



**NATURAL RESOURCES CONSERVATION SERVICE  
CONSERVATION PRACTICE STANDARD**

**CROSS WIND TRAP STRIPS**

**CODE 589C  
(AC.)**

**DEFINITION**

Herbaceous cover established in one or more strips typically perpendicular to the most erosive wind events.

**PURPOSE**

This practice is applied to support one or more of the following:

- Reduce soil erosion from wind and wind-borne sediment deposition.
- Induce snow deposition to improve soil moisture management.
- Improve plant health by protecting the growing crops from damage by wind-borne soil particles.
- Improve air quality by reducing the generation of airborne particulate matter.

**CONDITIONS WHERE PRACTICE APPLIES**

This practice applies to cropland or other land susceptible to wind erosion.

**CRITERIA**

**General Criteria Applicable to All Purposes**

**Orientation and Width of Trap Strips**

The appropriate orientation and width of the trap strips shall be determined using current NRCS approved wind erosion prediction technology. The minimum width shall be:

- At least 15 feet when vegetation or stubble in the strip will normally be one foot or more in height during periods when wind erosion is expected to occur. The effective width of strips shall be measured along the prevailing wind direction during those periods when wind erosion is expected to occur.
- The effective width of strips shall be measured along the prevailing wind direction during those periods when wind erosion is expected to occur. A width of at least 25 feet is required when the effective height of the vegetation or stubble in the strip will normally be less than one foot during periods when wind erosion is expected to occur.

**Vegetative Cover**

Trap strips may consist of perennial or annual plants, growing or dead, that meet the following criteria:

- Adapted to site conditions.
- Erect during critical wind erosion periods.
- Living vegetation is tolerant to sediment deposition.
- Tolerant to accumulated snow deposition in places where significant snow deposition is expected.

Refer to the USDA – NRCS Wisconsin Agronomy Technical Note 5, “Establishing and Maintaining Native Grasses, Forbs and Legumes” (TN-5), USDA – NRCS Wisconsin Agronomy Technical Note 6 “Establishing and Maintaining Introduced Grasses and Legumes” (TN-6) and Wisconsin Agronomy Technical Note 7, “Cover and Green Manure Crops Benefits to Soil Quality” (TN-7), and to the USDA – NRCS Wisconsin Biology Technical Note 8, “Pollinator Biology and Habitat” (TN-8) regarding vegetation establishment and species selection for use in trap strip systems.

### **Additional Criteria to Reduce Soil Erosion from Wind and Wind-Borne Sediment Deposition and Improve Air Quality by Reducing the Generation of Airborne Particulate Matter**

#### Location of Trap Strips

Trap strips established for these purposes shall be located as follows:

- At the windward edge of fields; or
- Immediately upwind from areas to be protected from erosion or deposition; or
- In recurring patterns interspersed between erosion-susceptible strips.

#### Direction and Width of Erosion-Susceptible Crop Strips

The effective width of the cropped strips shall be measured along the prevailing wind direction during those periods when wind erosion is expected to occur.

The width of cropped strips shall be determined using current NRCS approved wind erosion prediction technology. Calculations shall account for the effects of other practices in the conservation management system. Soil loss rates shall meet the planned soil loss objective.

### **Additional Criteria to Induce Snow Deposition and Soil Moisture Management**

#### Location of Trap Strips

Trap strips shall be established immediately upwind from areas to where snow will accumulate.

#### Direction, Minimum Height and Interval Width of Trap Strips

Trap strips shall be placed as perpendicular to the snow-bearing winds as possible. The minimum height of the vegetation shall be three feet. The distance between strips (interval) shall be no more than 20H (20 times the height of the vegetation in the winter months) across the area to receive the snow.

### **Additional Criteria to Improve Plant Health by Protecting Growing Crops from Damage by Wind-borne Soil Particles**

#### Location of Trap Strips

Trap strips shall be established immediately upwind from areas used for sensitive crops. There shall be no potentially erodible area located between the trap strip and the crop to be protected.

#### Direction and Width of Sensitive Crop Strips

The width of the crop strips shall be determined using current NRCS approved wind erosion prediction technology to estimate wind erosion during specific crop stage periods.

The effective width shall not exceed the width permitted by the crop tolerance to the maximum wind erosion the crop plants can tolerate without significant damage due to abrasion, burial, or desiccation as specified in the NRCS National Agronomy Manual. Other accepted technical references or planned crop protection objectives or alternatives for the period needed for the crop protection may be utilized.

## **CONSIDERATIONS**

Consider trap strip designs to provide cover or travel corridors for wildlife.

Consider vegetation that provides food or cover for wildlife species in the area.

Consider adding forbs and legumes for pollinators and for other beneficial insects. Utilize a diverse mix of plant species that bloom at different times throughout the year. Refer to the USDA – NRCS Wisconsin TN-5, TN-6, TN-7 and TN-8 regarding vegetation establishment and species selection for wildlife food and habitat.

Consider mowing or other mechanical disturbance of vegetation outside of the primary nesting season for ground-nesting birds.

Consider trap strip designs that result in multiple structural levels of vegetation within the strip to maximize wildlife use.

The effectiveness of cross wind trap strips is maximized when strips are oriented as close to perpendicular to the most erosive wind events for the period for which the system is designed.

Selection of plants for use in trap strips should favor species or varieties tolerant to herbicides used on adjacent crops or other land uses.

Consider the use of other WI NRCS Conservation Practice Standards such as residue management practices (329 or 345); Herbaceous Wind Barriers (603); Strip Cropping (585); or Windbreak/Shelterbelt Establishment (380) with trap strips to maximize snow distribution, enhance wildlife cover and improve the trapping capability of strips.

## **PLANS AND SPECIFICATIONS**

Specifications for establishment and maintenance of this practice shall be prepared for each field or treatment unit according to the Criteria, Operation and Maintenance described in this standard to meet the planned purpose(s).

The following are the minimum specifications to include:

- Purpose(s) of the trap strips.
- Location and orientation of trap strips.
- Width of the trap strip(s).
- Width of the crop interval or distance between trap strips.
- Seedbed preparation, timing, and seeding method.
- Liming and fertilizer applications, where applicable shall include form, rates, timing and method of application of soil amendments
- Species selected and seeding rates based on pure live seeds.
- Height of vegetation to be maintained during the critical crop stage periods.
- Time of mowing and/or harvests, where applicable.

Specifications shall be recorded using Wisconsin NRCS Job Sheet 589C Cross Wind Trap Strips or other documents that include all plans and specification requirements in this section.

## **OPERATION AND MAINTENANCE**

After establishment, perennial trap strips shall be fertilized as needed to maintain plant vigor.

Noxious weeds shall be controlled.

Mowing or grazing of trap strips shall be managed to allow re-growth to the planned height before periods when wind erosion or crop damage is expected to occur.

When feasible, schedule harvest, mowing or other mechanical disturbance of vegetation outside of the primary nesting season for ground-nesting birds.

Wind-borne sediment accumulated in trap strips shall be removed and distributed over the surface of the field as determined appropriate and trap strips shall be re-established if necessary.

Trap strips shall be re-established or relocated as needed to maintain plant density, width, and height.

Periodically evaluate the trap strip effectiveness to meet the planned purpose(s).

## **FEDERAL, TRIBAL, STATE, AND LOCAL LAWS**

Users of this standard should be aware of potentially applicable federal, tribal, state and local laws, rules, regulations or permit requirements. This standard does not contain the text of federal, tribal, state, or local laws.

## **REFERENCE**

USDA, Natural Resources Conservation Service, National Agronomy Manual, 4th Edition, Feb. 2011. Website: <http://directives.sc.egov.usda.gov/> Under Manuals and Title 190.

USDA – NRCS Wisconsin Agronomy Technical Note 7, “Cover and Green Manure Crops Benefits to Soil Quality”

USDA – NRCS Wisconsin Biology Technical Note 8 “Pollinator Biology and Habitat”

USDA – NRCS Wisconsin Agronomy Technical Note 5 Establishing and Maintaining Native Grasses, Forbs and Legumes

USDA – NRCS Wisconsin Agronomy Technical Note 6 Establishing and Maintaining Introduced Grasses and Legumes

USDA-NRCS Wisconsin Electronic Field Office Technical Guide (eFOTG), Section IV, Practice Standards and Specifications

USDA-NRCS Wisconsin Job Sheet 589C Cross Wind Trap Strips

Wind Erosion Prediction System (WEPS) website: <http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/technical/tools/weps/>

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