

Roadside Habitat

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Document Purpose – This fact sheet is a companion to BWSR Native Vegetation Establishment and Enhancement Guidelines and provides detailed considerations for project planning and design with an emphasis on vegetation selection, installation and management.

Introduction – Roadsides can be important corridors for plant diversity and wildlife species, including declining pollinator species. However, they can also contain invasive plant species that threaten biodiversity. This fact sheet provides guidance on how to establish native vegetation as well as manage problematic invasive plant species and noxious weeds, such as wild parsnip and tansy, while also maintaining plant diversity. Common goals of roadside projects include maintaining public safety, stormwater management, soil stabilization, and providing pollinator habitat.

Site Selection – Roadside habitat projects should be located in areas that will have high value to wildlife species and will not have significant impacts from repeated mowing, herbicide application or invasive species. It may be beneficial to locate new roadside habitat along designated habitat corridors or in areas where the plantings can buffer existing habitat. Roadside management efforts may also be prioritized in areas where existing native vegetation can be enhanced or in areas where invasive species are becoming established.

General Planning Considerations – New roadside projects should consider the site preparation, planting and management strategies that will be needed to result in the successful establishment of plant communities. Roadsides may have different stressors that need to be considered as part of establishment, such as water flow in ditches, steep side slopes and road salt. The composition and diversity of seed mixes is an important consideration and should be based on the goals of conservation programs and partners. Additional information is provided in this fact sheet related to species selection, planting and maintenance of projects.

Structural Design Considerations – Roadsides typically have three zones: the shoulder, ditches and the backslope of ditches. Typically, the roadside and front slope of ditches are mowed most frequently and the backslope of ditches provides the most opportunity for habitat establishment. Both roadsides and ditches can require periodic maintenance that can lead to the disturbance of vegetation.

Plant and Seed Selection – Deep rooted prairie grasses and forbs are often a focus of roadside projects for soil holding, water filtering and infiltration, and year-round wildlife cover. Species from multiple plant guilds (warm season grasses, cool-season grasses, legumes, asters, and other forbs) are selected to ensure that complete plant communities are established, and benefits are provided to multiple species. Dry prairie mixes are used for upland sites with sandy or dry soils, while mesic prairie mixes are used for uplands with medium soil moisture. It is also beneficial to select species that are salt tolerant along roadsides, particularly for areas within ten feet of the roadway.



MnDOT has recently updated their seed mixes based on their past experience with vegetation establishment. [Vegetation - Erosion Control and Stormwater Management](#).

Grasses and forbs are the most common plant types in roadside mixes with some sedges and rushes being present in plantings. Species should be selected that are native to the area and well adapted to site conditions. The following table lists species commonly included in roadside reconstruction projects.



Commonly Used Native Species for Roadside Habitat Enhancement

Grasses:	Big bluestem, Switchgrass, Little bluestem, Indian grass, Slender wheatgrass, Canada wild rye, Sideoats grama, Kalm’s brome, Fringed brome, Western wheatgrass
Forbs:	Yellow coneflower, Butterfly milkweed, Common milkweed, Black-eyed Susan, Smooth aster, Golden alexanders, New-England aster, Maximillian sunflower, Purple prairie clover, Bush clover, Narrow-leaf coneflower, Coreopsis, Spiderwort, Wild bergamot, Mountain mint, Partridge pea, Cup plant, Blazingstars, Showy goldenrod, Stiff goldenrod, Penstemons, Canada milk vetch.

Plant Source Considerations – The source sequence outlined in Section 2 of the Native Vegetation Establishment and Enhancement Guidelines is recommended for roadside projects to ensure long-term sustainability of projects and to protect remnant prairie communities. The use of cultivars should be discussed by project teams and is typically not recommended near remnant communities. Cultivars of native plants have often been bred for certain traits, with genetics combined from multiple locations, which can raise concerns of outbreeding depression.

Vegetation Establishment – Most roadside plantings are conducted in areas of recent disturbance from road construction. Any soil compaction resulting from the construction should be loosened as a first step in preparing the soil for planting. It is recommended to hire separate contractors that specialize in establishing native vegetation for the site preparation and planting. It is also important that weeds are controlled prior to seeding. Some loosening of the soil with cultipackers or harrows may be needed prior to broadcast seeding if a crust has formed on the soil surface. Roadsides that are dominated by smooth brome grass, quack grass, Canada thistle and other perennial weeds often need a combination of treatments such as mowing, herbicide application and tilling to prepare for seeding; multiple treatments may be needed. It is also important to stabilize soils after seeding to prevent erosion and retain moisture.

Operations and Maintenance – Key maintenance steps involve mowing annual and biennial weeds to 5-8 inches during the first couple of years as needed to provide sunlight and to decrease competition for seedlings. After the second year, spot herbicide treatment of perennial weeds is common, while prescribed burning to maintain diversity and to control woody species is common after year three.

For long-term management of roadside an integrated management approach is recommended where a variety of management methods are considered and often combined to effectively control invasive species while also promoting biodiversity. The following are several guiding principles for integrated roadside management.

1. Collaborate with surrounding landowners and weed management organizations on weed control efforts.
2. Map weed patches and high quality habitats to inform management planning and manage weed species before they become a bigger problem.
3. Develop a multi-year management plan for controlling priority weeds.
4. Use spot mowing/spraying and biological control for target species when feasible.
5. Time mowing to protect monarchs and other species (May 15-Sept 20)
6. Prevent weed seed development by managing weeds at the appropriate life cycle stage and season (pdf).
7. For biennials: use a pre-emergent spring herbicide application or foliar application on seedlings, and fall foliar applications on rosettes. For perennials: use foliar applications at appropriate strength herbicide and timing for effective control.
8. Use prescribed fire to suppress non-native species and favor native plants.
9. Prevent moving seed by following practices such as cleaning mowing and construction equipment (pdf) when leaving infested area; and not mowing when weed seeds are ripe
10. Monitor and evaluate treatments and adapt as needed, repeat treatments each year when possible.

Information Sources -

- [Minnesota Noxious Weeds \(pdf\)](#) (Includes Plant Images)
- [Prescribed Fire](#)
- [Integrated Vegetation Management](#)
- [Wild Parsnip Roadside Management](#)
- [Prioritizing Invasive Plant Control \(pdf\)](#)
- [Roadside Best Management Practices that Benefit Pollinators: Handbook for Supporting Pollinators through Roadside Maintenance and Landscape Design](#)
- [Pollinator Conservation on Roadsides](#)
- [Native Thistle Identification and Conservation](#)
- [Pollinators and Roadsides, Roadside Management for Bees and Butterflies](#)