

**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**

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.

Trees or shrubs with coppicing (sprouting) capability shall be cut close to the ground to improve density and/or vigor of trees or shrubs in decline

Competing herbaceous vegetation will be mechanically or chemically controlled 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 density.

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.

Comply with applicable federal, state and local laws and regulations during the planning, application, operation, and maintenance of this practice.

On forestland, the Forest Practice Rules (FPR) operational standards must be used, on range and croplands, the FPRs are guidelines for resource protection.

**CONSIDERATIONS**

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 disposed of using methods specified by Woody Residue Treatment (384) Practice Standard.

Debris and other vegetation removed during renovation may be used to produce energy. Consider the energy balance of this action.

Due to size and weight of the old trees, other resources may be affected and the operation is similar to a logging operation. The FPR provide guidance for resource protection (roads, dust, watercourses, etc.). Erosion control may be needed during the renovation process.

Consider shade tolerance when selecting species for replanting within or adjacent to an existing windbreak or shelterbelt.

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.

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

Consider slower growing, longer lasting, tree or native species as replacements in the renovation. Where space and logistics work add rows or interplant slow growing natives such as oaks 2-5 year prior to overstory removal.

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

### **PLANS AND SPECIFICATIONS**

Specifications for applying this practice shall 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 shall 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):

- Additional thinning, pruning or coppice management may be needed in the future to maintain function.
- Periodic applications of nutrients may be needed to maintain plant vigor.
- Provide supplemental water as needed.
- Control competing vegetation until it no longer inhibits the renewed growth and vigor of the windbreak/shelterbelt
- Replace dead trees/shrubs until barrier's function is restored.
- Thin or prune the windbreak/shelterbelt to maintain its function.
- Inspect trees and shrubs periodically and protect from adverse impacts including insects, diseases or competing vegetation.
- Protect trees from fire and damage from livestock and wildlife.

### **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.
- Brandle, J.R. et al. 1988. Windbreak Technology. Agric. Ecosyst. Environ. Vol. 22-23. Elsevier Pub..
- Stange, C., et al. 1998. Windbreak Renovation. University of Nebraska Cooperative Extension EC 98-1777-X.