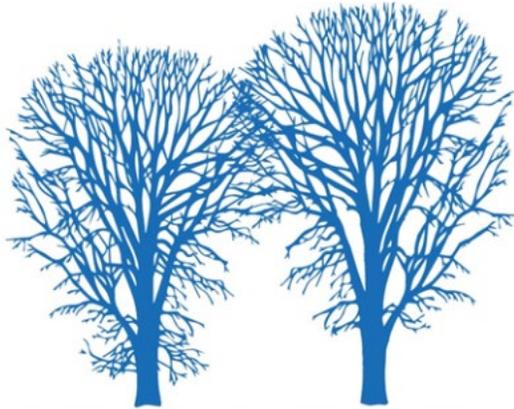


**APPENDIX G**  
**Draft Vegetation Management Plan**



**BIG BEND**  
**WIND**

**DRAFT VEGETATION  
MANAGEMENT PLAN**

**BIG BEND TRANSMISSION LINE  
EXTENSION PROJECT**

**MARTIN COUNTY, MINNESOTA**

December 2025

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## ACRONYMS AND ABBREVIATIONS

Applicants	Big Bend Wind, LLC and Great River Energy
Big Bend	Big Bend Wind, LLC
BMP	best management practice
BWSR	Minnesota Board of Soil and Water Resources
CSW	Construction Stormwater
dbh	diameter breast height
ECS	Ecological Classification System
Extension Project	Big Bend Transmission Line Extension Project
INS	invasive and noxious species
kV	kilovolt
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
Plan	Vegetation Management Plan
SDS	State Disposal System
SWPPP	Stormwater Pollution Prevention Plan

## **1.0 EXTENSION PROJECT SUMMARY**

Big Bend Wind, LLC (Big Bend) and Great River Energy (Applicants), are applying to the Minnesota Public Utilities Commission (MPUC) for a route permit to build a new 4.5-mile, 161-kilovolt (kV) single-circuit transmission line and to construct a new 161-/345-kV Step-up Substation and Interconnection Substation at the existing Lakefield Junction Substation in Cedar Lake Township, Martin County, Minnesota, referred to as the Big Bend Transmission Line Extension Project (Extension Project).

## **2.0 PLAN OVERVIEW**

This Vegetation Management Plan (Plan) has been developed for the Extension Project to address an anticipated Route Permit condition related to vegetation management.

The primary goal of this Plan is to construct and maintain the Extension Project in a manner that ensures safe and reliable transmission infrastructure. In addition, this Plan addresses the following goals:

- Develop and maintain cooperative relationships with landowners along the right-of-way and accommodate reasonable requests and preferences related to right-of-way vegetation management.
- Comply with applicable requirements in federal, state, and local permits, licenses, and easements.
- Prevent the introduction and spread of invasive and noxious species (INS) due to the Extension 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, MPUC's Generic Vegetation Establishment and Management Plan Guidance.

## **3.0 SITE DESCRIPTION**

### **3.1 Existing Conditions**

The Minnesota Department of Natural Resources (MDNR) and the U.S. Forest Service have developed an Ecological Classification System (ECS) for ecological mapping and landscape classification. The Extension Project is located within the North Central Glaciated Plains Section of the Prairie Parkland Province (251B). The Extension Project is in the southeastern part of the Minnesota River Prairie ecological subsection.

The Minnesota River Prairie subsection coincides with large till plains flanking the Minnesota River. Soils are loamy and well-drained with thick dark surface horizons. Annual precipitation in the Minnesota River Prairie subsection ranges up to 30 inches with an average growing season that lasts approximately 147 to 152 days. Current land use in this subsection is primarily agricultural activity; there are few remnants of pre-European contact vegetation left.

### **3.1.1 Extension Project Components**

#### **3.1.1.1 Transmission Line Right-of-Way**

Big Bend anticipates constructing the new single-circuit 161-kV transmission line and structures using a design and span lengths that require a variable right-of-way. When paralleling existing road rights-of-way, Big Bend will utilize a right-of-way width of 150 feet, 50 feet wide on the roadside and 100-feet wide on the non-roadside of the alignment. Where the Extension Project will not parallel existing road right-of-way, Big Bend will generally utilize a right-of-way width of 100 feet. In coordination with a private landowner, to avoid a cemetery while also minimizing transmission structure placement in the middle of agricultural fields, Big Bend has an approximately 200-foot right-of-way to accommodate a wider span length and the final structure design. Landowners will be compensated for the right-of-way as part of the easement acquisition process.

#### **3.1.1.2 Substations**

At the terminus of the transmission line will be an approximately 6.5 acre Substation Development Area that will include a Big Bend 161/345 kV Step-up Substation and a Great River Energy Interconnection Substation on the same pad; the Substation Development Area is on property owned by Great River Energy.

#### **3.1.1.3 Temporary Construction Workspace and Access Roads**

Temporary construction areas typically include staging and stringing areas. Staging areas are used to temporarily store and stage equipment and materials to be used during construction activities. Stringing areas are additional workspace located at points of intersection along the transmission line to allow for the stringing and pulling of the transmission line conductors. Staging or stringing setup areas will not be placed within or adjacent to water resources to the extent practicable.

Temporary access roads may also be required to access the right-of-way during construction. Because this Extension Project is largely co-located with existing township and county roads, minimal access roads will likely be required; however, temporary approaches from existing roads to the transmission line right-of-way will be required.

Landowner agreements will be acquired for temporary workspace and access road areas, in addition to township and county road permits, as needed.

## **4.0 MANAGEMENT OBJECTIVES**

### **4.1 Reliable and Safe Operation**

The Applicants' primary goal is to construct the Extension Project and then operate and maintain the Extension Project and its right-of-way in a safe and reliable manner. To ensure safe construction of the Extension Project, Big Bend will clear the right-of-way of woody vegetation in advance of construction. Additional detail regarding the right-of-way preparation and construction process is included in **Section 5**. After construction, Big Bend will restore the right-of-way as discussed in **Section 6**. Big Bend will conduct annual vegetation inspections along the right-of-way to ensure safe and reliable operations and will implement "wire zone" practices as discussed in more detail in **Section 8.3**.

### **4.2 Landowner Coordination**

Big Bend works cooperatively with landowners before, during, and after the construction process

regarding easements, rights-of-way, structure locations, restoration, and maintenance. Prior to the submittal of Route Permit application to the MPUC, Big Bend obtained voluntary easements from all landowners along the proposed right-of-way, including temporary workspace. Big Bend will continue to work with landowners to site structure locations based on final engineering. Big Bend will continue to provide notifications to landowners prior to the start of construction, and will maintain communication with landowners during the construction and restoration process to ensure activities minimize disruption to landowners and to ensure restoration has been completed to the satisfaction of the landowners, to the greatest extent practicable.

This Plan acknowledges that Big Bend does 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 Extension Project and is otherwise lawful. As such, this Plan reflects that Big Bend 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. When coordinating with landowners regarding restoration and maintenance practices, Big Bend will also discuss the use of native and/or pollinator vegetation with landowners, where desired and practicable.

### **4.3 Maintain Environmental Compliance**

In addition to the Route Permit, Big Bend is required to comply with other applicable federal, state, and local permits, licenses, and easements. Potential permits, licenses, and easements are listed and addressed in the Route Permit Application. Where those permits, licenses, or easements conflict with this Plan, they shall take precedent over this Plan to the extent they do not violate any other route permit conditions. For example:

- Road right-of-way permits: Where the Extension Project will impact road rights-of-way, Big Bend will follow the vegetation management requirements and guidelines of the appropriate road authority.
- Stormwater Pollution Prevention Plan (SWPPP): The Applicants will apply for coverage under the National Pollutant Discharge Elimination System (NPDES) / State Disposal System (SDS) Construction Stormwater (CSW) Permit program administered by the Minnesota Pollution Control Agency (MPCA). As required by this Permit, the Applicants will prepare SWPPP(s) to meet the site-specific requirements of the Extension Project, to outline procedures to minimize erosion, and to mitigate sediment transport during and after construction activities. The SWPPP covers, among other things, temporary erosion and sediment controls best management practices (BMPs). It is likely that Great River Energy and Big Bend will obtain separate NPDES permits and have separate SWPPPs to cover construction activities specific to each entity.
- MDNR license: The proposed right-of-way crosses one Public Water Watercourse managed by the MDNR, which will require a Utility License. The Applicants assessed the proposed right-of-way and Substation Development Area through MDNR's Minnesota Conservation Explorer in September 2025. No state-listed species, state species of special concern, or ecologically significant areas were identified within one-mile of the Extension Project.

### **4.4 Restoration**

Consistent with the MPCA's NPDES/SDS CSW Permit, sufficient vegetative cover will be achieved

once exposed soils have 70 percent permanent vegetative cover<sup>1</sup>. For transmission line construction, soil disturbances are generally limited to shallow surface impacts, other than the augering of holes for structure placement, so existing seed banks within the right-of-way soils will be retained and facilitate revegetation. Where necessary and appropriate, Big Bend will apply supplemental seed using BMPs as discussed further in Sections 6 and 7.

Sufficient vegetative cover is expected to be achieved within two years where no soil grading was necessary. Actual timeframe for complete restoration will be affected by weather and seasonal issues (e.g., appropriate timing for supplemental seeding). Further, if pollinator seeds are included in supplemental seed mixes, the Applicants recognize that pollinator establishment may take up to three to five years. Similarly, if grading is necessary, sufficient vegetative cover may take up to five years.

## **5.0 RIGHT-OF-WAY PREPARATION & CONSTRUCTION**

### **5.1 Landowner Notifications**

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

- The right-of-way will be staked indicating the extent of vegetation removal 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 right-of-way.
- All unwanted materials will be removed from the landowner's property.
- Herbicides may be used to prevent regrowth of woody vegetation. Landowners will be informed of the method of application and be given the opportunity to request that no herbicides be used. **See Section 6.**

### **5.2 Site Preparation**

All construction equipment and vehicles will be confined to the approved right-of-way, temporary construction areas and approved off-right-of-way access roads. Prior to the start of vegetation clearing, the Applicants will survey and stake the right-of-way, pole structure locations, Substation Development Area, temporary construction workspaces, and designated access roads in a manner that ensures all individuals can readily identify the boundaries of the authorized construction limits and to ensure that construction activities will only occur in areas authorized. The Applicants will also flag or install signs at environmentally sensitive features, such as wetlands and waterbodies. These activities are generally completed by a two-person crew travelling by foot, ATV, or pick-up truck.

Initially, labor and equipment will be mobilized to prepare staging areas for temporary trailer(s) and security measures to receive materials, storage containers, portable toilets, dumpsters, construction mats, tools, and equipment. Activities involved to prepare the staging areas include installation of erosion and sediment control BMPs, any grading/leveling of uneven surfaces, stripping, and

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<sup>1</sup> 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. Permittees 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).

stockpiling of topsoil (if necessary), and installation of gravel, tracking pads near entry/exit, if needed, installation of culvert(s), power, and fencing. This work is generally completed using equipment such as a bulldozer and dump trucks. The disturbance from the laydown yard is dependent on soil type and topography. Depending on landowner preferences, laydown yards may be left in place or returned to prior conditions following construction activities. The Applicants typically will locate staging areas in sites that have been previously disturbed (e.g., existing yards, parking lots, quarries).

### **5.3 Vegetation Clearing**

Vegetation clearing will be limited to the permanent right-of-way, temporary workspaces, danger trees off-right-of-way, and off-right-of-way access.

Where Extension Project schedule allows, 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 vegetation clearing. In areas where vegetation clearing with large equipment is not viable, it will be done with chain saws or other hand tools.

To facilitate construction equipment access and ensure safe clearances between vegetation and the transmission line, all vegetation will be cleared for the full width of the right-of-way. Stumps will be grubbed down the center of the transmission line for safety clearance; on the outer portion of the right-of-way they will typically be cut two inches from ground level or as agreed to with landowners. 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. Tree clearing is not anticipated in the Substation Development Area.

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 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 are 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 debris exceeds one-inch, sufficient brush will be hauled out for processing in an upland area so that debris within the wetland will not exceed one inch.

All landowner-requested materials will be stacked outside the right-of-way. All materials a landowner does not wish to keep will be stacked inside the right-of-way 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.

### **5.4 Sediment and Erosion Control Best Management Practices**

As discussed above, the Applicants will apply for coverage under the MPCA NPDES/SDS CSW Permit. The SWPPP developed as required by the MPCA NPDES/SDS CSW Permit will define BMPs for erosion and sedimentation prevention and mitigation.

## **5.5 Right-of-Way Preparation**

Big Bend will establish a travel lane within the right-of-way to allow for the safe passage of construction vehicles and equipment. Construction mats may be placed along the travel lane within delineated wetlands and along access roads to minimize ground impacts and provide access. Construction mats may also be used in other conditions as needed, such as unstable soils. Most mat travel lanes will be 16 to 20 feet wide.

Construction mats will be installed with rubber-tired grapple trucks, forwarders, forklifts, or skid loaders. Vegetation clearing crews will typically bring mats with the mechanized equipment and “leap frog” the mats forward as clearing progresses. The installation of the line will be completed in segments with mats being moved and used in other segments as construction progresses.

The proposed right-of-way crosses three waterbodies, including one Public Water Watercourse (Cedar Creek). Because the proposed right-of-way is largely co-located with roads, Big Bend does not anticipate the use of temporary clear span bridges over these waterway features. The transmission line will span these features, and pole structures will not be placed in these features.

### **5.5.1 Grading and Topsoil Segregation**

Prior to foundation installation, Big Bend will prepare a level and safe working area. In areas with uneven terrain, Big Bend may grade this area around the pole location. Where grading is required, Big Bend will strip the topsoil layer and potentially into the subsoil layer and store the topsoil and subsoil separately within the right-of-way. Gaps will be left and erosion and sediment control BMPs installed where stockpiled topsoil and subsoil piles intersect with water conveyances (i.e., ditches, swales) to maintain natural drainage. A minimum 1 foot of separation will be maintained between the topsoil and subsoil piles to prevent mixing. Where the 1-foot separation cannot be maintained due to space constraints, a physical barrier, such as a thick layer of mulch or silt fence, between the topsoil and subsoil piles may be used to prevent mixing.

### **5.5.2 Construction Dewatering and Discharge**

In areas with high water tables, or where water is needed to stabilize the hole during drilling, it may be necessary to dewater the excavation at either pole locations or the substations. The Applicants will typically utilize portable pumps to dewater the excavation; the number and size of pumps employed will be based on the volume of water to be removed from the trench.

Prior to initiating dewatering activities, the Applicants will prepare a water discharge plan to ensure that erosion and sediment control BMPs are applied in such a way as to minimize the potential for water containing sediment from reaching a wetland or waterbody. Furthermore, landowner approval is required in advance of placement of dewatering structures outside of the approved construction workspace. Dewatering structures will be sited to avoid environmental resources that may be affected by the discharge, such as federally- or state-listed species. The Applicants will utilize the figures accompanying the SWPPPs in addition to site-specific conditions at the time of dewatering to assess each water discharge situation, including soil type, contours, proximity to wetland and waterbody features, and existing vegetative coverage.

Typically, water will be directed to a well-vegetated upland area through a geotextile filter bag. Geotextile bags will be sized appropriately for the discharge flow and suspended sediment particle size. Where the dewatering discharge point cannot be located in an upland area due to site conditions and/or distance, the discharge will be directed into a straw bale dewatering structure designed to accommodate the maximum water discharge rate. A straw bale dewatering structure will be used in conjunction with a geotextile filter bag to provide additional filtration near sensitive

resource areas.

Appropriation and discharging activities will follow applicable regulations and permit requirements to ensure compliance with Minnesota water quality standards.

### 5.5.3 Invasive and Noxious Species Management

The movement of equipment to, from, and between various work sites has the potential to introduce and/or spread INS. Terrestrial plant INS in Minnesota are regulated by the Minnesota Department of Agriculture (MDA).<sup>2</sup> The MDNR also manages terrestrial plant INS on public lands and at public waters.

The Applicants will manage documented occurrences of terrestrial plant INS that are listed as “eradicate”<sup>3</sup> or “control”<sup>4</sup> under the “Prohibited Noxious Weed” category by the MDA. Further, Big Bend will adhere to the conditions set forth by the MDNR Utility License to Cross Public Waters.

The Applicants will implement the following BMPs during Extension Project construction to minimize impacts to vegetation and the potential for the introduction or spread of terrestrial plant INS:

- All construction equipment will be clean prior to entering the work site.
- The Applicants will adhere to the requirements of the MPCA SDS CSW Permit, including stabilization, and implementation, 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.
- Limiting grading and excavation to areas surrounding structure foundations, and only as needed along access roads and workspace areas for a level and safe working area.
- Where temporary grading is required, the Applicants will protect topsoil and replace topsoil and will stabilize and restore soil as described in **Section 6.0**.
- Minimally disturbed areas will be allowed to restore naturally. Where supplemental seeding is required, seed mixes labelled “Noxious Weeds; None Found” will be used in accordance with regulations and will utilize yellow tag seed when available.
- Infestations of MDS-listed eradicate or control species will be manually, mechanically, or chemically managed.
- Collected invasive materials will be secured and disposed of at an offsite location to avoid dispersal.

It is important to note that there may be INS already existing on private parcels along the right-of-way. While this does not preclude the Applicants from the responsibility of managing the spread of INS to the greatest extent possible, this ability may be limited by pre-existing conditions. For

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<sup>2</sup> Minn. Stat. § 18.75-18.913

<sup>3</sup> Prohibited noxious weeds placed on the noxious weed eradicate list are plants that are not currently known to be present in Minnesota or are not widely established. These species must be eradicated (Minnesota Statute §18.771 (b)(1)). This list is available at: <https://www.mda.state.mn.us/plants-insects/minnesota-noxious-weed-list>.

<sup>4</sup> Prohibited noxious weeds placed on the noxious weed control list are plants that are already established throughout Minnesota or regions of the state. Species on this list must be controlled (Minnesota Statute §18.771 (b)(1)). This list is available at: <https://www.mda.state.mn.us/plants-insects/minnesota-noxious-weed-list>.

example, an INS infestation adjacent to the right-of-way may result in INS also spreading onto the right-of-way. Big Bend does not have the authority to treat INS outside of their right-of-way. Where land outside of the right-of-way contains significant amounts of INS clearly visible from the right-of-way, Big Bend and its contractors will attempt to notify landowners about them and control options they may want to consider.

Revegetation in non-agricultural areas will be considered successful when the cover of acceptable vegetation is dominant and non-INS species density is less than or similar to surrounding lands that have not been affected by the Extension Project. If monitoring indicates a higher density of INS, the Applicants will respond appropriately to control INS.

### **5.5.3.1 Herbicide Application**

Landowners, operators of organic farms on adjacent parcels, and bee apiary operators within three miles will be notified 14 days in advance if herbicides will be used on the right-of-way. The notice will indicate what herbicides will be used and the methods of application (e.g., broadcast, selective spot treatment, or basal treatment).

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 INS. If organic farming is being practiced on adjacent property, additional requirements will be implemented (see Section 5.7).

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 manufacture'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, 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.

According to Driftwatch, there are currently no registered organic farms crossed or adjacent to the proposed right-of-way, and no registered apiaries within three miles of the proposed right-of-way.<sup>5</sup>

## **5.6 Organic Farms**

As discussed above, there are no currently known or registered organic farms within or adjacent to the proposed right-of-way. 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 would be adhered to

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<sup>5</sup> FieldWatch, Inc. 2025. DriftWatch Registry Mapping Program. Available online at: <https://mn.driftwatch.org/>. Accessed September 2025.

within and adjacent to these organic agricultural lands.

## **6.0 RESTORATION**

### **6.1 Overview**

Once construction ceases, the right-of-way will be inspected to identify areas impacted by Extension 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 disperse areas and 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 Extension Project activities are intended to protect wetland and water resources from issues associated with sedimentation, to protect wildlife habitat, and to manage the spread of INS.

Restoration work will be coordinated with each individual landowner by the restoration contractor and/or Applicants' land agent(s). Restoration activities might, as needed, include:

- Collecting and disposal of all work-related debris and trash.
- Discing or grading to repair rutting.
- Replacing stockpiled subsoil, followed by topsoil.
- Regrading areas disturbed by construction to pre-construction conditions.
- Applying temporary stabilization to minimize erosion potential to the extent practicable.
- Applying temporary seed if conditions or the time of year are not appropriate for final seeding.
- Permanent seeding in non-agricultural areas disturbed by transmission line structure installation.
- Unless timber, slash or chips have been requested by the landowner, all residual vegetation materials will be removed and properly disposed of off-site.
- Trees greater than 3 inches dbh or greater than 20 feet tall cut from a wetland will be moved outside of the wetland. If the materials are chipped or shredded, that work will be completed outside of wetlands.
- If vegetation maintenance is required within a wetland, brush may be cut with a brush mower or similar device if the chips/mulch will not exceed one inch in depth and the work will not cause rutting or compaction in the wetland. If debris will exceed one-inch, sufficient brush will be hauled out for processing in an upland area.
- In accordance with easements, Big Bend will work with 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 Big Bend's 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 and permits. 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.

## **6.2 Cleanup and Rough/Final Grading**

All waste materials, including litter, will be disposed of daily. Initial cleanup and rough grading activities may take place simultaneously. Cleanup involves removing construction debris (including litter generated by construction crews and excess rock) and large woody debris and repairing/replacing fences or other infrastructure removed or damaged during construction as agreed upon with the landowner.

Rough grading includes restoring disturbed subsoil to as near as practicable to pre-construction conditions and decompacting subsoil (where applicable) (see Section 6.2.1). Final grading consists of returning the topsoil where topsoil has been stripped and final contouring to as near as practicable to pre-construction conditions. This includes repairing any rutting observed along the right-of-way. Any remaining excess subsoil from excavations will be removed and disposed of at an approved off-site location as needed to ensure contours are restored to as near as practicable to pre-construction conditions. For temporary access roads that are not to be left in place per landowner agreement or permits and authorizations, the road area will be graded to near as practicable to pre-construction conditions. The Applicants will then prepare the seedbed and install or repair erosion control measures.

Construction mats and temporary bridges will be removed once restoration activities have been completed and access is no longer required to the right-of-way.

### **6.2.1 Decompaction**

In areas that were graded during construction, Big Bend will decompact the subsoil in actively cultivated areas after rough grading and before topsoil replacement, to relieve soil compaction and promote root penetration. To alleviate soil compaction, Big Bend will decompact the area prior to topsoil replacement with a deep tillage device or chisel plow if agreed to by the landowner. Soil conditions must be dry enough to shatter the compacted soil between the points of a subsoiler or chisel plow to lower the bulk density of soil and reduce compaction. Soil at the compacted depth must not be wet and plastic at the time of tilling, otherwise it will not reduce compaction. If subsequent construction and cleanup activities result in further compaction, the measures described above will be completed a second time to alleviate the soil compaction.

After topsoil replacement, the soil will be tilled with a disc or rolling harrow, drag harrow, Harley rake, field cultivator, or chisel plow (or equivalent) to break up large clods and to prepare the soil surface. Suitable conditions generally include a firm soil surface that is not too loose or too compacted and will be prepared to accommodate the seeding equipment and method to be used.

## **6.3 Temporary Revegetation**

Temporary cover and/or seeding may be used as a quick means to minimize soil erosion and reduce the potential for the establishment of INS. 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 Extension Project will not establish temporary vegetation on cultivated land or in areas of open water. The Applicants temporary seed mixes were developed based on Minnesota Board of Soil and Water Resources (BWSR) seed mixes (see **Table 1**).

<b>Table 1 Temporary Cover Crops</b>	
<b>Seed Mix</b>	<b>Purpose</b>
Oats Cover Crop (21-111)	Temporary cover crop for spring and summer plantings
Winter Wheat Cover Crop (21-112)	Temporary cover crop for fall plantings
Soil Building Cover Crop (field pea/oats) (21-113)	Temporary crop with soil building function
Source: BWSR. 2025. <a href="https://www.state.mn.us/bwsr/seed-mixes/">Seed Mixes   MN Board of Water, Soil Resources (state.mn.us)</a> . Accessed September 2025.	

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 erosion and sediment control BMPs will also be established until permanent cover has been established.

#### **6.4 Permanent Revegetation**

Permanent vegetation will be established in areas disturbed within the proposed right-of-way, temporary workspaces (e.g., graded areas) associated with the transmission line and substations, and along temporary access roads that are to be restored to pre-construction conditions, except in actively cultivated areas and standing water wetlands. The Applicant selected permanent seed mixes (see Table 2) to augment revegetation via natural recruitment from native seed stock in the topsoil and are not intended to change the natural species composition.

The seed mixes for permanent seeding include Minnesota state seed mixes that have been developed for a variety of habitats with the intent to increase diversity, create competition for INS, and promote plant community resiliency. Potential seed mixes were identified by using the Minnesota Department of Transportation (MnDOT) Seeding Manual<sup>6</sup> and the Board of Water and Soil Resources seed mix site<sup>7</sup>, and were selected to meet the expected variety of conditions present along the proposed right-of-way and at the substations. The seed mixes are suitable for the Prairie Parkland Province which the entire Extension Project is located in. If sufficient seeds are not available at the time of seeding, a similar, appropriate seed mix will be used, determined by the BWSR Seed Substitutions table.<sup>8</sup>

<sup>6</sup> MnDOT Seeding Manual 2023. [Vegetation - Erosion Control and Stormwater Management \(state.mn.us\)](https://www.state.mn.us/mndot/vegetation-erosion-control-and-stormwater-management/)

<sup>7</sup> BWSR. 2025. [Seed Mixes | MN Board of Water, Soil Resources \(state.mn.us\)](https://www.state.mn.us/bwsr/seed-mixes/). Accessed September 2025.

<sup>8</sup> [Seed Substitution list \(state.mn.us\)](https://www.state.mn.us/bwsr/seed-substitution-list/)

<b>Table 2 Permanent Seed Mixes</b>		
<b>Seed Mix (State Seed Code)</b>	<b>Purpose</b>	<b>Example Seeding Areas along Extension Project</b>
Mesic Inslope	Inslopes with 15' of shoulder and medians >55' wide; roads with <30,000 cars per day	Roadsides
Sandy Inslope	Inslopes with 15' of shoulder and medians >55' wide; areas with sandy soils	Roadsides
Wet Ditch	Wet ditches and some stormwater plantings; sites with wet soils mowed once per year or less	Roadsides Stormwater ponds
Southern Shortgrass Roadside	Inslopes and medians when native vegetation is required; sites with dry soils mowed twice per year or less	Roadsides
Southern Tallgrass Roadside	Backslopes and dry ditch bottoms; sites with moderate moisture mowed once per year or less	Roadsides
Mesic Prairie Southwest (35-542)	Mesic soils and full sun for at least 70% of the day where land is being converted from other uses such as agriculture or non-native grasses to a prairie reconstruction with the goals of providing wildlife habitat, soil stabilization, and water quality benefits	Prairie restoration areas
Dry Prairie Southwest (35-522)	Dry soils and full sun for at least 70% of the day where land is being converted from other uses such as agriculture or non-native grasses to a prairie reconstruction with the goals of providing wildlife habitat, soil stabilization, and water quality benefits	Prairie restoration areas
Woodland Edge South and West (36-212)	Dry to mesic soils and part sun for at least 50% of the day where land is being converted from other uses such as lawn, or agricultural fields like row crops or pasture	Edges of forested areas
Wetland Rehabilitation (34-172)	For use in areas with soil saturation within a foot of the surface during a majority of the growing season and full to partial sun where a wet meadow community is the goal. Intended for wetlands where supplemental seeding is needed.	Wetlands that need supplemental seeding only
Wet Meadow South and West (34-272)	Areas with soil saturation within 1 foot of the surface during the majority of the growing season and full to partial sun where land is being converted from other uses such as agriculture or non-native grasses to wetland restoration.	Emergent wetland areas
Wet Meadow Forb Sedge Rush South and West (34-273)	Areas with soil saturation within 1 foot of the surface during the majority of the growing season and full to partial sun where land is being converted from other uses such as agriculture or non-native grasses to wetland restoration. This mix is designed for areas with a high likelihood of invasive grasses such as reed canary grass and/or phragmites, and grass specific herbicides will be used as part of the management of the planting.	Wetlands with soil saturation, presence of INS and potential pesticide use.
Stormwater South and West (33-261)	Stormwater pond edges, temporarily flooded dry ponds, and temporarily flooded ditch bottoms	Edge of stormwater pond; edges of ponds or ditch bottoms that are temporarily flooded

<b>Table 2 Permanent Seed Mixes</b>		
<b>Seed Mix (State Seed Code)</b>	<b>Purpose</b>	<b>Example Seeding Areas along Extension Project</b>
Dry Swale / Pond (33-262)	Temporarily flooded swales in agricultural settings	Swales in agricultural fields
Riparian South and West (34-265)	Riparian areas along rivers, streams, and other waterbodies with areas of moist soils and potential flooding during part of the growing season and full to partial sun where land is being converted from other uses such as agriculture or non-native grasses to riparian plants	Waterbody / ditch crossings
Mid Diversity Mesic to Dry Buffer South and West (32-231)	Riparian buffer areas with mesic soils and full sun for at least 70% of the day where the goals of providing wildlife habitat, soil stabilization, and water quality benefits	Waterbody / ditch crossings
Mid Diversity Moist Buffer South and West (32-251)	Riparian buffer areas with moist soils and full sun for at least 70% of the day where the goals of providing wildlife habitat, soil stabilization, and water quality benefits	Waterbody / ditch crossings
Native Forage Buffer Mix South and West (32-232)	Areas mesic soils and full sun for at least 70% of the day where the goals are to establish native vegetation for soil stabilization and water quality improvements, but also allow grazing or haying for livestock forage once or twice per year	Pasture / hay fields
Beneficial Insects South and West (38-542)	Designed to support specialist bees, many Lepidoptera species, and a wide range of beneficial insects. Includes a wide range of plant families to maximize insect use, bloom periods, and long-term resiliency of the mix	Roadsides / upland areas
Pollinator Plot Southwest (38-541)	Designed to support specialist bees, many Lepidoptera species, and a wide range of beneficial insects. Includes a wide range of plant families to maximize insect use, bloom periods, and long-term resiliency of the mix	Roadsides / upland areas
Source: MnDOT Seeding Manual 2023. <a href="#">Vegetation - Erosion Control and Stormwater Management (state.mn.us)</a> . Accessed September 2025. BWSR. 2025. <a href="#">Seed Mixes   MN Board of Water, Soil Resources (state.mn.us)</a> . Accessed September 2025.		

It is important to note that native seed mixes can take 2 to 3 years to fully germinate depending on the time of year that the seeds were installed and soil, site, and weather conditions. During the first year, many native plants will have a somewhat weedy appearance growing to only about 1-3 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 be mature and start flowering by the third year. Depending on the seed mix, other plants will not appear or mature for several years.

In wetlands, the preferred method for revegetation of disturbed areas is reliance on revegetation by resident plant communities. However, supplemental seeding may be beneficial at some locations to improve cover of bare soils and increase diversity. The Applicants will use a wetland seed mix from Table 2 that most closely corresponds to the native vegetation community to seed large bare soil

disturbance areas (i.e., greater than 50 square feet of exposed soils that is greater than two feet wide). No fertilizer, lime, or mulch will be applied in wetlands.

## **6.5 Seeding Process**

### **6.5.1 Preparation**

Seedbed preparation and seeding are to 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.

Stumps will be grubbed down the center of the transmission line for safety clearance; on the outer portion of the right-of-way they will typically be cut two inches from ground level or as agreed to with landowners. Within areas of cleared trees, 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 right-of-way negotiations with individual landowners.

### **6.5.2 Seeding Methods**

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

Hydroseeding may be used at disturbed upland areas where bare soil is created. Hydroseeding is not approved in wetland locations as the method requires extra access by heavy vehicles. Seed will be applied in a broadcast, hydromulch slurry. The hydromulch seed mix will not contain plastic/polypropylene fiber additives or Malachite Green dye. The hydroseeder will 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 one 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 Extension Project. Drilled seed will be sown at a depth of 0.25 inch. Seeding equipment will be able to accommodate and uniformly distribute assorted sizes of seed at the required depth. Feeding mechanisms will be able to evenly distribute different seed types at the rates specified. Seedbed soil is to 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 Pure Live Seed weight (not bulk weight).

### **6.5.3 Timing**

Native plant seed mixes are often planted in the fall, generally after November 1, or when temperatures are below 50 degrees Fahrenheit for a consistent period of time in order to stratify the seeds to break their seed dormancy. Snow seeding may also be conducted in early or late winter when there is less than 4 inches of snow on sunny days. Spring seedings should be done around May 1 to June 30, or when soil temperatures are at least 60 degrees Fahrenheit or higher. 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 Table 1.

## **7.0 MONITORING**

After construction, the Applicants will continue to inspect areas where seeding and temporary erosion and sediment control measures are in place. The Applicants will implement corrective actions where low germination or establishment, or high weed competition is identified. Big Bend will continue to inspect the right-of-way until permanent cover is established in accordance with the MPCA SCS CSW Permit. The proposed right-of-way will be monitored for up to three growing seasons unless permanent cover is achieved sooner.

## **8.0 OPERATION AND MAINTENANCE**

### **8.1 Routine Inspections**

Big Bend will conduct aerial or ground visual inspections of the right-of-way 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.

### **8.2 Routine Maintenance**

The Applicants will periodically perform inspections, maintain equipment, and repair damage to the transmission line and substations. Regular maintenance and inspections will be performed over the life of the facility to ensure a reliable system. Tree clearing will be done consistent with wire/border zone practices. Vegetation clearing typically includes brushing equipment traveling down the right-of-way, 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, non-merchantable timber or slash will be disposed of where it originates, hauled off-site, or chipped and evenly spread on the right-of-way.

Other 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 weed-free mats or temporary timber corduroy that will be removed upon completion of the work.
- 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 any licenses or permits will be followed.

All temporary workspaces 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.

In wetlands, 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.
- Big Bend will attempt to complete maintenance vegetation clearing during frozen conditions. When frozen conditions are not practicable, maintenance will be done using low ground-pressure equipment (all terrain vehicles and similar), after installing temporary matting or

corduroy, or with hand tools.

- 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 debris will exceed one-inch, sufficient brush will be hauled out for processing in an upland area.
- Wetlands generally revegetate naturally. If no standing water is present, temporary cover crop may be planted (see Section 6.3). No fertilizer or lime will be applied in wetlands.

### **8.3 Wire/Border Zone**

Big Bend uses the wire/border zone methodology in maintaining the right-of-way. The wire zone, or clear zone, is generally defined as the area that extends 10-15 feet outside of the area directly below the outermost conductors of the transmission line.<sup>9</sup> For example, where conductors are located on both sides of a structure, the horizontal distance between 161-kV conductors is approximately 10-15 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. Big Bend encourages all landowners to contact us regarding any plans to plant anything other than agricultural crops or construct within the right-of-way.

The border zone extends from the edge of the wire zone to the edge of the easement right-of-way.

The wire zone is maintained free of any vegetation that would inhibit Big Bend from accessing the right-of-way with its equipment or limit its ability to use equipment, such as bucket trucks, to maintain or quickly repair the transmission line. No trees or shrubs are 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.

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 Big Bend's right-of-way inspectors believe all or portions of the tree may fall into the transmission line. Danger tree removal is a critical aspect of ensuring transmission line reliability and fire prevention and Big Bend will coordinate with landowners should a danger tree be identified along the right-of-way.

### **8.4 Emergencies**

It may be necessary for Big Bend to cut, trim or remove vegetations 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.

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<sup>9</sup> 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.