



FILTER STRIPS

CONSERVATION RESERVE ENHANCEMENT PROGRAM CREP-CP21

Natural Resources Conservation Service (NRCS)

Oct. 2000



WHAT IS A FILTER STRIP?

A filter strip is a narrow band of grass or other permanent vegetation used to reduce sediment, nutrients, pesticides, and other contaminants. Filter strips are located on cropland or degraded pastures immediately adjacent and parallel to streams, lakes, ponds, ditches, sinkholes, wetlands, or groundwater recharge areas.

Filter strips intercept undesirable contaminants from runoff before they enter a waterbody. Filter strips slow the velocity of water, allowing the settling out of suspended soil particles, the infiltration of runoff and soluble pollutants, the adsorption of pollutants on soil and plant surfaces, and the uptake of soluble pollutants by plants. Filter strips also disrupt the wind erosion process and trap air borne sediments before they reach the waterbody. In addition filter strips provide valuable wildlife habitat including excellent winter cover, nest sites for ground nesting birds, nectar and pollen for pollinating insects and forage for grazing wild animals.

ELIGIBILITY

To be eligible for this practice with the Conservation Reserve Enhancement Program, (CREP), the land must be within the approved watershed, have a cropping history (two out of the last five years), and be needed to reduce the negative impacts on water quality. In addition, the area must be adjacent to a permanent water body such as a lake; or adjacent to a perennial or seasonal water course such as

a stream or river; or adjacent to a permanently or seasonally flooded wetland.

PLANTING

It is important to plant filter strips into a weed-free, firm seedbed.

Begin weed control efforts the summer before the planned spring planting. Use an herbicide or tillage to eliminate competing vegetation. If necessary for erosion control, seed a temporary cover of oats in late August. Oats will die with freezing temperatures. Again, eliminate competing vegetation at planting time with herbicides or with tillage.

When planting native plant seeds, plant during the period April 15th to June 15th. Use a no-till or conventional drill that is able to handle the *fluffy* grass seeds. Most warm-season grass seeds are *fluffy*, that is, the seeds contain multiple awns or beards that give them a fluffy appearance. These fluffy seeds stick together and do not easily flow in a grain drill. A special drill is required which agitates the seed in the seedbox. However, switchgrass seed may be planted with a regular grain drill. Plant the seed at a depth of 1/8 inch in a firm seedbed.

Apply lime and fertilizer according to needs determined by a soil test. Apply all herbicides according to labeled directions.

DESIGN CONSIDERATIONS

The filter strip will be designed to encourage water to flow in a thin sheet. When water is concentrated, it will need to be spread across the width of the filter strip. Another alternative is to direct the water flow through a small restored wetland (CREP-CP23) or constructed wetland (CREP-CP9). This wetland will temporarily store the runoff and filter pollutants.

The width of the filter strip depends upon several factors including the slope of the field, the soil type and the pollutants contained in the runoff. Refer to the NRCS Field Office Technical Guide for the required width for a specific field. **For the Conservation Reserve Enhancement Program, the average minimum width of a filter strip is 50 feet and the average maximum width is 150 feet unless greater widths are needed for water quality purposes.** See the attached design sheet for the width of your filter strips.

Filter strips will be established to suitable grasses and forbs (broadleaves) that are adapted to the soil conditions. Plants

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selected will generally have stiff, upright growth characteristics for slowing water flows and filtering pollutants. **For the Conservation Reserve Enhancement Program, it is recommended to plant only native grasses in the filter strip. However, introduced grasses may be planted at the landowner's request. For example, native grasses may be planted on the windward (south or west side of the waterbody or water course and introduced grasses on the leeward (north or east) side.** This allows a diversity of wildlife habitats adjacent to each other. See the attached design sheet for the seeding mixture for your filter strips.

OTHER MANAGEMENT CONSIDERATIONS

Do not use filter strips as a travel way, cropland headland or a lane for livestock or farm equipment. Knocking down the filter strip will impact its ability to slow the velocity of the water and provide wildlife habitat.

Limited use of the filter strip as a turnrow or crossing area is authorized during the primary nesting season only if this activity is conducted as part of the planting, cultivating, or harvesting of a crop in an adjoining field.

Noxious weeds and other undesirable plants, insects, and pests shall be controlled, including such maintenance as necessary to avoid detrimental effects to the surrounding land.

If the filter strips contains areas that were wetlands in the past, consider restoring these areas to a wetland using the CREP-23 Wetland Restoration practice. To develop shallow water areas for wildlife, consider installing the CREP-CP9 Shallow Water Areas for Wildlife practice.

OPERATION AND MAINTENANCE

The filter strip cannot be harvested for hay or grazed by domestic livestock for the life of the CRP contract.

Mowing may be needed to stimulate plant growth, maintain an upright growth habit and control undesirable plant species. Mow cool season grasses to a height of 4 inches or greater and warm season grasses to a height of 10 inches or greater. Mow between Aug. 1 and Aug. 20th to reduce detrimental impacts upon ground nesting wildlife species.

Filter strips are designed to fill with sediment! To function properly, the filter area must get contaminated with sediment and other pollutants. To maintain the function and value of filter strips:

1. Shallow sheet flow across the filter must be encouraged. Any channels or rills must be immediately repaired.
2. Terraces, dikes, berms, trenches, or vegetative barriers can be used to treat concentrated flow areas.
3. Sediment, within the filter, should be removed before it accumulates to a height higher than 6 inches. Level and re-establish sheet flow. Re-seed if necessary.
4. If bacteria or other pathogens are being removed by the filter strip, a close mowed sod is desirable to allow sunlight and air movement to desiccate the entrapped pathogens.
5. Weeds, particularly noxious weeds, must be controlled in the filter area.

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FILTER STRIP DESIGN WORKSHEET CP-21

Farm: _____ Field: _____ Tract: _____ Date: _____

REQUIREMENTS

Before planting:

_____ Shaping
 _____ Wetland\Detention Basin
 _____ Lime

_____ Fertilizer
 _____ Weed-free Seedbed
 _____ Firm Seedbed

Native plant mixtures:

Big blue stem @ 2 lbs/acre (pls)
 Indiangrass @ 2 lbs/acre (pls)
 Little blue stem @ 2 lbs/acre (pls)
 Wildflower mixture @ 0.5 lbs/acre
 OR
 Switchgrass @ 5lbs/ acre (pls)

Introduced plant mixtures

Timothy @ 2.5 lbs/acre
 Orchardgrass @ 2.5 lbs/acre
 Red clover @ 3 lbs/acre
 Alfalfa @ 3 lbs/acre

Or Wet Soils

Orchardgrass @ 2.5 lbs/acre
 Redtop @ 1 lb/acre
 Alsike clover @ 3 lbs/acre
 White Dutch Clover A 3 lbs/acre

Design Considerations:

Soil Type(s) _____
 Average Slope _____

Width of Filter Strip(s)

Average width #1 _____ Average width #2 _____ Average width #3 _____

Length of Filter Strip(s)

Length #1 _____ Length #2 _____ Length #3 _____

Area of Filter Strip(s)

Area #1 _____ Area #2 _____ Area #3 _____

Planting Method



LOCATION AND LAYOUT SKETCH

TYPICAL PROFILE

MAINTENANCE REQUIREMENTS:

Mow between Aug. 1st and Aug. 20th; Control noxious weeds; Inspect after major storm events and repair damages; Do not harvest for hay or pasture; Do not use the filter strip for a lane.