NATURAL RESOURCES CONSERVATION SERVICE

CONSERVATION PRACTICE STANDARD

HEDGEROW PLANTING

(Ft.)

CODE 422

DEFINITION

Establishment of dense vegetation in a linear design to achieve a natural resource conservation purpose.

PURPOSE

Providing at least one of the following conservation functions:

- Habitat, including food, cover, and corridors for terrestrial wildlife.
- To enhance pollen, nectar, and nesting habitat for pollinators.
- Food, cover, and shade for aquatic organisms that live in adjacent streams or watercourses.
- To provide substrate for predaceous and beneficial invertebrates as a component of integrated pest management.
- To intercept airborne particulate matter.
- To reduce chemical drift and odor movement.
- Screens and barriers to noise and dust
- To increase carbon storage in biomass and soils.
- Living fences
- Boundary delineation and contour guidelines

CONDITIONS WHERE PRACTICE APPLIES:

This practice applies wherever it will accomplish at least one of the purposes stated above.

CRITERIA

General Criteria Applicable to All Purposes

Hedgerows shall be established using woody plants or perennial bunch grasses producing erect stems attaining average heights of at least 3 feet persisting over winter.

Plants selected must be suited and adapted to soil and site conditions, climate, and conservation purpose.

No plant listed by the state as a noxious weed shall be established in a hedgerow.

Species shall be selected that do not host pests or diseases that could pose a risk to nearby crops.

The practice shall be protected from livestock grazing and trampling to the extent necessary to ensure that it will perform the intended purpose(s).

Competing vegetation shall be controlled until the hedgerow becomes established. Control shall continue beyond the establishment period, if necessary.

All planned work shall comply with federal, state and local laws and regulations.

No minimum width beyond a single row is required except where wildlife food and cover is an objective.

Additional Criteria for Wildlife Food, Cover and Corridors

Establish at least two compatible species of native vegetation. Multiple species increase food and habitat diversity while reducing pest and disease risk.

Selected plants shall provide cover and/or food to support the landowner's wildlife objectives.

Minimum hedgerow width, at maturity, shall be 15 feet. This may necessitate the

establishment of more than one row of plants.

Additional Criteria for Pollinator Habitat

Hedgerow plants must provide abundant pollen and nectar resources.

Multiple species with different blooming periods (early spring through late summer) shall be included in the planting. The actual number of species is dependent upon the availability of adjacent flowering plants. Plants that bloom during the same period as adjacent insect-pollinated crops can be excluded.

Pollinator hedgerows will be protected from pesticides that may harm pollinators. If pest control is required, only non-blooming plants will be treated, and/or only pesticides non-toxic to pollinators shall be used.

Additional Criteria for Living Fences

Selected plants shall attain a size and density adequate to create a barrier to contain livestock or humans, as needed.

If the purpose is to contain livestock, selected plants shall not be poisonous or hazardous to the animals.

Additional Criteria for Boundary Delineation

Hedgerows shall be aligned along boundaries of fields, or forestlands to differentiate land management units.

Additional Criteria for Contour Guidelines

Hedgerows shall be aligned so they provide permanent contour markers supporting implementation of Contour Farming (330) or Stripcropping (585). Refer to those conservation practice standards for alignment criteria.

Additional Criteria for Screens and Noise Barriers

Screening hedgerows provide privacy, hide unsightly areas from view or reduce noise.

Hedgerows shall be located where they most completely obstruct a line of sight or offensive sound.

Selected plants shall attain a height and fullness sufficient to break the line of sight or baffle sound.

Additional Criteria for Improvement of Landscape Appearance

The hedgerow design shall meet the aesthetic objectives of the landowner.

Plants shall be selected based upon the landowner's preferences for color, texture and growth habit.

Additional Criteria for Reducing Particulate Matter Movement

The hedgerow will be oriented as close to perpendicular to the prevailing wind direction as possible.

Hedgerow density on the upwind side shall be at least 50% at maturity.

Hedgerow density adjacent to the particulate source shall be at least 65% at maturity.

Additional Criteria to Reduce Odor Movement and/or Chemical Drift

Orientation of the hedgerow shall be as close to perpendicular to the prevailing wind direction during the period of concern as possible, and between the source of the odor or chemical drift and the sensitive areas.

Hedgerows shall be located upwind of the odor producing area and the chemical application area.

Tree and shrub species used shall have foliar and structural characteristics that optimize interception, adsorption and absorption of airborne chemicals or odors. Plant species shall be selected that are tolerant of anticipated chemical use.

CONSIDERATIONS

General

Planting a hedgerow larger than the required length and minimum width will increase the amount of carbon stored in the soil and biomass. Larger and more diverse hedgerows will generally enhance most other resource values.

Hedgerows should be planned in combination with other practices to develop holistic conservation systems that enhance landscape aesthetics, reduce soil erosion, improve sediment trapping, improve water quality and provide wildlife habitat.

Hedgerows following land contours create meandering lines on the landscape, produce a

natural appearance and increase the availability of “edge” wildlife habitats.

Hedgerows containing a mixture of native shrubs and small trees provide greatest environmental benefits.

Use of bareroot and containerized seedlings will accelerate hedgerow development.

Consider the amount of shading a hedgerow will provide at maturity. Shading may impact growth of adjacent plants, microclimate and aesthetics.

Limiting renovation events to one-third of a hedgerow’s length or width will prevent sudden elimination of the practice’s wildlife habitat function.

Periodic root pruning can reduce nutrient and water robbing from adjacent cropland.

Consider avoiding the use of plants that spread by root suckers as hedgerow may expand beyond the desired treatment area.

Wildlife Food, Cover and Corridors

Hedgerows can provide travel lanes, or corridors that allow wildlife to move safely across a landscape.

Generally, wider corridors accommodate more wildlife use.

Linking fragmented habitats may increase wildlife use of an area.

In grassland ecosystems, hedgerows may adversely affect area-sensitive nesting birds by fragmenting habitat patches and increasing the risk of predation.

Hedgerows can complement the availability of naturally occurring wildlife foods.

Hedgerows can provide wildlife with cover for feeding, loafing, nesting and caring for young.

Dense or thorny shrub thickets provide songbirds with important nesting sites and a refuge to escape predators.

Establishment of evergreen plants provides year-round concealment and thermal cover for wildlife.

Establishment of herbaceous vegetation along the edges of a hedgerow can further enhance the habitat functions of a hedgerow.

Installation of artificial nest boxes with predator guards can encourage cavity-nesting birds and small mammals to utilize a hedgerow.

Living Fences

Thorny shrubs and trees can improve a living fence’s barrier effect.

Screens and Noise Barriers

From eye-level, hedgerows reduce the line-of-sight across open areas, concealing objects behind them from view.

Consider the design from viewpoints on both sides of the screen.

Locate noise barriers as close to the source of noise as possible.

Combination of shrubs and/or trees can create more effective screens than single species plantings.

Evergreens provide foliage that can maintain a screen’s year-round effectiveness.

Improving Landscape Appearance

Consider plants’ seasonal display of colors on bark, twigs, foliage, flowers and fruit.

Consider plants’ growth habits (outline, height and width).

Water Quality and Quantity

Water quality benefits may arise from:

- Arresting sediment movement and trapping sediment-attached substances.
- Infiltration and assimilation of plant nutrients.
- Water cooling effects resulting from reducing the incidence of solar radiation on small watercourses through shading.

A hedgerow will increase surface water infiltration by improving soil structure around its root zone. However, evapotranspiration may reduce groundwater recharge benefits.

Incidental Trapping of Snow or Soil

Although not a primary purpose, hedgerows may incidentally trap wind blown snow or soil.

Consider installing hedgerows on alignments that prevent trapping and accumulation of snow and sand on public roads.

Refer to the Windbreak/Shelterbelt Establishment (380) standard for criteria when

snow or sand trapping is a primary conservation purpose.

PLANS AND SPECIFICATIONS

Plans and specifications for this practice shall be prepared for each site. Plans and specifications shall be recorded using approved specification sheets, job sheets, or narrative documentation in the conservation plan, or other acceptable documentation.

OPERATION AND MAINTENANCE

Vegetation shall be maintained to ensure continued control of odor movement and chemical drift.

Supplemental planting may be required when survival is too low to produce a continuous hedgerow.

Vegetation shall be protected from unwanted fire and grazing throughout its life span.

Pests shall be monitored and controlled.

Periodic applications of nutrients may be needed to maintain plant vigor.

Renovation activities shall be scheduled to prevent disturbance during the wildlife nesting season.

REFERENCES

National Biology Handbook, Part 614.4, “Conservation Corridor Planning at the Landscape Level”. Natural Resources Conservation Service, August 1999.

Shepherd, M., S. L. Buchmann, M. Vaughan, and S. H. Black. 2003. Pollinator Conservation Handbook. Xerces Society. Portland, OR.