Sediment Control Practices	SMP 4.3.6 Filter Strips

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Symbol

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Description

Utilizing vegetation allows soil to be protected from erosion and velocity flow while reducing or preventing discharge of pollutants to the storm system or waterways. This method uses filter strips to accomplish the goal of filtering sediment needing to be settled out of runoff.

Application

- Filter strips should be used only to address potential water quality problems associated with overland (sheet) flow. They are not effective in removing sediment from concentrated flows unless those flows are dispersed on flat ground before discharge into the filter strip. Areas that need immediate cover (such as sodding and plugging) due to having turf prior to construction, areas subject to erosion (graded or cleared areas), and permanent vegetative areas
- Wetlands and/or sensitive water bodies
- Steep and unstable slopes
- Temporary or permanent buffer areas that include the floodway and 50 feet perpendicular to the floodway. If a floodway has not been determined then the buffer must be 25 feet perpendicular from each side of the stream bank, creek, or unnamed waterway under "bank-full conditions" (See EPP-04 Buffer Zones.)
- Area within the buffer must not be cleared. It should be surveyed, flagged and delineated by a colored temporary fence and these instructions explained to each employee on the site

Design

- Cultivate the area then install the irrigation system
- Areas should be excavated and backfilled (plant holes)
- Areas are to be fine graded and rolled prior to sodding
- Sodded areas are to be uniform and smooth (prior to sodding) and distributed with top soil were needed (to even out the area)

Design (cont'd)

Table SMP06-1. Vegetated Filter Strip Width Recommendations for Kentucky

Stream Type	Conditions	Minimum Buffer Width	General Considerations
Urban streams	> 25% imperviousness in drainage area	25 ft each bank	At least two-thirds of the buffer—nearest to the water—should be undisturbed native or natural vegetation. Remainder can be permanent managed vegetation. Avoid turf grass in managed area if possible; use native grasses, wildflower mixes. Mow annually or less.
Suburban streams	10% to 25% imperviousness in drainage area	50 ft each bank	
Rural streams	< 10% imperviousness in drainage area	≥ 60 ft each bank	
Large rivers	Rivers with floodplains > 500 ft wide	> 100 ft each bank	
Wetlands	For sloping sites, add more buffer	25 to 50 ft	
Sinkholes or other karst features	Will vary according to size and flow characteristics	25 to 50 ft radius	

- Sod end of adjacent strips should stagger by half the width or length
- Areas adjacent to sidewalks, concrete headers, header boards and other paved borders shall be 1.5 in-0.25 in below the top grade of the facilities
- Seed beds should be added to fertilizers and added to the correct site condition to slow the velocity of runoff and allow sedimentation to take place
- Roll sod to eliminate air pockets and allow a closer contact with the soil.
- Water sod so that the soil at a minimum depth of 4 feet is moistened
- Do not allow sod to dry out
- Sod should not be planted on slopes that are greater than 3:1 (H:V) if no mowing is to occur
- Vegetate sodded areas
- Do not use buffer strip for vehicular traffic
- All fertilization efforts should follow the outline of the state, county, and/or local government
- If vegetative filter strips are proposed as a sediment control device and they do not already exist, they must be planned and established before initiating general land-disturbing activities if possible.
- Minimum filter strip width should be 25 feet for urban streams, 50–75 feet for suburban and rural streams, and at least 100 feet for large rivers. Plans should show the location, width, and length of filter strips. The type of vegetation and specifications for soil preparation and seeding must be included. If existing vegetation is to be used, plans for protecting or improving it must be provided.
- The width of filter strips expected to treat runoff from long slopes should be at least one-fourth the length of the slope for slopes up to 20 percent and at least half the slope length for steeper areas.

Design (cont'd)

- When establishing new seeded areas, consideration must be given to aesthetics and wildlife needs and soil conditions on the site. Native grass and wildflower mixtures are attractive, commercially available, and can be seeded with standard equipment for the most part.

- It is easier and cheaper to protect and preserve existing areas than to establish new ones. Existing grass wildflower, or grass/legume areas to be used as filter strips should be flagged off as a buffer zone (see the Buffer Zone section). Equipment and vehicular traffic in these areas should be restricted to avoid damage to vegetation. Vegetation should be dense and well established with no bare spots.

- Seed species for native grass and wildflower mixes are available from county extension and NRCS offices. Specify quality seed mixtures selected on the basis of climate, soils, drainage, shading, and other factors. Note that taller grass mixtures might not be appropriate near residential areas because of security concerns regarding visibility.

- Specify planting of grasses and forbs at the same time. Seeding rates will vary by species, but should generally be specialized and low, unlike agricultural seeding rates. Consider a cover/nursery crop of annual or short-lived native species (e.g., rye) to protect the site until grasses and wildflowers emerge.

- Seed should be from current production, no more than one year old, and free of mold or insects and disease. Seed origin should be furnished and have characteristics similar to the site. Seed collected or grown in the region is usually best.

Table SMP06-2. Filter Strip Seeding Mixture and Site Suitability Chart

Seeding Mixture	Seeding Rate Lbs/Acre	Soil Suitability
1. Alfalfa	10	Well Drained
or Red Clover	10	
Plus		
Timothy	4	
or Orchardgrass	6	
or Bromegrass	6	
2. Ladino Clover	½	Wet or Well Drained
Plus		
Timothy	4	
or Orchardgrass	6	
or Bromegrass	8	
3. Tall Fescue	40	Wet or Well Drained
4. Reed Canarygrass	15	Wet
Plus		
Tall Fescue		

Design (cont'd)

Construction Specifications

When planting filter strips, prepare the seedbed, incorporate fertilizer (if necessary), and apply mulch consistent with the seeding sections of this manual. Filter strips using areas of existing vegetation must be overseeded, as necessary, with the above mixtures to obtain an equivalent density of vegetation. The over seeding must be accomplished before the land disturbing activity if no grading will occur in the area. See the Permanent Seeding section of this manual for further details. For areas to be seeded in native grass and wildflower mixes, use the following approach:

Vegetation removal before seeding—If undesirable vegetation exists on the site, kill with nonselective, nonresidual herbicide, a glyphosate without surfactant if possible. After evidence of kill (7–14 days) mow to 2 inches. Mow or rake off.

Avoid soil disturbance—Avoid deep tillage, which pulls up new weed seed to compromise plantings. Scarify soil no deeper than one-half inch, on the contour, to reduce weed and erosion problems. No-till planters are now available to plant into existing dead stubble. Avoid adding imported topsoils unless it is certified to be weed-free.

Soil amendments—Amendments should be limited because of cost concerns. Fertilizers assist weed growth. Native forbs and grasses, if matched to the site, should establish without fertilizers if moisture is available. Amendments, if used, should be monitored for potential runoff impacts. Addition of peat moss has not proven beneficial to these plantings over time. Addition of native mychorizae has proven beneficial.

Equipment—Follow the seed distributor's instructions for planting. Specialized drills, broadcasters, and hydroseeders are available. Choose carefully and experiment on small areas to determine the best approach. The bottom line is that the seed germinates only if it makes contact with the soil and moisture.

Follow-up—Cover the seed by harrowing, dragging, raking or cultipacking. Mulch with weed-free straw or hay or native grass straw. Use ECBs on long, steep slopes if mulch and netting will not suffice. Avoid irrigation unless experiencing periods of drought, when supplementary watering might be in order. A high (6–8 inches) mowing once or twice during the first season reduces weed competition.

Maintenance

- Inspect weekly after rainfall events until turf is established
- Mowing shall consist of "tall" mowing, weeding and the irrigation system is growing and operating properly
- Fertilize as needed and as indicated by soil testing
- Construction traffic must not be permitted to drive upon filter strips.
- Overseed, repair bare spots, or apply additional mulch as necessary
- Regular liter removal

Inspection

- ❑ Practice has been properly mowed and maintained.
- ❑ Construction vehicles have been kept off BMP.
- ❑ Dead areas have been re-seeded, plugged or re-sodding.
- ❑ Underwash turf has been maintained and compacted.