

Appendix E
Draft Vegetation Management Plan

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**Appleton to Benson Transmission Line
Project in Swift County, MN**

DRAFT

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ACRONYMS AND ABBREVIATIONS

ac	acre
Applicants	Great River Energy, Otter Tail Power Company, Western Minnesota Municipal Power Agency, Agralite Electric Cooperative, and City of Benson
BMPs	best management practices
BWSR	Minnesota Board of Soil and Water Resources
dbh	diameter at breast height
ERO	Electric Reliability Organization
General Permit	Construction Stormwater General Permit
FERC	Federal Energy Regulatory Commission
HVTL	high voltage transmission line
kV	kilovolt
lbs	pounds
MDA	Minnesota Department of Agriculture
MDNR	Minnesota Department of Natural Resources
MnDOT	Minnesota Department of Transportation
MPCA	Minnesota Pollution Control Agency
MPUC	Minnesota Public Utilities Commission
NERC	North American Electric Reliability Corporation
NPDES	National Pollutant Discharge Elimination System
NWIS	noxious weeds and invasive species
Plan	Vegetation Management Plan
PLS	Pure Live Seed
Project	Appleton to Benson Transmission Line Project
RIM	Reinvest in Minnesota
ROW	right-of-way
SWPPP	Stormwater Pollution Prevention Plan
TCSBs	temporary clear span bridges
USFWS	United States Fish and Wildlife Service

1. PROJECT SUMMARY

Great River Energy, Otter Tail Power Company, Western Minnesota Municipal Power Agency, Agralite Electric Cooperative, and City of Benson (together, the Applicants)¹ are applying for a route permit for the Appleton to Benson Transmission Line Project (Project) from the Minnesota Public Utilities Commission (MPUC) in Docket No. TL 24-264. This Project consists of constructing approximately 29 miles of new 115-kilovolt (kV) high voltage transmission line (HVTL) from the City of Appleton to the City of Benson in Swift County, Minnesota. The Project is described in Sections 1 and 3 of the Application for a Certificate of Need and Route Permit.

2. PLAN OVERVIEW

The Applicants have developed this Vegetation Management Plan (Plan) for the Project to address the Route Permit condition for the Project related to vegetation management.

The primary goal of this Plan is to construct the Project and maintain the Project right-of-way (ROW) in a manner that ensures a safe and reliable transmission line. In addition to the primary goal of ensuring a safe and reliable transmission line, this Plan addresses the following goals:

- Develop and maintain cooperative relationships with landowners along the ROW to accommodate reasonable requests and preferences related to ROW vegetation management.
- Comply with applicable requirements in federal, state, and local permits, licenses, and/or easements.
- Prevent the introduction and spread of noxious weeds and invasive species (NWIS) due to the Project.

This Plan reflects vegetation management practices which are consistent with applicable North American Electric Reliability Corporation (NERC) requirements, as well as requirements set by the MPUC. This Plan also incorporates, where applicable, the Minnesota Department of Commerce's Generic Vegetation Establishment and Management Plan Guidance.

3. SITE DESCRIPTION

a. Existing conditions

The Proposed Route will be located within the Cities of Appleton, Holloway, Danvers and Benson, and Townships of Appleton, Shible, Edison, Moyer, Marysland, Six Mile Grove, Clontarf and Torning in Swift County, Minnesota.

¹ For ease of use, this Plan refers to Applicants throughout. However, individual Applicants will be responsible for constructing, operating, and maintaining specific components of the Project, as discussed in Chapter 3 of the Application for a Certificate of Need and Route Permit.

The Project area consists predominantly of agricultural fields, interspersed with isolated residential and agricultural developments. Scattered throughout are pockets of wooded areas and hydrologic features, including wetlands, streams, and ponds. The Project area is generally located in topography with minimal elevation changes, which is consistent with a morainal landscape. The steepest elevation changes occur near river and stream crossings. Elevations range from 1,010 to 1,040 feet with the lower elevations located toward the southwest portion of the Route and the higher elevations located toward the northeast of the Route.

Existing transmission lines are located within the Project area, including the existing Great River Energy 115-kV systems, and Otter Tail Power's existing 41.6-kV system that connects multiple distribution substations in the Project area. There are also many distribution lines within the area. Alliance Pipeline maintains a natural gas transmission pipeline in the Project area. The BNSF Railway extends from the City of Appleton to the City of Benson and there are many state and county highways, and local roads throughout the Project area.

The Project lies in the northwest portion of the Minnesota River Prairie Subsection of the North Central Glaciated Plains Section of the Prairie Parkland Province as defined by the MDNR Ecological Classification System. The MDNR describes the Minnesota River Prairie Subsection as:

The boundaries of this subsection coincide with large till plains flanking the Minnesota River. The unit is bounded to the southwest by the Prairie Coteau. A series of end moraines define the eastern boundary, starting with the Alexandria Moraine to the northeast and ending with end moraines associated with the Des Moines lobe in the southeast. This subsection consists of a gently rolling ground moraine about 60 miles wide. The Minnesota River occupies a broad valley that splits the subsection in half. The valley was created by Glacial River Warren, which drained Glacial Lake Agassiz. Topography is level to gently rolling. The steepest topography of the subsection is along the Minnesota River and on the Big Stone Moraine, which has steep kames and broad slopes. Soils in this subsection are primarily Udolls and Aquolls on relatively level topography, generally with 15 feet or less of local relief. Dry prairie soils (primarily Ustolls) are also present on level to gently rolling topography. They occupy convex knobs on the landscape. Native vegetation was primarily tallgrass prairie, with islands of wet prairie and forests of silver maple, elm, cottonwood, and willow on floodplains along the Minnesota River and other streams. Presently, agriculture is the dominant land use.²

The Applicants have prepared a Certificate of Need and Route Permit Application that describes in detail the natural environment features crossed by the approximately 29-mile transmission line, including land use, soils, and hydrological features. Drain tile features will be identified during landowner negotiations.

² MDNR. Undated. Ecological Classification System: Prairie Parkland Province– North Central Glaciated Plains – Minnesota River Prairie Subsection. Available online at: <https://www.dnr.state.mn.us/ecs/251Ba/index.html>. Accessed August 2024.

b. Project components

i. Transmission line ROW

The transmission line ROW will be generally 50 feet either side of the transmission line centerline for a total width of 100 feet. Where the transmission line parallels roads, some ROW is anticipated to overlap with existing road ROW. The landowner will be compensated for the ROW as part of the easement acquisition process. Minimal-to-no guying is anticipated for the Project; however, if guying becomes necessary, additional ROW will be acquired as necessary to incorporate the guy wires and stakes that are located outside of the 100-foot ROW.

ii. Temporary construction areas

Temporary construction areas typically include stringing equipment setup areas and equipment and material staging areas. Landowner easements are acquired for these stringing and staging areas. The Applicants will seek existing disturbed lots or yards to use as equipment and material staging areas. Because the ROW is located parallel to public roads, the need for new or improved off-ROW access roads or approaches is anticipated to be limited.

iii. Overview of impacts

Temporary impacts to land use and vegetation, including wetlands, may occur where temporary access or construction workspace is required, and/or where the 100-foot-wide permanent ROW occurs in non-woody vegetation wetland communities requiring vegetation clearing. As discussed in Section 5, clearing in wetlands will be conducted during frozen conditions, using low ground pressure equipment and/or, or mats will be installed to minimize impacts to vegetation if frozen ground conditions are not sustained. Staging or stringing setup areas will not be placed within or adjacent to water resources to the extent practicable.

Transmission line structures are generally designed for installation at existing grades. Therefore, structure sites will not be graded or leveled unless it is necessary to provide a reasonably level area for construction access and activities. For example, if vehicle or installation equipment cannot safely access or perform construction operations properly near the structure, temporary matting and/or minor grading of the immediate terrain may be necessary to establish a safe working area.

Permanent impacts to land use and vegetation, including wetlands occur when structures or other permanent infrastructure are installed, or when woody wetland vegetation communities occur within the permanent 100-foot-wide ROW where the Applicants will conduct regular vegetation maintenance to remove tall trees and shrubs from the ROW (i.e., permanent conversion). Up to approximately 25 acres of permanent impacts are anticipated to agricultural land use areas associated with the installation of the Appleton, Moyer and/or Danver substations. Applicants are currently working with landowners regarding substation locations and will also coordinate with landowners regarding pole placement during development of the final design.

Impacts to wetlands will be reduced by spanning and avoiding structure placement in these features. Permanent impacts to waterbodies and watercourses will be avoided by spanning these

features; although temporary bridge installation may be required to allow access during construction.

The Applicants implement the construction methods and best management practices (BMPs) described in Sections 5 through 10 during construction to reduce impacts to the natural environment. The Applicants will restore areas disturbed by construction activities as further described in Sections 9 and 10.

4. MANAGEMENT OBJECTIVES

a. Construct the Project and maintain the Project ROW in a manner that ensures a safe and reliable transmission line

The Applicants' primary goal is to construct the Project and then operate and maintain the Project and its ROW in a manner that ensures a safe and reliable transmission line.

In response to widespread outages in the United States in the early 2000s, Congress enacted the Energy Policy Act of 2005, which authorized the Federal Energy Regulatory Commission (FERC) to certify an Electric Reliability Organization (ERO) to create mandatory, enforceable reliability standards; the standards are subject to FERC review and approval. FERC subsequently designated NERC as the ERO tasked with developing and enforcing standards to ensure the reliability of the transmission system in North America. NERC's standards are developed using a results-based approach that focus on performance, risk management, and entity capabilities, and using an American National Standards Institute-accredited process that ensures the process is open to all persons directly and materially affected by the reliability of the North American bulk power system.³

More specifically, NERC developed its Reliability Standard FAC-003-4 Transmission Vegetation Management and began enforcement of that standard in 2007. In recognition of the fact that failure to address vegetation requirements can cause major power outages and injury, NERC is authorized to assess regulatory penalties for non-compliance. This standard is updated from time to time and is reviewed and approved by FERC, just like other NERC reliability standards. NERC has determined that "[m]ajor outages and operational problems have resulted from interference between overgrown vegetation and transmission lines located on many types of lands and ownership situations" and that adherence to standard requirements "will reduce and manage this risk."⁴ The purpose of the NERC standard is:

To maintain a reliable electric transmission system by using a defense- in-depth[-]strategy to manage vegetation located on transmission ROWs and minimize encroachments from vegetation

³ See North American Electric Reliability Corporation, *Standards*, available at <https://www.nerc.com/pa/Stand/Pages/default.aspx>.

⁴ NERC, *FAC-003-4 Transmission Vegetation Management*, available at <https://www.nerc.com/pa/Stand/Reliability%20Standards/FAC-003-4.pdf>. Accessed October 2024.

*located adjacent to the ROW, thus preventing the risk of those vegetation-related outages that could lead to Cascading.*⁵

For transmission lines subject to NERC standards, compliance with these standards is required. And, even for transmission lines which are not subject to NERC standards, ensuring safe and reliable construction and operation is paramount. While the Project is not subject to NERC standards, the purpose of this Plan is to meet the objective of a safe and reliable transmission line, consistent with applicable laws, permits, and other requirements, while also minimizing human and environmental impacts associated with vegetation management to the extent possible.

In summary, to ensure safe construction of the Project, the Applicants will clear the ROW of woody vegetation in advance of construction. Additional detail regarding the ROW preparation and construction process is included in Section 5. After construction, the Applicants will restore the ROW as discussed in Section 9. Thereafter, safe operation of the transmission line is the priority. The Applicants will annually inspect the ROW for vegetation management purposes to ensure safe and reliable operations and will implement “wire/border zone” practices as discussed in more detail in Section 12.

b. Landowner preferences

- i. Develop and maintain cooperative relationships with landowners along the ROW to accommodate reasonable requests and preferences related to ROW vegetation management.*

The Applicants plan to work cooperatively with landowners before, during, and after the construction process regarding easements, rights-of-way, structure locations, restoration, and maintenance (see Section 5.a, 6, 8, 9, and 12). This coordination and cooperation are in recognition of the fact that, in most locations under private ownership, the Applicants will have an easement for the Project – it does not own the property in fee simple – and, in large part, the landowners’ use of their property, including the ROW, will continue after the Project is constructed and operational.

For example, land that is in agricultural production will likely return to agricultural production; similarly, landowners with mowed turf grass will typically want the ROW restored with turf grass that the landowner can mow, just like the rest of the parcel. In this way, a transmission line ROW is distinct from vegetation management for other types of energy infrastructure (e.g., a solar farm where the project operator has exclusive control of the premises).

This Plan acknowledges that the Applicants will generally not have exclusive access to the easement and that the landowner can and will continue to use the easement in a manner that does not interfere with the safe and reliable operation of the Project and is otherwise lawful. As such, this Plan reflects that the Applicants will coordinate with landowners regarding restoration and maintenance, which means that restoration is likely to be consistent with pre-existing conditions and use, where practicable and consistent with safe and reliable transmission line operation (see Section 4.a). When coordinating with landowners regarding restoration and maintenance practices,

⁵ *Id.*

the Applicants will also discuss the use of native and/or pollinator vegetation with landowners, where desired and practicable.

ii. *Comply with applicable requirements in federal, state, and local permits, licenses, and/or easements*

In addition to the Route Permit, the Project is required to comply with other applicable federal, state, and local statutes, laws, permits, licenses, and/or easements. Where those statutes, laws, permits, licenses, or easements conflict with this Plan, they will take precedent over this Plan to the extent they do not violate any other route permit condition. For example:

- Road ROW permits: Where the Project will impact road ROWs, the Applicants will follow the vegetation management requirements and guidelines of the appropriate road authority, which generally incorporates a wire/border zone practice for ROW clearing and maintenance, unless another maintenance practice is required by applicable permit or approval.⁶ For example, if trees need to be removed, prior to any work being completed, a Minnesota Department of Transportation (MnDOT) Roadside Vegetation Management Unit person may issue a valuation and invoice for the trees to be removed. Also, the MnDOT has guidelines regarding seeding methods and mixes for its ROWs.
- Construction Stormwater General Permit: As a requirement of the National Pollutant Discharge Elimination System (NPDES) permit program administered by the Minnesota Pollution Control Agency (MPCA) coverage under the Construction Stormwater General Permit (General Permit) is required if a construction activity⁷ results in land disturbance equal to or greater than 1 acre. The General Permit also requires the preparation of a Stormwater Pollution Prevent Plan (SWPPP) that outlines the procedures that will be implemented to minimize erosion, and to mitigate sediment transport during and after construction activities. The SWPPP covers, among other things, temporary erosion and sediment controls BMPs. Many of those BMPs are reflected in this Plan.
- Minnesota Department of Natural Resources (MDNR) licenses/permits: MDNR licenses or permits may have requirements specific to a certain water crossing or site. Where applicable, the Applicants will implement MDNR-required site specific conditions.
- State and Federal Protected Species Statutes and Laws: The Applicants will comply with Minnesota's Endangered Species Statute (*Minnesota Statutes*, section 84.0895) and associated Rules (*Minnesota Rules*, part 6212.1800 to 6212.2300 and 6134) which prohibit take of threatened or endangered species without a permit. Great River Energy will also comply with the Federal Endangered Species Act which prevents take of federally listed

⁶ For example, the Applicants are aware that the MnDOT may not support the wire/border zone practice for facilities in MnDOT ROW.

⁷ "Construction Activity" means activities including clearing, grading, and excavating, that result in land disturbance of equal to or greater than one acre, including the disturbance of less than one acre of total land area. [Minn. R. 7090].

species with concurrence from the United States Fish and Wildlife Service (USFWS) or a permit.

- Minnesota Board of Soil and Water Resources (BWSR) Reinvest in Minnesota (RIM) easements: The Proposed Alignment may cross BWSR RIM easements. Among other restrictions, easements can prohibit harvesting of trees and erecting or constructing any type of structure, temporary or permanent, on the easement area. BWSR indicated that vegetation maintenance must be consistent with the conservation plan associated with the easement and that siting of permanent structures within the easements should be avoided. Compensatory mitigation will be required for impacts to the easements. The Applicants will continue to coordinate with BWSR to avoid and/or mitigate impacts to these easements and to obtain the required authorization.

iii. Prevent the introduction and spread of NWIS due to the Project

During all phases of Project activities, including clearing, construction, operation and maintenance, the Project will minimize the introduction and spread of NWIS along the ROW by implementing BMPs that discourage the spread of identified species, and routine cleaning of equipment to remove dirt and plant debris. See Section 7 below for further detail.

c. Vegetative cover

As further described in Section 5, soil disturbance is generally limited to the augering of holes for the pole placement. The Applicants will cut tall vegetation along the full width of the ROW; however, herbaceous vegetation and root stock will typically remain in place. By limiting soil disturbance, the Applicants also retain the existing seed banks to facilitate revegetation.

The Applicants' goal is to establish sufficient permanent vegetative cover as expeditiously as possible after the Project construction activities are complete to minimize erosion potential. Consistent with the MPCA's General Permit, stabilization will be achieved once disturbed soils have 70 percent permanent vegetative cover.⁸ Where appropriate, the Applicants will apply supplemental seed using BMPs as discussed further in Sections 9 and 10.

Native seed mixes can take two to three years to fully germinate depending on soil, site, weather conditions and the time of year that the seeds were installed. During the first year, native plants will grow to only about 1 to 3 inches tall. By the second year, some native grasses, sedges, and flowers may reach mature height, and some may flower, alongside many first-year native seedlings as well. Many of the native plants will mature and start flowering by the third year. Depending on the seed mix, other plants will not appear or mature for several years.

⁸ "Permanent Cover" means surface types that will prevent soil failure under erosive conditions. Examples include gravel, concrete, perennial cover, or other landscaped material that will permanently arrest soil erosion. The Applicants must establish a uniform perennial vegetative cover (i.e., evenly distributed, without large bare areas) with a density of 70 percent of the vegetative cover native to local undisturbed areas on all areas not covered by permanent structures, or equivalent permanent stabilization measures. Permanent cover does not include temporary BMPs such as wood fiber blanket, mulch, and rolled erosion control products (Minnesota Admin. Rules 7090).

5. RIGHT-OF-WAY PREPARATION AND CONSTRUCTION

Construction of an overhead transmission line requires several sequential activities in a coordinated matter within the Project workspace. Currently, the Applicants plan to conduct the activities identified below generally in sequential order. Several of these activities may occur concurrently during the construction process, with more than one construction crew operating simultaneously at different locations, and with each crew passing through any given area at least once. Different crews will work at different paces, but typically, substation construction and assembly and setting of the structures are typically the more time-consuming activities.

a. Landowner notification

Landowners will be notified prior to clearing activities, as required by applicable permit conditions (typically 14 days). Among other things, the notification letter will inform landowners:

- The ROW will be staked indicating the extent of clearing activities.
- Landowners can request to keep any of the timber and materials. Requested wood will be cut to no less than 10-foot segments. Requested whole trees, trunks, wood chips or mulch will be placed just outside of the ROW.
- All unwanted materials will be removed from the landowner's property.
- Herbicides to prevent regrowth of woody vegetation may be used. Landowners may request the method of application or request that no herbicides be used. See Section 6.

b. Initial right-of-way clearing

The ROW will be surveyed and marked in advance of tree clearing to identify the extent of Project activities.

Staging and lay-down areas will be limited to previously disturbed areas where practicable and will avoid wetlands.

Vegetation clearing will be limited to the permanent ROW, temporary ROW, danger trees off ROW, and off-ROW access.

BMPs will be used to minimize the spread of NWIS. See Section 7.

Where Project schedule allows, and in compliance with applicable permits and authorizations, vegetation clearing will be conducted on firm or frozen ground to minimize rutting and soil erosion. If schedules or weather do not support firm ground, low ground pressure equipment will be used and/or construction mats will be installed as necessary to minimize erosion.

Mechanical equipment such as feller bunchers or brush cutters may be used for clearing. In areas where clearing with large equipment is not viable, clearing will be done with hand tools such as chain saws or other hand tools.

Vegetation within the ROW will be cut at or slightly above the ground surface. Any tree stumps or surface roots in managed turf grasses will be ground to slightly below grade and the hole backfilled with local soils and seeded with a similar turf grass mixture. Any stumps outside of managed turf grass areas will typically be cut or ground such that no more than two inches remain above grade. The Applicants do not typically grub stumps or roots to minimize soil impacts and erosion potential.

Trees, trunks and/or limbs cut on private property are typically cut to approximately 10-foot lengths unless the landowner requests longer lengths.

Trees (greater than or equal to 3 inches diameter at breast height (dbh) or greater than 20 feet tall) cut from a wetland will be moved outside of the wetland. If the materials will be chipped or shredded, that work will be completed outside of wetlands.

Brush within a wetland may be cut with a brush mower or similar device if the chips/mulch will not exceed one inch in depth. If sufficient brush is present such that debris will exceed 1 inch in depth, brush will be hauled out for processing in an upland area.

All materials a landowner has requested to keep are stacked outside the ROW. All materials a landowner does not wish to keep are stacked inside the ROW for further processing and disposition.

Any materials a landowner does not wish to keep will be removed from their property. These unwanted materials may be offered to other landowners, offered for sale, placed in a composting site, or disposed of at landfill. The balance of materials will likely be disposed of at a Swift County Landfill or another appropriate location to be determined by the tree contractor.

c. Erosion and sediment control BMPs

Erosion and sediment control methods and BMPs will be utilized to minimize runoff during line construction. Such BMPs may include but are not limited to the installation of sediment barriers (e.g., silt fence, straw bales, bio-logs), filter socks, mulch, upslope diversions, and slope breakers. As described in Section 9, exposed soils will also be revegetated as soon as possible to minimize erosion.

Work will comply with the SWPPP developed for the Project. The SWPPP will define BMPs for erosion and sedimentation prevention and mitigation. Excavating in steeply sloped areas will be avoided to the extent practicable. In accordance with the MPCA General Permit recommendations, the Applicants will use "wildlife friendly netting," including those that use natural fiber or 100 percent biodegradable materials and that use a loose weave with a non-welded, movable jointed netting. Products that are not wildlife friendly include square plastic netting that are degradable (e.g., photodegradable, UV-degradable, oxo-degradable), netting made from polypropylene, nylon, polyethylene, or polyester.

After construction activities are complete, the Applicants will continue to inspect the ROW where seeding and sediment and erosion control BMPs have been implemented and will follow up with reseeding measures where vegetative cover by the specified seed mix, or revegetation by the local,

native seed source, is inadequate to provide final stabilization. The Applicants will inspect the ROW until permanent cover of at least 70% is achieved.

d. ROW preparation and construction at public water crossings

The transmission line centerline crosses four regulated MDNR Public Waters:⁹

- Pomme de Terre River, Kittle Number M-055-179 is crossed along 60th St SW in Section 31, Township 121N, Range 42W. This river is also a recreational water trail.
- Cottonwood Creek, Kittle Number M-055-158-014 is crossed along 40th St SW in Section 28, Township 121N, Range 41W. This river is also a recreational water trail.
- Judicial Ditch 8, Kittle Number M-055-158-033.5-002 is crossed along 40th St SW in Section 26, Township 121N, Range 41W.

County Ditch 3, Kittle Number M-055-158-033.5 is crossed along 20th St SW in Section 15, Township 121N, Range 40W. A minimum 50-foot natural vegetative buffer will be maintained on both banks of the stream crossings to maintain habitat and bank stability.

ROW clearing within at least 30 feet of a non-MDNR jurisdictional stream or wetland will be conducted to protect all non-invasive vegetation. Brush species will be left across a majority of the ROW, except brush in the wire zone (see Section 12.c) will be removed to facilitate ROW access. No trees that could grow to over 15 feet tall are allowed in the ROW.

Temporary Clear Span Bridges (TCSBs) may be used to cross public waters when necessary for ROW access or construction. TCSBs will cross narrow waterbodies from top of bank to top of bank when banks are stable and utilize construction matting on top of steel frame. No excavation of the bed or banks will be required, nor will in-stream supports be used. BMPs for the installation and maintenance of TCSBs include:

- Installation of erosion and sediment control devices prior to or concurrent with bridge installation.
- Debris or vegetation that becomes lodged on the bridge will be removed and disposed of in an upland area.
- Bridges will be maintained to prevent soil from entering the waterbody. Soil that accumulates on the bridge decking will be removed.
- Bridges will not restrict flow or pool water while the bridge is in place and will be constructed with clean materials.

If utilized, TCSBs will be removed during final cleanup. During removal, bridge decking will be removed in a manner where sediment and debris are collected and not allowed to enter the

⁹ The Applicants have applied for an MDNR utility crossing license for these public waters.

waterbody. Once the bridge is removed, the Applicants will conduct additional grading as necessary to restore the top of banks to as near as practicable to pre-construction conditions. Because bridge headers will typically be placed on top of the vegetation, grading will be limited or may not be required. Additional seeding and/or installation of erosion and sediment controls will also be implemented as required.

6. HERBICIDES

Landowners, operators of organic farms on adjacent parcels, and bee apiary operators within 3 miles will be notified 14 days in advance if herbicides will be used on the ROW. The notice will indicate what herbicides will be used and the methods of application (e.g., broadcast, selective spot treatment, or basal treatment). The closest registered apiary¹⁰ is located approximately 3 miles northwest of the existing Benson substation.

Unless a landowner has specified that no herbicides are to be used on their property, herbicides may be used to treat tree and brush stumps to prevent regrowth, and/or to control NWIS (see Section 7). If organic farming is being practiced on adjacent property, see Section 8 Organic Farms for additional requirements.

Any weed control spraying will be in accordance with State of Minnesota regulations. Herbicides will be used in accordance with manufacturer's specifications and all applicable federal and state regulations.

Herbicides used within or near wetlands or waterbodies must be:

- designed for use in wet areas as designated by manufacturer's specifications and federal and state regulations; and
- be used in accordance with manufacturer's specifications as well as all applicable federal and state regulations.

Areas of high public exposure such as rivers, creeks, streams, and U.S. and state highways shall be treated with a selective basal or backpack application. Approximately 30 to 300 feet on each side of the crossing shall be treated in this manner.

Herbicides will not be used on any state or federal lands without approval of the agency having authority over such land.

The Applicants may use herbicides on land owned by Applicants (e.g., substation facilities). The Applicants will work with adjacent landowners, if requested, on weed control activities.

¹⁰ Minnesota Department of Agriculture. No Date. Bee Check. Available online at: <https://mn.beecheck.org/map>. Accessed August 2024.

7. NOXIOUS WEEDS AND INVASIVE SPECIES

Terrestrial plant invasive and noxious species in Minnesota are regulated by the Minnesota Department of Agriculture (MDA).¹¹ The MDNR also manages terrestrial plant invasive and noxious species on public lands and at public waters. The MDNR maintains a geospatial dataset of terrestrial invasive and noxious species observations.¹² According to this dataset, purple loosestrife (*Lythrum salicaria*) has been documented at three locations along 20th St SW and along County Road 3; leafy spurge (*Euphorbia esula*) has been documented at one location along 60th St SW; Canada thistle (*Cirsium arvense*) has been documented along 40th St SW; and yellow toadflax (*Linaria vulgaris*) has been documented along Pacific Avenue.

During all phases of Project activities including clearing, construction, operation and maintenance, the Applicants will manage documented NWIS occurrences that are listed as “eradicate” or “control” under the “Prohibited Noxious Weed” category by the MDA located within the ROW and temporary workspaces. During construction and maintenance, the Applicants will implement the following BMPs to prevent the spread of NWIS:

- Limiting grading and excavation to areas surrounding pole structure foundations, and only as needed along access roads and workspace areas for a level and safe working area.
- Equipment will be cleaned before it is used in Project ROW and temporary construction workspaces, between equipment use in a known infested area and a non-infested area, and prior to entering and exiting the Project ROW or temporary construction workspace. Cleaning will consist of scraping or blowing to remove visible dirt and weed debris from machinery and trailers, including tracks and wheels.
- Only weed-free materials (e.g., straw bales, bio-rolls, mulch) will be used in erosion control.
- Equipment and clothing will be inspected for invasive materials.
- Collected invasive materials will be secured and disposed of at an offsite location to avoid dispersal.
- Minimally disturbed areas will be allowed to restore naturally.
- All disturbed areas will be revegetated using seed mixes labelled “Noxious Weeds; None Found” in accordance with regulations and will utilize yellow tag seed when available.
- Compliance with the General Permit, including stabilization requirements, and inspection, maintenance and repair of erosion and sediment control BMPs. Certified weed-free straw or weed-free hay will be used for erosion and sediment control BMPs.

¹¹ <https://www.dnr.state.mn.us/invasives/index.html>.

¹² <https://gisdata.mn.gov/dataset/env-invasive-terrestrial-obs>.

- Major infestation areas may be treated with the recommended herbicides (if approved by the landowner) or by mechanical methods such as mowing or burning. The contractor will be required to obtain the necessary permits and/or certifications for the use of applicable herbicides.

It is important to note that there may be NWIS already existing on private parcels along the ROW. While this does not preclude the Applicants from the responsibility of managing the spread of NWIS to the greatest extent possible, this ability may be limited by pre-existing conditions. For example, a NWIS concentration adjacent to the ROW may result in NWIS also spreading into the ROW. The Applicants do not have the authority to treat NWIS outside of their ROW. Where land outside of the ROW contains significant amounts of NWIS clearly visible from the ROW, the Applicants and their contractors will attempt to notify landowners about the NWIS and control options they may want to consider.

As discussed in Section 5.c, the Applicants will continue to inspect the ROW where seeding and sediment and erosion control BMPs have been implemented and will follow up with reseeding measures where vegetative cover by the specified seed mix, or revegetation by the local, native seed source, is inadequate to provide final stabilization. The Applicants will inspect the ROW until permanent cover is achieved. Revegetation in non-agricultural areas will be considered successful when the cover of acceptable vegetation is dominant and non-NWIS species density is less than or similar to surrounding lands that have not been affected by the Project. If monitoring indicates a higher density of NWIS, the Project will take appropriate measures to control NWIS. See also Section 4.c.

8. ORGANIC FARMS

There are no known or registered organic farms within or adjacent to the Project ROW according to the MDA¹³ or the United States Department of Agriculture Organic Integrity Database.¹⁴ However, if the Applicants encounter a farm that is working toward certification or a landowner considers its farm to be organic, even if they are not certified, the Applicants will work with the landowner to minimize impacts. Special practices will be adhered to within and adjacent to these organic agricultural lands.

If the Applicants became aware of an existing or developing, unregistered organic farm within or adjacent to the ROW, the Applicants will work with the organic farmer to develop acceptable maintenance practices potentially including:

- Working with the landowner to identify site-specific maintenance and/or construction practices that would minimize the potential for decertification; once these are developed, the specific measures will be followed. Possible practices may include:
 - equipment cleaning;

¹³ MDA Organic Farm Directory by County, <https://www.mda.state.mn.us/organic-farm-directory-county>.

¹⁴ US Department of Agriculture Organic Industry Database, <https://organic.ams.usda.gov/integrity/>.

- planting a deep-rooted cover crop in lieu of mechanical decompaction;
 - application of composted manure or rock phosphate;
 - preventing the introduction of disease vectors from tobacco use;
 - restoration and replacement of beneficial bird and insect habitat;
 - maintenance of organic buffer zones; and
 - use of organic seeds for any cover crop.
- Prohibited substances will not be applied onto organic agricultural land. No herbicides, pesticides, fertilizers, or seed will be applied unless requested and approved by the landowner.
 - No refueling, fuel or lubricant storage, or routine equipment will be allowed on organic agricultural land. If these prohibited substances are used on land adjacent to organic agricultural land, they will be used in such a way to prevent them from entering the organic agricultural land.
 - Topsoil and subsoil layers that are removed during work on these lands for temporary road impacts will be stored separately and replaced in the proper sequence after work is complete.
 - Erosion control methods on organic agricultural land will be consistent with the Organic System Plan to the extent feasible. Adjacent to these lands, erosion control procedures will be designed so sediment from non-organic land would not flow into the organic agricultural lands.
 - Weed control methods will be consistent with the Organic System Plan to the extent feasible.

9. RESTORATION

a. Overview of restoration process

Once construction ceases, the ROW will be inspected to identify areas impacted by Project activities. Typical impacts might include rutting, soil compaction, soil exposure, and damage to native vegetation, all to varying degrees. In areas of minimal disturbance (e.g., where erosion is limited to dispersed areas, surrounding existing vegetation provides control of sediments, existing vegetation is matted down due to vehicle traffic, or areas where drilling spoils are raked into existing vegetation) the disturbed areas will be allowed to regenerate naturally.

All conditions as specified in the local, state, and federal permits and private landowner agreements for final restoration and cleanup will be met. Revegetation and restoration of disturbed areas associated with Project activities are intended to protect wetland and water resources from issues

associated with sedimentation, to protect wildlife habitat, and reduce the movement of NWIS species within the ROW.

Restoration work will be coordinated with each landowner by the restoration contractor and/or land agent. Finally, each landowner will be mailed a letter asking if they have any outstanding restoration concerns.

Restoration activities may, as needed, include:

- Collecting and disposing of all work-related debris and trash.
- Discing or grading to repair rutting.
- Regrading areas disturbed by construction or clearing to reflect pre-construction conditions.
- Applying temporary seed and temporary stabilization to minimize erosion potential to the extent practicable.
- Permanent seeding of non-agricultural areas disturbed by transmission line structure installation and the installation of temporary stabilization to prevent erosion.
- Unless timber, slash or chips have been requested by the landowner, all residual vegetation materials will be removed and properly disposed of off-site. The Applicants may request a burning permit from state or local jurisdictions to burn residuals.
- Trees (greater than or equal to 3 inches dbh or greater than 20 feet tall) cut from a wetland will be moved outside of the wetland. If the materials will be chipped or shredded, that work will be completed outside of wetlands.
- Brush within a wetland may be cut with a brush mower or similar device if the chips/mulch will not exceed 1 inch in depth and the work will not cause rutting or compaction in the wetland. If sufficient brush is present such that debris will exceed 1 inch, sufficient brush will be hauled out for processing in an upland area.
- In accordance with easements, land agents will work with any farmers to repair any damages to cropped fields through discing or planting of deep-rooted crops, and compensate them for any crop damage, consistent with the requirements of applicable easements (which generally require that landowners receive compensation for construction-related crop damages) and any related landowner agreements.
- Temporary access routes, if any, may be left intact with landowner agreement unless otherwise restricted by federal, state, or local regulations. If a temporary access road is to be removed, the land will be returned to its previous use and restored to pre-construction conditions to the extent practicable unless the landowner requests differently.

- Within wetlands, all construction matting will be removed, and vegetation will be allowed to regenerate naturally.

b. Temporary restoration

Temporary cover and/or seeding may be used as a quick means to minimize soil erosion and reduce the potential for the establishment of NWIS. Temporary seed mixes are considered a cover crop and are made up of annual grasses, have rapid germination, and provide quick ground cover. These seed mixes are not intended to provide multi-year cover. Unless specifically requested by landowners or regulatory agencies, the Project will not establish temporary vegetation on cultivated land or in areas of open water.

Temporary restoration activities will include the repair of rutted surfaces and an even broadcast-seeding of the temporary cover-crop seed mix at the recommended rate for that particular seed mix (see Table 10-1). Temporary vegetation establishment may be expected to be successful between April 1 and September 30. Establishment of temporary vegetation is unlikely to be successful outside of this time window. Temporary use of mulch to stabilize soils may be applied outside of the April 1 through September 30 window.

Straw or wood chip mulch may be used to help stabilize areas of bare soils during the establishment of temporary vegetation or during the period between October 1 and April 1 (winter), except that mulch in wetland areas cannot exceed 1 inch in depth. The contractor will apply mulch during the establishment of temporary vegetation as requested by the landowner or specified in licenses or permits. Wood chip mulch free of soil material and derived from on-site sources may be used to protect areas where bare soils have been exposed due to tree clearing and construction activities. In winter situations, wood chips may be used to provide protection for bare soils exposed due to Project activities if out-of-season seeding is not applicable. Wood chip mulch derived from on-site locations may be spread up to 6 inches deep in upland areas to provide ground protection along access paths. Straw mulch may be used outside of the seeding window as a temporary erosion control measure, followed by temporary or permanent seeding at the earliest possible time consistent with the specific seed mix planting guideline.

c. Permanent restoration

Allowing for and encouraging native species to naturally re-establish temporarily disturbed areas is a primary BMP for this Project. Appropriate vegetative cover of the ROW will be required along the entire length of the Project. In most cases natural revegetation by early successional species following tree clearing and construction is expected to occur. In areas where native species revegetate the corridor, active restoration may not be required.

Permanent seed mixes for the Project include native seed varieties commonly found and/or available from local seed distributors. The permanent seed mixes are designed to augment the natural colonization of bare ground by local, native seed sources.

The Applicants will consider the inclusion of pollinator species based on the availability of local genotypes, appropriateness for the location/site, and landowner preference. For example, even if a site would otherwise support pollinator habitat, if the landowner intends to instead plant and

maintain turf grass, the parcel will be restored in accordance with the landowner's preference. Similarly, if a parcel is in agricultural production, depending on the timing of restoration, a cover crop may be planted to minimize erosion in the short-term, but pollinator or native species would not be planted in recognition of the fact that the parcel will return to agricultural production.

In wetlands, the preferred method for revegetation of disturbed areas is reliance on revegetation by resident plant communities. The Applicants, in consultation with the appropriate regulatory agencies, will determine whether disturbed areas will require the use of the temporary cover crop only, or seeding with a wetland-specific mix. In areas where the wetland plant community is dominated by native species with rhizomatous root systems that will likely recolonize areas of limited disturbance, bare soils will be broadcast-seeded with the seasonally appropriate temporary cover-crop seed mix. Large bare-soil disturbance areas are defined as greater than 50 square feet of exposed soils that is greater than 2 feet wide. These areas are large enough to preclude revegetation from the local, native seed source. Large bare-soil areas should be seeded using wetland seed mix.

Potential seed mixes are identified in Section 10.b below.

10. SEEDING

a. Preparation

Seedbed preparation and seeding will occur following completion of construction activities and site cleanup in any given location and consistent with seasonal conditions (e.g., snow cover or frozen ground may preclude effective grading and seeding). Where construction activities have resulted in erosion or rutting, surface grade will be restored prior to seeding.

To minimize ground disturbance along the entire corridor, forested areas will be cleared, but roots and stumps will be left in place. Within areas of cleared forest, it may not be practical to access large areas of ground with seeding and seedbed preparation equipment. In these areas, smaller vehicles may be required to perform tasks such as smoothing ruts, preparing seedbeds with small rakes, and surface packing after seeding. Fertilizers and other soil amendments are not recommended and will only be applied as requested by and agreed to in ROW negotiations with individual landowners.

b. Seed mixes

The Applicants will strive to use seed mixes that are native to Minnesota. The following restoration areas and vegetation types are present in and adjacent to the ROW:

- agriculture;
- turf grasses;
- pasture/unmanaged lands; and
- road ROW.

Seed mixes are based on regionally appropriate state seed mixes that are recommended by the BWSR¹⁵ and the MnDOT.¹⁶ The mixes are listed in Table 10-1. This includes two non-native seed mixes that are formulated for pastures or lawn. The identified seed mixes are examples of suitable mixes for each site and replacements are likely to be needed based on availability at the time of construction. Seed mixes were not selected for inundated wetland areas because it is expected that these areas would regenerate naturally. If re-seeding is required in non-inundated wetlands, those wetlands will be individually assessed to determine the appropriate seed mix.

Table 10-1. Proposed Project Seed Mixes

Seeding Area	Seed Mix Name (State Seed Code)	Purpose	Rate (PLS)
General	Cover Crop: Winter Wheat (WW) or Oats (O)	Short term stabilization for spring and summer (O) and fall (WW).	100 lbs/ac.
Small areas (less than 1 ac.)	Patch Mix (PM)	Reseeding small areas (<1ac.) due to disturbance, maintenance, utility work, etc. Also, for 2-5 year soil stabilization.	30 lbs/ac.
Commercial Areas	Southern Boulevard (SB)	Boulevards and other urban roadsides where low-maintenance and salt-tolerant turfgrass is needed.	160 lbs/ac.
Private turf	Residential Turfgrass (RT)	Boulevards and other urban roadsides where low-maintenance and salt-tolerant turfgrass is needed.	200 lbs/ac.
Mesic General Roadside	Mesic Inslope (MI)	Inslopes within 15 feet of shoulder and medians ≤55 feet wide; roads with <30,000 cars per day.	65 lbs/ac.
Mesic General Roadside	High-traffic Inslope (MTI)	Inslopes within 15 feet of shoulder and medians ≤55 feet wide; roads with ≥30,000 cars per day.	60 lbs/ac.
Sandy General Roadside	Sandy Inslope (SI)	Inslopes within 15 feet of shoulder and medians ≤55 feet wide; areas with sandy soils.	65 lbs/ac.
Wet Roadside Ditches	Wet Ditch (WD)	Wet ditches and some stormwater plantings; sites with wet soils mowed once per year or less. Meets pollinator habitat requirements.	20 lbs/ac.
Upland Roadside Native Vegetation	Southern Shortgrass Roadside (SSR)	Inslopes and medians when native vegetation is required; sites with dry soils mowed twice per year or less. Meets pollinator habitat requirements.	26 lbs/ac.
Mesic Roadside Native Vegetation	Southern Tallgrass Roadside (STR)	Backslopes and dry ditch bottoms; sites with moderate moisture mowed once per year or less. Meets pollinator habitat requirements.	26 lbs/ac.

¹⁵ BWSR. Undated. Seed Mixes. Available online at: <https://bwsr.state.mn.us/seed-mixes>. Accessed July 2024.

¹⁶ MnDOT, 2024. *Guide to the New 2024 MnDOT Seed Mixes*. Available online at: <https://dot.state.mn.us/environment/erosion/vegetation.html>. Accessed July 2024.

Seeding Area	Seed Mix Name (State Seed Code)	Purpose	Rate (PLS)
ac. = acre lbs = pounds PLS = Pure Live Seed			

The Applicants will use the seed mix recommended by the MDNR associated with the crossing of the Holloway Railroad Prairie and Benson Prairie Sites of Biodiversity Significance, as needed.

c. Seeding methods

Broadcast seeding may be used at all disturbed areas where bare soil is created. Seed is to be uniformly distributed by a mechanical, hand-operated seeder or by hand in small seeding areas. Following seeding, the surface will be raked with a cultipacker, harrow, or hand rake. The bed will be firmed as appropriate to site conditions.

Hydroseeding may be used at all disturbed upland areas where bare soil is created. Hydroseeding is not approved in wetland locations. Seed will be applied in a broadcast, hydromulch slurry. The hydromulch seed mix will allow the contractor to see where application has taken place, ensuring uniform coverage of the seeding area. The hydroseeder must provide for continuous agitation of slurry and provide for a uniform flow of slurry. Hydroseed slurry will not be held in the tank for more than 1 hour prior to application.

Seed drilling may be used in areas where stumps have been removed and a prepared seed bed can be created. However, these areas are expected to be infrequent and may not occur on the Project. Drilled seed will be sown at a depth of 0.25 inch. Seeding equipment will be able to accommodate and uniformly distribute different sizes of seed at the required depth. Feeding mechanisms will be able to evenly distribute different seed types at the rates specified. Seedbed soil will be suitably firmed immediately following seed drilling.

The appropriate seeding rate will be used for the specified method based on the mixture tabulation for the specified mix and will be based on PLS weight (not bulk weight).

d. Timing

Seeding periods for application of the permanent native seed mixes are most successful in the spring or fall. Spring plantings will be completed between April 1 to June 30 or when soil temperatures are at least 60 degrees Fahrenheit or higher. Fall seedings will occur when soil temperatures have fallen below 50 degrees Fahrenheit for a consistent period of time, usually around November 1. Frost seedings may also occur if the snow cover is shallow, ice-free, and winds are calm. The seed rates may be increased by 25-50 percent for frost seedings. Outside of these time windows, the cover-crop seed mixes will be applied according to temporary cover-crop seed mix specifications, as shown above in Section 10.b.

11. MONITORING

After construction, the Applicants will continue to inspect areas where seeding and temporary erosion and sediment control measures are in place in accordance with the General Permit. The Applicants will implement corrective actions where low germination or establishment, and/or high weed competition is identified. The Applicants will continue to inspect the ROW until permanent cover is established in accordance with the General Permit. The Project ROW will be monitored for up to three growing seasons unless permanent cover is achieved sooner.

12. OPERATION AND MAINTENANCE

a. Routine inspections

Applicants will conduct aerial and/or ground visual inspections of the ROW every year to ensure a safe and reliable corridor and to ensure access for maintenance activities or emergencies. Maintenance work will be based on the findings of those inspections.

b. Routine maintenance

Applicants will periodically clear vegetation from the existing ROW to maintain a safe and apparent corridor and to allow access for maintenance activities or emergencies. The clearing will be done consistent with wire/border zone practices (see Section 12.c for more detail on the wire/border zone), unless otherwise required by applicable permit, approval, or regulation. Clearing typically includes brushing equipment traveling down the ROW, which may consist of tracked or rubber-tired equipment to cut brush and trees, hand-held saws, or other manual methods. Small cuttings will be left in place, and non-merchantable timber or slash will be disposed of where it originates, hauled off-site, or chipped and evenly spread on the ROW. If burning is proposed, the Applicants will consult with landowners, as well as applicable authorities to obtain necessary authorization or permits.

Project-specific maintenance techniques and mitigation measures include:

- If the surface is unstable such that rutting, soil compaction, or soil mixing may occur, low ground-pressure equipment will be used or maintenance equipment will be operated from construction mats that will be removed upon completion of the work.
- Steep slopes and slopes leading to waterbodies will be cleared by hand, leaving adequate herbaceous or low shrub cover to avoid erosion. Trees and shrubs will not be grubbed; all roots will be left intact.
- Vegetation management requirements stipulated in federal state, or local licenses or permits will be followed.
- All temporary work areas (such as staging areas and additional spoil storage areas) will be located outside of wetland boundaries, where topographic conditions permit. If topographic conditions do not permit, an alternate location or matting will be used to minimize impacts, and the Applicants will obtain the required permit or authorization.

Due to the typically unstable nature of soils in wetlands, and to preserve wetland hydrology and function, special practices are necessary for some operations and maintenance activities as follows:

- Heavy equipment passage through wetlands will be limited to only when necessary to complete the operations and maintenance activity.
- The Applicants will attempt to complete maintenance clearing during frozen conditions. When frozen conditions are not practicable, maintenance will be done with hand tools or by using low ground-pressure equipment (ATVs and the like) after installing temporary matting or corduroy.
- Brush within a wetland may be cut with a brush mower or similar device if the chips/mulch will not exceed 1 inch in depth. If sufficient brush is present such that debris will exceed 1 inch, sufficient brush will be hauled out for processing in an upland area.
- Wetlands generally revegetate naturally. If no standing water is present, the Applicants will seed with the appropriate seed mix from Table 10-1 or as specified by the applicable permit or authorization (see Section 10.b). No fertilizer or lime will be applied in wetlands.

c. Wire/border zone

The Applicants anticipate using the wire/border zone methodology in maintaining the ROW, unless another maintenance practice is required by applicable permit or approval.¹⁷ The wire zone, or clear zone, is generally defined as the area that extends 15 feet outside of the area directly below the outermost conductors of the transmission line¹⁸ (see Figure 12-1). For example, where conductors are located on both sides of a structure, the horizontal distance between 115-kV conductors is approximately 15 feet, which would result in a total wire zone width of 45 feet. Narrower total widths might be viable if the conductors are located only on one side of the structure, depending on terrain conditions and equipment accessibility.

The border zone extends from the edge of the wire zone to the edge of the easement ROW.

The wire zone will be maintained free of any vegetation that would inhibit the Applicants from accessing the ROW with equipment or limit the ability to use equipment, such as bucket trucks, to maintain or quickly repair the transmission line. No trees or shrubs will be allowed to establish within the wire zone. Stumps or roots that could impede equipment travel will be removed by cutting or grinding them at or slightly below the surface.

Within the border zone, landowners may plant lower growing tree species or shrubs if the species does not exceed a height as depicted in Figure 12-1, unless other ROW conditions prevent vehicle access. Trees that lie outside of the easement but have branches and/or foliage that lie within the

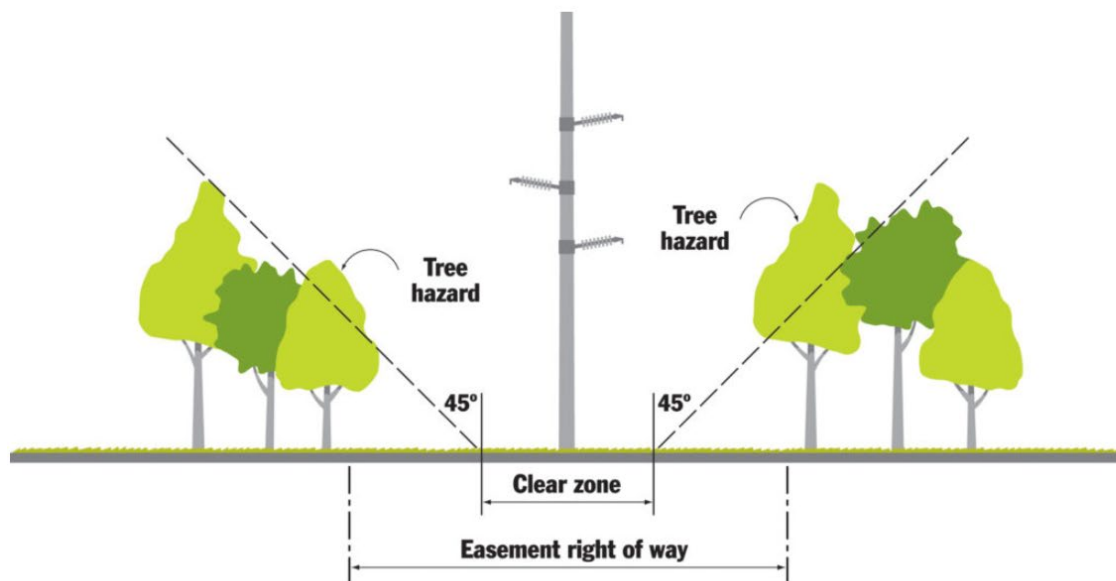
¹⁷ For example, the Applicants are aware that the MnDOT may not support the wire/border zone practice for facilities in MnDOT ROW.

¹⁸ In areas where sloped, rocky, or other complex terrain characteristics limit equipment access on one side of the transmission centerline or where the transmission line angles, the wire zone may need to be extended further out than 15 feet on one side of the transmission centerline.

border zone, as depicted in Figure 12-1, may be pruned or removed. In the border zone, allowed woody vegetation can have increasing heights moving away from the wire zone up to a maximum mature height of 15 feet. Applicants will encourage landowners to contact the utility owner regarding any planting within the ROW.

Danger trees are designated by a certified arborist and are typically any tree that is leaning, damaged, having poor root structure, or showing signs of internal decay such that applicable ROW inspectors believe all or portions of the tree may fall into the transmission line. Applicants' easements typically authorize the removal of danger trees outside of the ROW. Danger tree removal is a critical aspect of ensuring transmission line reliability and fire prevention.

Figure 12-1: Wire/Border Zone



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d. Emergencies

It may be necessary for the Applicants to cut, trim or remove vegetation due to damage caused by weather events or accidents. Such work is typically done to facilitate restoring services on the line. Staff will attempt to notify the landowner prior to entering the property.

¹⁹ Not to scale.