NATURAL RESOURCES CONSERVATION SERVICE

CONSERVATION PRACTICE STANDARD

CROSS WIND TRAP STRIPS

(Ac.)

CODE 589C

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.
- At least 25 feet 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. The effective width of strips shall be measured along the prevailing wind direction during those 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 were significant snow deposition is expected.

Refer to locally adopted NRCS technical references for criteria for species selection and establishment of herbaceous vegetation that will be utilized for trap strips.

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 rate will 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. 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 wind erosion (the maximum rate of soil blowing that crop plants can tolerate without significant damage due to abrasion, burial, or desiccation) as specified in the NRCS National Agronomy Manual or other accepted technical references or planned crop protection objective for the period needed for the crop protection.

CONSIDERATIONS

Wildlife may use trap strips as cover or travel corridors. When planning vegetation, consider vegetation that provides food or cover for wildlife species in the areas. Consider adding forbs and legumes for pollinators, native bees and for other beneficial insects. Utilize a diverse mix of plant species that bloom at different times throughout the year. Refer to your state's official technical references on vegetation establishment and species selection for wildlife food and habitat.

When trap strips are designed to enhance wildlife habitat, plant species diversity within the trap strip should be encouraged. Trap strips that result in multiple structural levels of vegetation within the strip will 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.

Some plants are damaged by blowing wind as well as by wind-borne sediment. In such cases, the spacing between trap strips may have to be reduced from that obtained using wind erosion prediction technology.

Drifting snow or grazing by wildlife may reduce the trapping capability of trap strips. In such cases, other conservation practices, including the residue management practices (329 or 345); Herbaceous Wind Barriers (603); Stripcropping (585); or Windbreak/Shelterbelt Establishment (380), may be used with, or as alternatives to, trap strips to achieve the conservation objective.

PLANS AND SPECIFICATIONS

Specifications for establishment and maintenance of this practice shall be prepared for each field or treatment unit according to the Criteria, Considerations, and 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.
- Nutrient application, if needed for establishment, to include form, rates, timing and method of application.
- Vegetative mix and seeding rate(s).
- Height of vegetation to be maintained during the critical crop stage periods.
- Time of mowing and/or harvests.

Specifications shall be recorded using the approved Implementation Requirements document.

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 strip reestablished 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) and adapt management as needed.

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.

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