

**Appendix J**  
**Draft Vegetation Management Plan**

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**DRAFT VEGETATION MANAGEMENT PLAN**  
**Big Stone South to Alexandria 345 kV**  
**Transmission Line Project**

**MPUC DOCKET NO. E017, ET10/TL-23-160**

**October 2024**

## **1.0 Introduction**

The Big Stone South to Alexandria Project (Project) is a 345 kilovolt (kV) transmission line from the existing Big Stone South Substation in South Dakota, east to the existing Alexandria Substation in Minnesota. The Project will be located in portions of Big Stone, Swift, Stevens, Pope, and Douglas Counties, Minnesota. The Project is one segment of the larger Big Stone South – Alexandria – Big Oaks 345 kV Transmission Project. The Project comprises the Western Segment of the Big Stone South – Alexandria – Big Oaks 345 kV Transmission Project. The Project is proposed by Otter Tail Power Company (Otter Tail) and Western Minnesota Municipal Power Agency (Western Minnesota), through its agent, Missouri River Energy Services (MRES) (collectively, the Applicants).

This draft Vegetation Management Plan (VMP or Plan) is intended to describe the Applicants' standards for handling of vegetation removal and protection of existing vegetation during site preparation and construction and for revegetation of areas of exposed soil during restoration following Project construction. The VMP will be implemented in conjunction with the Agricultural Impact Mitigation Plan (AIMP), construction stormwater permitting and plans (as needed), and other required approvals concerning land disturbance activities associated with construction of the Project. The VMP will also be implemented during operation of the Project.

The Applicants provide this draft VMP for consideration as part of the route permit proceedings currently underway with the Minnesota Public Utilities Commission (Commission).

## **2.0 General Right-Of-Way Vegetation Management**

The Applicants' standard practice is to clear all woody vegetation within the full right-of-way (ROW) width for construction of new transmission lines. This includes cases where a new line will be located within an existing ROW such as for a line rebuild or double-circuiting a new line with an existing line. The purpose of clearing to the full extent of the ROW is to ensure adequate and safe working spaces for crews during construction as well as to provide appropriate clearances for safe reliable operation of the lines once construction is complete. There are limited circumstances when this practice is modified and selected vegetation can remain within the ROW provided National Electric Safety Code (NESC) clearance requirements are met.

While removing woody vegetation within the ROW is necessary, efforts will be made to protect existing compatible low-growing vegetation to minimize construction impacts such as soil erosion, wetland damage, or habitat loss. Implementation of integrated

vegetation management practices help to minimize the impacts of future vegetation management activities on a property. The use of herbicides focuses on controlling woody vegetation within the ROW to reduce the impacts of the need to mow on a property and help establish a sustainable ROW that can be managed with selective herbicide treatments. A timeframe for the conversion of a ROW to establish compatible, non-woody vegetation will vary based on site conditions. A property owner could also encourage this conversion of the ROW to compatible vegetation by allowing selective herbicide use and through planting vegetation that results in increasing compatible vegetation within a ROW.

The following is a list of general practices that will be used to minimize vegetation impacts related to Project construction:

- Use erosion control best management practices (BMPs) to intercept stormwater runoff from areas disturbed as part of clearing operations. Stormwater BMPs will be addressed in the Project-specific Stormwater Pollution Prevention Plan (SWPPP);
- Minimize rutting by using matting materials in wetland areas for all construction activities, including ROW clearing activities and to perform work on firm or frozen ground that can support the equipment used during winter construction;
- Minimize soil disturbance in steeply sloped areas, to the extent possible and/or practicable;
- Limit construction activities, including vegetation removal, to the ROW and off-ROW access;
- To the extent practicable and safe, limit traffic in the ROW between transmission structure locations to a single access path;
- Limit staging and lay-down areas to previously disturbed areas where practicable;
- To the extent practicable, complete construction in wet organic soils when the ground is frozen; and
- When existing, low-growing vegetation is disturbed during construction, focus restoration efforts on establishing compatible (low-growing), non-invasive species within the ROW.

### **3.0 Vegetation Removal**

The Project will require the clearing of vegetation within the ROW and along temporary construction access roads. In addition, tall woody vegetation outside of the ROW at risk of hazardous falls into the ROW that may interfere with safe construction and safe and reliable operation of the transmission line will be removed and managed through the operational life of the Project.

Clearing of vegetation will occur prior to other construction activities as allowed by landowner agreements and permit conditions. Clearing may be accomplished with the use of chainsaws, mowers, and hydraulic tree-cutting equipment. Vegetation will be cut at, or slightly above, the ground surface. Rootstock or stumps will typically be left in place unless transmission structure installation or construction access requires otherwise or at the request of the landowner.

Landowners will be notified to allow them to harvest trees within easement boundaries or hazardous trees outside easement boundaries prior to the initiation of clearing. The landowner will retain the title to all timber material, if desired. Non-merchantable material, including trees, brush, and slash, will be either cut and scattered, placed in windrow piles, or chipped. Non-merchantable felled material may also be removed from the ROW in a fashion that does not cause erosion unless BMPs are installed.

#### **3.1 Upland Vegetation Removal**

The cut and scatter method consists of cutting understory trees, branches, and brush, sectioning them into smaller pieces, and scattering them across the site. The cut and scatter method may be used in areas where limited clearing is necessary, and access is challenging. This method will be used to limit the need for unnecessary equipment access and hauling which could potentially disturb existing ground or vegetation.

Woody vegetation may be chipped and scattered over the ROW to a maximum depth of one inch in non-agricultural upland areas.

#### **3.2 Wetland Vegetation Removal**

The use of heavy equipment in wetlands will be kept to the minimum extent practicable. Minimization of damage to wetland vegetation and soils will be accomplished by the following BMPs:

- constructing in wetlands during frozen conditions to the extent feasible;

working in dry conditions;

- using low ground-pressure tires or specialized tracked vehicles; and
- using matting materials during non-frozen ground conditions.

Removal of trees and shrubs from forested wetlands may be necessary in some locations. The removal of woody vegetation within forested wetlands will be conducted in accordance with applicable wetland permit conditions. Within these areas, all trees and large shrubs will be cleared to ground level. Small diameter trees and shrubs (less than 6-inch diameter) will be cut and debris scattered in place. Large diameter trees and shrubs (greater than 6-inch diameter) will be hauled out of wetland areas to suitable upland locations and processed as described in **Section 3.0**. If the cut and scatter method is used within wetland areas, no slash material will be left in the wetlands. Chipping or scattering of chips will not occur in wetlands.

Stump removal may occur within wetlands only where stumps interfere with the placement of construction mats or pole locations, or pose a risk to construction tires and equipment. Where removal is required for access, stumps will be ground level with or slightly below the ground surface using low ground-pressure, track-mounted equipment. Woody materials generated by stump grinding may be thin-spread in the wetland but may not be mounded.

#### **4.0 Herbicide Use**

Herbicides may be used within the ROW to control regrowth of woody species, prevent the re-sprout of stumps of tall-growing tree species, or to control invasive or noxious weed species. Herbicides will be used in accordance with manufacturer's specifications and all applicable federal and state regulations. Herbicides designated for upland use will not be used within 75 feet of the vegetative buffer of waterbodies. Herbicides used in or near wetlands and waterbodies must be designed for use in wet areas as designated by manufacturer's specifications and federal and state regulations. Herbicides will not be used on public lands without required permits/approvals and will not be used at organic farms or other properties where landowners prohibit their use.

The contractor applying herbicide will be required to obtain any necessary permits and/or certifications prior to herbicide placement and will be required to keep proper documentation of location and timing of herbicide use. Treatment will conform to manufacturers' specifications.

## **5.0 Noxious Weeds and Invasive Species Control**

The Applicants have identified mitigation measures to be implemented to prevent the introduction and spread of noxious weeds and invasive species (NWIS) on lands disturbed by construction activities.

Preventing the introduction of NWIS from outside of the Project area will be primarily accomplished by ensuring that, prior to arrival onsite, equipment is clean and visible dirt or plant parts are removed using methods such as vehicle washing; high-pressure, compressed-air blowers; or brushing. A variety of methods can be used to control NWIS that are already present within the Project ROW or access routes. These include completing tree and brush clearing during the winter, treating NWIS-infested areas with herbicide prior to start of clearing, spreading mulch along access roads, and routing access roads away from NWIS-infested areas.

Winter clearing limits the likelihood of construction equipment coming in contact with NWIS plant parts or seeds and reduces the chances of spreading them throughout the ROW. Treatment of NWIS areas with herbicides before they are able to go to seed can also minimize spread. If mulch is used on the Project, it will consist of state-certified, weed-free material or mulch derived from onsite locations. The contractor will be responsible for locating and documenting the source of certified, weed-free mulch. Copies of the applicable certification documentation must be made available upon request to the appropriate agencies. Mulch derived from onsite locations may be spread up to six inches deep in upland areas to provide ground protection along access roads. Upon abandonment of access roads, woodchip mulch will be spread evenly to a depth no greater than one inch. No mulch will be spread in wetland locations. Major NWIS infestation areas identified during the first growing season will be treated with the use of herbicides or by mechanical methods.

## **6.0 Seeding and Revegetation**

Revegetation of areas disturbed by construction activities will take place as soon as practicable following construction completion in those areas. Seedbed preparation will be dependent on the site conditions following construction activities and may include tilling to a minimum depth of four inches with a disc, field cultivator, or chisel plow, breaking up large clumps and firming the soil surface. Prior to seeding, prepared beds should be sufficiently soft to allow for seed penetration and mulch anchoring, while sufficiently firm to provide surface soil stability. Seeding and mulching should occur parallel to ground contours as practicable.



In areas where stumps remain 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 with landowners.

Because of the linear nature of transmission line projects, there are typically many different landcover types and plant communities impacted by Project construction. In cases where there are exposed soils in areas such as roadsides, field edges, and other locations dominated by non-native species, a Minnesota state seed mix from the 25 series (Non-Native Grassland) will typically be used. These are certified seed mixes that are designed for regional land cover types and meet minimum standards for seed purity, germination rate, weed seed content and pure live seed weight, and are certified as noxious-weed free. Seed mixes can be found here: <https://bwsr.state.mn.us/seed-mixes>. In locations where disturbances are within previously undisturbed natural areas which contain native plant species, an appropriate native seed mix will be used. On private agricultural lands, the Applicants will implement applicable portions of the AIMP and will work with landowners to develop appropriate measures for reseeded of disturbed soils which may involve planting of row crops. Pastures will be seeded with landowner-specified seed mix.

## **6.1 Seeding Methods**

Seeding methods may include broadcast, seed drilling, or hydroseeding.

Broadcast seeding is the most commonly used method for relatively small, disturbed areas, which are typically what is seen in transmission line construction. Seed will be uniformly distributed by a mechanical, hand-operated seeder, or in small seeding areas, by hand. Following seeding, the surface will be raked with a cultipacker, harrow, or hand rake. The bed will be firmed as appropriate to site conditions.

Drilled seed will typically be sown at a depth of approximately 0.25 inch; however, some native seed mixes contain small seed which needs to be shallower. If native seed mixes are being installed via seed drill equipment, the 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. Seed drilling will be only used in areas with a larger disturbance footprint.

Hydroseeding involves applying seed in a broadcast, hydromulch slurry. The hydromulch mix allows the installer to see where application has taken place, ensuring uniform coverage of the seeding area. The hydro-seeder must provide for continuous agitation of slurry and provide for a uniform flow of slurry. This method is not recommended for diverse, native seed mixes because of the range of seed size and necessary planting depths.

When used, native seed mixes are typically most successful when installed between April 1 to June 30, or when soil temperatures have fallen below 55 degrees Fahrenheit in the fall. However, seeding will also be completed outside of those time periods, as areas are ready for revegetation, in order to facilitate permanent vegetation cover as soon as possible. Additional seed may be installed in areas where initial seeding is not successful.

Temporary seed (oats or winter wheat) may also be applied in those situations as a cover crop. Temporary seeding of cover crop will occur in locations where unfrozen, bare soil surface conditions and ruts will not be permanently restored within 30 days of completion of active work. Temporary restoration activities will include the repair of rutted surfaces and an even broadcast-seeding of the temporary cover-crop seed mix at a rate appropriate to the cover crop to provide erosion control of the soils. No mulch will be applied in wetland areas.

## **6.2 Natural Revegetation**

In many cases natural revegetation by early successional native species following tree clearing is expected to occur. In areas where native species voluntarily revegetate the ROW, active restoration and seeding may not be required. Regular monitoring will take place to ensure that NWIS are controlled, that desirable native plant species become the dominant vegetation communities in natural areas, and that bare soils are quickly stabilized to reduce erosion. In areas of minimal disturbance, vegetation will be allowed to regenerate naturally.

Where standing water is not present, and where surrounding vegetation is dominated by abundant native species, the seeding of bare soils created by rutting, using the temporary cover-crop seed mix, may be sufficient for cover while native species revegetate the area.

In areas where wetland plant communities are dominated by native species with rhizomatous root systems that will likely rapidly recolonize areas of limited disturbance, bare soils may be broadcast-seeded with the seasonally appropriate temporary cover crop. In areas where disturbed and bare soils are sufficient to preclude revegetation from the local, native seed source, a native wetland seed mix will be applied.

## **7.0 Erosion Control**

In some cases, temporary erosion control methods will be necessary to stabilize soils and give the seed time to germinate. Erosion control measures may consist of anchored straw mulch, hydromulch, wood chip mulch, or erosion control blankets. When used, the contractor will be responsible for acquiring certified weed-free mulch. If used, erosion-control blanketing will be wildlife-friendly, non-welded weave in order to minimize impacts to small wildlife. Mulch or blanketing will be required on disturbed, exposed soils on all slopes greater than five percent and on dry, sandy soils prone to erosion by wind or rain.

If there are locations where seeding is not possible, and there is adequate seed bank present in the soil, temporary stabilization using erosion control matting or mulch will be installed and maintained in a similar manner as in seeded areas. Dormant seeding may be used after soil temperatures have fallen below 55 degrees Fahrenheit and lower temperatures prevent seed from germinating. If dormant seeding is performed, temporary erosion control measures will be installed as indicated in the Project SWPPP.

## **8.0 Monitoring**

The Applicants will monitor and control NWIS within the ROW through the construction period. The Applicants' Environmental/Agricultural Monitor will inspect and provide information regarding infestations of NWIS along the ROW to the appropriate agencies. The Applicants will be required to meet easement and lease conditions and obligations and will continue to work with landowners and the appropriate agencies to achieve standards set forth in easement or lease agreements.

The Applicants will monitor areas where seeding and erosion control measures 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 long-term stability and sustainable native plant communities.

## **9.0 Operations and Maintenance**

Once the Project is constructed, Project operations and maintenance activities will likely continue to affect vegetation resources, but at a lower level of intensity than during construction. These activities will likely include periodic vegetation management along the transmission line by using control methods such as manual (chainsaws), mechanical (mowers and other specialized vegetation management equipment including aerial saws where appropriate) and herbicides.

The purpose of operational vegetation management will be to ensure that NESC requirements for clearance between trees and transmission lines be maintained at all times. Trees and other vegetation growing in or adjacent to the ROW will be trimmed to prevent power outages caused by tree contact with a transmission line. Any power line contact with a tree can cause a short circuit which may lead to a blackout or threaten public safety. Trees and other vegetation typically will be pruned beyond the minimum clearance distance to account for the fact that they continuously grow and sway with the wind. Power lines can also sag due to high usage, heat, or snow/ice build-up.

The Applicants may also clear vegetation to allow periodic access for maintenance and repair of the facilities in the surrounding vegetation.

During operations and maintenance, the Applicants will monitor vegetation growth and the control of NWIS as described in **Section 5.0**.