NATURAL RESOURCES CONSERVATION SERVICE
MONTANA CONSERVATION PRACTICE STANDARD

WINDBREAK/SHELTERBELT RENOVATION (FEET)

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 **or size** of an existing windbreak is handled under **Field Office Technical Guide (FOTG), Section IV, practice** Windbreak/ Shelterbelt Establishment **(Code** 380**)**. For normal and periodic pruning, refer to **practice** Tree/Shrub Pruning **(Code** 660**)**.

This may occur due to using short-lived species, competing vegetation, over-crowding, insect and disease, herbicide damage, and/or drought.

CRITERIA

Evaluate the windbreak/shelterbelt to determine why it is not functioning as intended.

The following techniques will be used individually or in combination to restore or enhance the performance of a functioning or non-functioning windbreak or shelterbelt:

- 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 **and damaged** 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 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.

CONSIDERATIONS

Consider the current condition of the plants and their ability to respond to improved growing conditions. Some short-lived species are generally not worth renovation depending on their age and condition (i.e., Siberian elm, sand and Nanking cherry).

Renovation may be accomplished over a period of years.

NRCS, MT
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Conservation practice standards are reviewed periodically and updated if needed. To obtain the current version of this standard contact the Natural Resources Conservation Service.

NOTE: This type of font **(AaBbCcDdEe 123..)** indicates NRCS National Standards.
This type of font (AaBbCcDdEe 123..) indicates Montana Supplement.

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

American elm trees should be burned or de-barked to prevent creating habitat for the insect that spreads Dutch elm disease.

Vegetation removed during renovation can be burned as specified by **FOTG, Section IV,** practice Prescribed Burning (**Code** 338).

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

Consider the use of mechanical chipper or mulcher for effective disposal of branches/limbs and creating a usable mulch product.

Erosion control may be needed during the renovation process.

Refer to **FOTG, Section IV, practice** Tree/Shrub Establishment (**Code** 612) for further guidance on planting trees and shrubs.

Consider allowing enough space for plants to grow and for cultivation equipment.

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

Consider the longevity and desirability of the species involved.

Avoid plants that may be alternate hosts to undesirable pests.

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 leaving some snags, down logs and brush piles for wildlife.

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.

As a minimum, the Windbreak/Shelterbelt Renovation practice will have the following components in its plan and specifications:

- **A narrative that describes the producer's goals and objectives. Identify why the practice is needed and feasible.**
- **Environmental assessment of the planned practice that includes the potential impacts on soil, water, animals, plants, air and humans.**
- **Alternatives narrative that identifies and describes several methods that could be used to address the resource issue. Also identifying the producer-selected method.**
- **Field Office Technical Guide (FOTG), Section IV, Montana Windbreak/Shelterbelt Renovation practice job sheet and specification.**
- **Plan map and soil map of site with location of practice on the map.**
- **Operations and maintenance instructions.**

OPERATION AND MAINTENANCE

Windbreak/shelterbelt renovation is part of windbreak/shelterbelt maintenance program.

The following actions shall be carried out to insure 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):

- **Replacement of dead trees or shrubs in new plantings or rows will be continued until the barrier's function is restored.**
- **Competitive vegetation will be controlled when it inhibits the renewed growth and vigor of the windbreak or shelterbelt. It shall be controlled for the life of the practice.**
- **Supplemental water will be provided as needed.**

- **The trees and shrubs will be inspected periodically and protected from adverse impacts including insects, diseases or competing vegetation. The trees or shrubs will also be protected from fire and damage from livestock or wildlife.**

- 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.

- **Livestock and wildlife populations shall be controlled or excluded as necessary to achieve and maintain the intended purpose. Refer to FOTG, Section IV, Practice Standard and Specifications, Fence (Code 382) for guidance.**

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.