

Vegetation

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Minnesota Department of Transportation
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Roadside Vegetation Management Unit
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Purpose

To ensure early identification of potential construction impacts to functional, protected, culturally important, planted or volunteer vegetation and to minimize spread of invasive plants on existing and proposed right-of-way and adjacent properties.

Early identification of potentially impacted vegetation allows MnDOT to discuss impacts with stakeholders and determine need for additional permanent or temporary right-of-way. Early identification also allows time for additional coordination (if applicable) and language (special provision) can be included in the construction project.

Threshold Criteria

A project with any of the following threshold criteria will require early review by the MnDOT's Roadside Vegetation Management Unit (RVMU):

1. Project will occur along the highways and within the reference posts listed below.
 - Highway 2 – Reference post 35-37 and 42-48
 - Highway 32 – Reference post 35-37, 49-52, 55-58, and 70-74
 - Highway 71 – Reference post 81-83
 - Highway 56 – Reference post 8-16
 - Highway 102 – Reference post 2-6
 - Highway 218 – Reference post 20-44

The locations listed have recorded populations of federally endangered plants growing within the right of way. A review to determine potential impact, consultation with US Fish and Wildlife Service, and permit (if applicable) will be needed for any work within these areas. Please refer to [Threatened and Endangered Species – Federal](#) HPDP subject guidance for more information.

2. Project will cause soil disturbance beyond the inslope.
 - a. The majority of high value vegetation occurs in the ditch bottom or backslope of the right-of-way.
3. Project will include soil disturbance under canopy of existing woody vegetation
 - a. The critical root zone guideline for a tree is typically a radius of one foot for every one inch of trunk diameter measured at 4.5 above ground. Although tree roots can extend pass this measurement, minimizing disturbance under the canopy helps the tree through construction.
 - b. The majority of tree roots are in the top 18 inches of soil where oxygen, nutrients, and water are most available. Due to the location in the soil, roots are very susceptible to compaction and removal. Tree roots grow radially out from the trunk and extend beyond the edge of the tree's canopy. Protecting the root system under the tree canopy is crucial to its survival. If soil disturbance needs to occur under the tree canopy additional review/special provisions will be needed.
 - c. Trees growing between sidewalks and curbs have a very limited rooting area. Any soil disturbance and root damage under the canopy can be detrimental to tree health.
4. Project is within area of known sensitive vegetation
 - a. Areas of known sensitive vegetation include but are not limited to state and federally protected plants, native plant communities, remnant prairies, and specimen trees (see Appendix 1 for species and size).
5. Project is within area of known high priority weed infestation
 - a. While all MN State Listed noxious weeds require control on MnDOT right-of-way, some weeds are a higher priority for control than others.
 - i. State listed weeds that pose a human health concern.
 - ii. Weeds listed on the MN State Prohibit: Eradicate list
 - iii. Highly invasive species in geographically small populations as determined by the RVMU. These may or may not be state listed species.
6. Project will require staging within the right-of-way
 - a. Staging of materials and equipment can cause removal of species and compaction. Vegetation review will identify areas within the right-of-way where staging should not be allowed.

Vegetation Categories

Functional Vegetation

Functional vegetation is planted or volunteer vegetation which is supporting the road infrastructure, assisting in maintaining safe road use conditions, or providing visual screens to and from adjacent properties. Vegetation functions include erosion control due to water or wind, water infiltration, blowing and drifting snow control, aesthetic qualities, and visual screens adjacent to residential properties and adjacent junk yards.

Protected Plant Species

Protected plant species are those listed under state or federal endangered species laws or are Witness (bearing) trees.

Landscaped Vegetation

Landscaped vegetation are trees, shrubs, or perennial flowers planted as part of a landscape plan by contract or permit on MnDOT right-of-way. Landscape vegetation includes boulevard trees, highway landscaping, living snow fences, and screens to adjacent properties. Vegetation in this category may be considered to be functional vegetation as well.

Invasive Plants / Weeds

Invasive plants and weeds can be spread easily during construction projects. These include [State listed noxious weeds](#) and other plants identified by MnDOT's RVMU that are in limited populations but have the potential to spread and hinder turf establishment.

Weed populations are mapped as they are found with the EDDMaps application. Weed population data is updated twice a month, stored [internally](#), and can be viewed with ArcGIS. Absence of populations within this dataset does not equal no weeds present, rather interpret as area has not been surveyed.

High Risk Trees

Assessment of tree condition and health along the project area is needed to determine existing tree risk and forecast of tree condition and health during and post construction. This assessment identifies trees that have, or will have as a result of construction, "structural defects that may cause the tree or tree part to fail, where such failure may cause property damage or personal injury¹". The assessment assigns a risk level of low, medium, or high to the tree.

Native Plant Communities

Native plant communities are identified by MN DNR. These areas include remnant prairies, rare plant communities, and managed or restored prairies.

Prepared Statements

No substantial vegetation impacts are identified on this project and no high risk trees will be created as a result of this project.

Projects with substantial vegetation impacts determined by the RVM Unit will need a project-specific statement summarizing impacts and potential mitigation measures. RVM Unit staff will work with District staff to draft the statement.

Relationship to the HPDP

For Class I, II, and III actions, ensure that all mitigation commitments are incorporated into the PS & E package (when appropriate) during detail design.

Potential Permits and Approvals

Permit: Possessing or Taking of State Threatened or Endangered Species

Agency oversight: Minnesota Department of Natural Resources

Legal Basis: Minnesota Statute [84.0895](#), Minnesota Rules [Chapter 6134](#), Minnesota Rules [Chapter 6212.1800 to 6212.2300](#)

Permit: Possessing or Taking of Federal Threatened or Endangered Species

Agency Oversight: U.S. Fish and Wildlife Service

Legal Basis: Endangered Species Act of 1973, 16 USC Chapter 35 [1531-1544](#)

Permit: Transportation of Noxious Weeds Across County Boundaries

Agency Oversight: Minnesota Department of Agriculture

Legal Basis: Minnesota Noxious Weed Law Minnesota Statute [18.76 to 18.91](#)

Permit/Approval: Transportation of Noxious Weeds Within County Boundaries (differs per county)

Agency Oversight: County Agricultural Inspector (list found [online](#))

Legal Basis: Minnesota Noxious Weed Law Minnesota Statute [18.76 to 18.91](#)

Permit: Removal of Witness (Bearing) Tree

Agency Oversight: U.S. Forest Service

Legal Basis: [18 USC 1858](#)

References:

1. *Urban Tree Risk Management: A Community Guide to Program Design and Implementation.*
Publication NA-TP-03-03; US Forest Service
Web site link to publication:
https://www.fs.usda.gov/naspf/sites/default/files/publications/02_na-tp-03-03_urban_tree_risk_management_508c_v2_20171027.pdf

Appendix 1: List of minimum diameter and height measurements for Specimen Trees

Genus/species	Common Name	Rural tree diameter (inches)	Conifer Height (feet)
All Species of Residential/ Urban/ Street Trees	All	All	
Multi-stem measurement	All	treat as one tree, note individual stem diameter and number of stems below 4 feet	treat as one tree, note individual stem diameter and number of stems below 4 feet
<i>Abies balsamea</i>	Balsam fir	7	60
<i>Acer negundo</i>	Boxelder	20	
<i>Acer nigrum</i>	Black maple	4	
<i>Acer platanoides</i>	Norway maple	20	
<i>Acer rubrum</i>	Red maple	10	
<i>Acer saccharinum</i>	Silver maple	40	
<i>Acer saccharum</i>	Sugar Maple	16	
<i>Betula alleghaniensis</i>	Yellow birch	4	
<i>Betula nigra</i>	River birch	10	
<i>Betula papyrifera</i>	Paper birch	12	
<i>Carya cordiformis</i>	Bitternut hickory	10	
<i>Carya ovata</i>	Shagbark hickory	4	
<i>Catalpa speciosa</i>	Catalpa	20	
<i>Celtis occidentalis</i>	Hackberry	17	
<i>Fraxinus spp</i>	White, Green, & Black ash	Record only ash that have been/suspected treated for EAB	
<i>Ginkgo biloba</i>	Ginkgo	28	
<i>Gleditsia triacanthos</i>	Honeylocust	16	
<i>Gymnocladus dioicus</i>	Kentucky coffeetree	8	
<i>Juglans cinerea</i>	Butternut	4	
<i>Juglans nigra</i>	Black walnut	20	
<i>Larix laricina</i>	Tamarack	14	47
<i>Malus spp</i>	Crabapple	8	
<i>Morus rubra</i>	Red mulberry	4	
<i>Picea glauca</i>	White spruce	12	91
<i>Picea mariana</i>	Black spruce	5	60
<i>Picea pungens</i>	Co. Blue Spruce	13	60
<i>Pinus banksiana</i>	Jack Pine	10	50
<i>Pinus nigra</i>	Austrian pine	14	72
<i>Pinus resinosa</i>	Northern Red Pine	15	84

Genus/species	Common Name	Rural tree diameter (inches)	Conifer Height (feet)
<i>Pinus strobus</i>	Eastern white pine	20	72
<i>Populus spp</i>	Balsam poplar, quaking aspen, big tooth aspen	12	
<i>Populus deltoides</i>	Eastern cottonwood, hybrid poplar	40	
<i>Prunus serotina</i>	Black Cherry	8	
<i>Quercus bicolor</i>	Swamp white oak	13	
<i>Quercus spp (Red Oak Group)</i>	N. Pin Oak, E. Pin Oak, N. Red Oak, Black Oak	15	
<i>Quercus alba</i>	White oak	20	
<i>Quercus macrocarpa</i>	Bur oak	26	
<i>Sorbus americana/aucuparia</i>	American Mountain Ash, European Mountain Ash	5	
<i>Tilia cordata</i>	Little leaf linden	13	
<i>Tilia americana</i>	Basswood	23	
<i>Ulmus spp</i>	Elm (not Siberian)	25	