

Urban Forestry

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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 – Urban forests play an important role in the conservation of water resources by filtering rainfall and slowing its flow into streams, rivers, wetlands and lakes, while also decreasing urban heat islands and providing wildlife habitat. Tree establishment and management is conducted in residential landscapes, parks, boulevards, and naturalized areas.

Site Selection – Projects should be planned to meet program and partner goals that often include soil stabilization, water quality, habitat, equity and aesthetics. When selecting projects for wildlife it is important to define specific species that will be benefitted by the project. The [Minnesota Wildlife Action Plan](#) is a document that identifies species of greatest conservation need for different areas of Minnesota. For information about native species that support butterflies and moths, see the National Wildlife Foundation's [Plant Finder Tool](#). Local forestry staff play a key role in providing site selection recommendations and developing forest stewardship plans.

For urban landscapes The Metropolitan Council, in partnership with The Nature Conservancy and Tree Trust, has developed the [Growing Shade](#) application, which combines local stories with an interactive mapping tool to help foresters, planners, advocacy groups, and others make decisions about preserving and enhancing our tree canopy. The mapping tool allows users to generate reports based on variables like climate change, conservation, environmental justice, and public health at a range of scales from census block groups to townships and cities. Many larger cities have also established their own forestry programs and can provide guidance on species selection and maintenance of street trees.



Plant Community, Plant and Seed Selection – Target species for urban projects vary depending on project locations, and project goals. Many resources have been developed in Minnesota to guide decision making for project planning and species selection.

High diversity levels of 10 to 25 species are recommended for wildlife habitat focused projects. Diversity levels will often be limited by the number of species available that are suitable for a project site. Herbaceous species may also be planted at the same time as trees and shrubs. Mix diversity will depend on site conditions and project goals. Relatively low diversity mixes may be used if woodland trees, shrubs, forbs, ferns, and grasses may re-establish at the project site. Appropriate species will vary depending on project locations. The Minnesota Department of Natural Resources nurseries are a good information source for species selection.

Species should be selected that are native to the area and well adapted to site conditions. As there is a wide variety of forest types in Minnesota, the DNR Field Guides to Native Plant Communities of Minnesota, <http://www.dnr.state.mn.us/npc/classification.html>, are a good resource for species selection. These guides will list the dominant tree, shrubs, grass, forb, rush, sedge and fern species for each community type.

Plant Source Considerations – Many forest nurseries document the seed source for their trees and shrubs; this is useful information for making decisions about suitable sources and to ensure that trees and shrubs that are planted will produce viable seed. Some nurseries can also contract grow trees and shrubs from seed or cuttings. The Minnesota Department of Natural Resource has developed seed zones for Minnesota that are widely used for determining appropriate seed sources for forest projects:

http://www.dnr.state.mn.us/forestry/ecs_silv/fieldpractices/seedcollection.html.

Vegetation Establishment – A variety of techniques are used for forest/woodland establishment. Seedling trees are commonly used with tree tubes or other protection from herbivores. Seeds of trees and shrubs planted into a prepared seedbed has also become a more common practice for restoring large areas. In urban areas, bare-root plants, containerized plants, plants installed by tree spades and trees grown in gravel-bed nurseries are all common strategies.

Operations and Maintenance – Maintenance for conservation and restoration plantings often involves mowing around trees and shrubs, so it is important that they are well marked and spaced far enough apart to allow for mowing. Mowing can also be conducted above the height of woody plants that have been planted as seed. Weed mats and wood chips can also be used to suppress weeds around young trees. Herbicide treatment may also be used around seedlings with herbicides that will not affect woody plants or by taking precautions to go around the seedlings. Watering may also be needed, with at least one inch of water per week from rainfall or supplemental watering as trees establish.

Information Sources –

DNR Forestry Website: <http://www.dnr.state.mn.us/forestry/index.html>