegetation	Large woody vegetation or undesired weeds	Weeding by hand may be sufficient. In cases where it is not, more frequent mowing may be required, or an herbicide might be necessary.
	Erosion	Bare patches of soil and or channeling of subsoil	Minor repair may involve simply shoveling the eroded subsoil back in and replanting. In extreme cases, the use of heavy equipment may be needed.