

## Filter Strip

### Virginia Conservation Practice Job Sheet

393



#### Definition

A strip or area of herbaceous vegetation that removes contaminants from overland flow.

#### Criteria

##### Filter Strip Layout

Locate filter strip immediately along downslope edge of the crop field, disturbed area, etc.

Ensure runoff entering filter strip is sheet flow; disperse concentrated flow before entry.

Place upslope or receiving edge of the filter strip on the contour to maximum extent possible.

The maximum gradient along the upslope or receiving edge of the filter strip shall not exceed the lesser of the following:

- a. One-half of slope steepness (in percent) of the contributing area uphill from filter strip. This slope is measured roughly perpendicular to the edge of the filter strip.
- b. 5%

The contributing area immediately uphill from the filter strip shall have a slope steepness of at least 1% (this slope is measured roughly perpendicular to the edge of the filter strip).

The filter strip shall have slope steepness equal to or less than the slope of the drainage area, but in no case shall slope within the filter strip exceed 5% (this slope is measured roughly perpendicular to the edge of the filter strip).

Filter strip must be at least 35 feet wide.

The filter strip will be designed to have a 10-year life span, following the procedure in the Agronomy Technical “Using RUSLE2 for the Design and Predicted Effectiveness of Vegetative Filter Strips (VFS) for Sediment”.

##### Filter Strip Vegetation

Grazing of the filter strip is not allowed.

State-listed noxious or invasive plants will not be established in the filter strip.

Filter strips shall not be used as a travel lane for equipment or livestock.

The filter strip shall be established to permanent herbaceous vegetation.

Select species that are able to withstand partial burial from sediment deposition and are tolerant of herbicides used on the area that contributes runoff to the filter strip.

Refer to Plant Establishment Guide (PEG) for the recommended planting rates, dates, depths.

Select species with stiff stems and a high stem density near the ground surface.

Ensure that selected species are suited to current site conditions and intended uses. Selected species will have the capacity to achieve adequate density and vigor within an appropriate period to stabilize the site..

Only use viable, high quality seed or stock.

Perform site preparation and seeding or planting at a time and in a manner that best ensures survival and growth of the selected species.

The minimum seeding and stem density shall be equivalent to a high quality grass hay seeding rate for the climate area or the predicted density of vegetation used to estimate trapping efficiency, whichever is the higher seeding rate.

**NOTE: This summary does not address all requirements and considerations in the VA Filter Strip Conservation Practice Standard (Code 393). Consult the Conservation Practice Standard for further details.**

General Information	
Client: _____	County: _____
Field Office: _____	Contract #: _____
Farm #: _____	Tract #: _____
Field # and acreage: _____	

Client’s Purpose(s) (check all that apply)
<input type="checkbox"/> Reduce suspended solids and associated contaminants in runoff
<input type="checkbox"/> Reduce dissolved contaminant loadings in runoff

**Practice Specifications**

**Follow all specifications and recommendations below for practice installation & implementation.**

**Layout & Design Criteria Required by Standard**

1. Locate filter strip along downslope edge of drainage or contributing area (crop field, feedlot, etc.).
2. Ensure runoff entering filter strip is uniform sheet flow; disperse concentrated flow prior to entry.
3. Place upslope edge of filter strip on contour to the maximum extent possible. See below for maximum gradient of receiving edge of filter strip based on Standard and site-specific conditions.
4. Contributing area must have slope steepness of at least 1% (see below for actual steepness).
5. Filter strip must have slope steepness equal to or less than steepness of contributing area, but in no case greater than 5% (see below for actual steepness).
6. Filter strip must be at least 35 feet wide at its narrowest point.
7. Filter strip must be designed for 10-year lifespan, following procedures in Tech Note “Using RUSLE2 for Design and Predicted Effectiveness of Vegetative Filter Strips (VFS) for Sediment). Use this Tech Note to help complete rows 4 through 13 below.

**Table 1: Site-specific Design Values (see above for guidance)**

	Strip 1	Strip 2	Strip 3
1. Max gradient along upslope edge of filter strip (%):			
2. Slope steepness of contributing area (%):			
3. Slope steepness of filter strip (%):			
4. Filter strip minimum width (feet) – also use as filter strip overland flow length:			
5. Filter strip area (acres):			
6. Contributing area overland flow length (feet):			
7. Contributing area (acres):			
8. Ratio of contributing area to filter strip area – derived from 6 and 7 above).			
9. Estimated sediment delivery to upslope edge of filter strip from RUSLE2 (ton/acre/year):			

10. Estimated sediment delivery to downslope edge of filter strip from RUSLE2 (ton/acre/year):			
11. Filter strip sediment trapping efficiency (%) – derived from 9 and 10 above.			
12. Estimated annual rate of sediment accumulation in filter strip, based on above values (inches/year):			
13. Estimated years required to accumulate 6 (six) inches of sediment in filter strip, based on above values (years):			

**Detailed Map or Sketch of Planned Filter Strip System – See Attached**

*Standard requires a map or sketch showing planned filter strip system. Show on the sketch design values 1 through 7 above.*

**Layout & Design Additional Specifications**

*Include recommendations for layout of filter strips including permanent row markers, etc. Refer to attachments as needed.*

**Specifications for Land Use and Management in Contributing Area**

*Describe acceptable management options for contributing area upslope from filter strip. Sediment and runoff from contributing area must not exceed design capacity of filter strip. Refer to attachments as needed.*

**General Criteria for Establishment and Maintenance of Filter Strip Vegetation**

1. Perform site preparation and seeding or planting at a time and in a manner that best ensures survival and growth of the selected species (see below for details).
2. Establish suitable permanent herbaceous vegetation on the filter strip (see below for details).
3. Only use viable, high quality and regionally adapted seed or planting stock.
4. State-listed noxious or invasive plants will not be established in the filter strip.
5. Filter strips shall not be used as a travel lane for equipment or livestock.
6. Grazing of the filter strip is not allowed.

**Site Prep / Pre-Planting Specifications**

*Provide site prep recommendations to ensure survival and growth of selected species, including: removal of unwanted materials; grading; topsoil stockpiling & spreading; soil testing & amendment with compost/lime/fertilizer, etc. Refer to attachments as needed.*

**Site-specific Specifications for Vegetation Establishment**

*Provide establishment recommendations to ensure survival and growth of selected species and desired filter strip function. Specify what constitutes successful establishment, e.g. minimum percent ground/canopy cover, stand density, etc. Base recommendations on Virginia Plant Establishment Guide and criteria in the VA-393 Standard. Refer to attachments as needed.*

<b>Filter Strip Plant Materials (species/cultivars)</b>	<b>Seeding Rate (lbs/acre of pure live seed)</b>	<b>Seeding Date</b>	<b>Seeding Method</b>	<b>Seeding Depth</b>
Strip 1:				
Strip 2:				
Strip 3:				

**Additional Recommendations for Establishment & Management of Filter Strip Vegetation**

## Operation & Maintenance (O&M)

Carry out all of the following actions to ensure that the planned filter strip system functions as intended after initial installation & implementation.

### Minimum O&M Requirements

1. For the purposes of filtering contaminants, permanent filter strip vegetative plantings shall be managed as appropriate to encourage dense growth, maintain an upright growth habit and remove nutrients and other contaminants that are contained in the plant tissue.
2. Control undesired weed species, especially state-listed noxious or invasive weeds.
3. If prescribed burning is used to manage the filter strip, an approved burn plan must be developed.
4. Inspect the filter strip after storm events and repair any gullies that have formed, remove unevenly deposited sediment accumulation that will disrupt sheet flow, reseed disturbed areas and take other measures to prevent concentrated flow through the filter strip.
5. Apply supplemental nutrients as needed to maintain the desired filter strip species and stand density.
6. Periodically re-grade and re-establish the filter strip area when sediment deposition at the filter strip-field interface jeopardizes its function. Reestablish vegetation in these regraded areas, if needed.
7. If vegetation is harvested from filter strip, ensure function of filter strip is not adversely affected.

### Additional O&M Recommendations

*Provide any additional practical guidance for actions to ensure the long-term effectiveness of practice.*

## Planner Certification

The Filter Strip practice planned in this job sheet fulfills minimum requirements of Virginia NRCS Conservation Practice Standard 393.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Title

\_\_\_\_\_  
Date

## Certification of Practice Completion

The Filter Strip practice planned in this job sheet has been completed and maintained according to Virginia NRCS specifications (indicate in Specifications any changes to planned activities and acreage).

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Title

\_\_\_\_\_  
Date

