

NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD
WINDBREAK/SHELTERBELT RENOVATION

(Ft.)

CODE 650

DEFINITION

Replacing, releasing and/or removing selected trees and shrubs or rows within an existing windbreak or shelterbelt, adding rows to the windbreak or shelterbelt or removing selected tree and shrub branches.

PURPOSE

Restoring or enhancing the original planned function of existing windbreaks or shelterbelts.

CONDITIONS WHERE PRACTICE APPLIES

In any windbreak or shelterbelt that is no longer functioning properly for the intended purpose. Extending the length of an existing windbreak is handled under Windbreak/Shelterbelt Establishment, 380. For normal and periodic pruning, refer to Tree/Shrub Pruning, 660.

CRITERIA

The following activities may be used individually or in combination to restore or enhance a windbreak:

- Thin trees or shrubs to reduce plant competition or alter the density of the planting.
- Prune or shear the trees or shrubs to remove diseased branches or alter the density of the planting.
- Remove entire or partial rows of trees or shrubs to release adjacent rows.
- Competing herbaceous vegetation will be controlled mechanically (or chemically, if necessary) to improve the growth and vigor of trees and shrubs.

- Add rows of trees or shrubs adjacent to or within an existing windbreak or shelterbelt to improve windbreak or shelterbelt function or density (extending the length of an existing windbreak is handled under Windbreak/Shelterbelt Establishment, 380).

If additional plants are added, they will be adapted to the climatic region and the soil resource.

The existing growing space, shade level and root competition will be evaluated and determined to be at acceptable levels to permit unimpeded growth to new plantings.

Residual plants will be protected during the renovation.

CONSIDERATIONS

Refer to Windbreak/Shelterbelt Establishment Standard (380) and Specification for information on the main considerations and purposes of windbreaks.

Renovation may be accomplished over a period of years.

Debris should be removed from the site and disposed properly if the debris will cause insect, disease, fire or operability problems.

Vegetation removed during renovation can be burned as specified by Prescribed Burning practice (338).

Erosion control may be needed during the renovation process.

Wildlife and pollinator needs should be considered when selecting tree or shrub species to add or remove.

Species diversity, including use of native species, should be considered. Native species

Conservation practice standards are reviewed periodically and updated if needed. To obtain the current version of this standard, contact your Natural Resources Conservation Service [State Office](#) or visit the [Field Office Technical Guide](#).

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are often better suited to the site and conditions, and often require less supplemental water.

Increasing species diversity could reduce impacts from existing and new diseases and pests.

Protect plantings from adverse impacts from pests, wildlife, livestock damage or fire.

Refer to Tree & Shrub Establishment (612) for further guidance on planting trees and shrubs.

Debris and other vegetation removed during renovation may be used to produce energy.

PLANNING CONSIDERATIONS

A general field examination should be done prior to designing a renovation system for an existing windbreak. Field investigations help determine if normal maintenance is sufficient to maintain healthy plant vigor, such as removal of competition from grass, insect and disease control and maintaining adequate supplemental water.

PLANS AND SPECIFICATIONS

Specifications for applying this practice will be prepared for each site and recorded using approved specification sheets, job sheets, technical notes, and narrative statements in the conservation plan or other acceptable documentation.

OPERATION AND MAINTENANCE

The following actions will be carried out to ensure that this practice functions as intended throughout its expected life. These actions include normal repetitive activities in the application and use of the practice (operation), and repair and upkeep of the practice (maintenance):

- Supplemental water as needed.
- Additional thinning or pruning may be needed in the future to maintain function.
- Periodic applications of nutrients may be needed to maintain plant vigor.

REFERENCES

Bentrup, G. 2008. Conservation buffers: design guidelines for buffers, corridors, and greenways. Gen. Tech. Rep. SRS-109. Asheville, NC: Department of Agriculture, Forest Service, Southern Research Station. http://nac.unl.edu/buffers/docs/conservation_buffers.pdf

Brandle, J.R. et al. 1988. Windbreak Technology. Agric. Ecosyst. Environ. Vol. 22-23. Elsevier Pub..

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